

Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

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	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 2 / 427
				Validity Status	Rev. No. B	

Content

1	INTRODUCTION	15
1.1	Activity Overview	15
1.2	Purpose of this Document.....	17
1.3	Scope of the Environment Plan	17
1.4	Titleholder Details	18
1.4.1	Details of the Liaison Person.....	18
1.4.2	Notifying of Change.....	18
2	ENVIRONMENTAL LEGISLATION	19
2.1	Commonwealth Legislation	19
2.1.1	OPGGS Act 2006 and OPGGS (Environment) Regulations 2023	19
2.1.2	<i>Environment Protection and Biodiversity Conservation Act 1999</i>	28
2.1.3	Environment Protection (Sea Dumping) Act 1981.....	43
2.1.4	Additional Relevant Commonwealth Legislation.....	43
2.2	Commonwealth Guidelines and Policies	51
2.3	International Agreements.....	54
2.4	Western Australian and Northern Territory Legislation.....	57
3	DESCRIPTION OF THE ACTIVITY.....	59
3.1	Overview.....	59
3.1.1	Wells information.....	59
3.1.2	Operational Area.....	65
3.1.3	Timing and duration	67
3.2	Monitoring and pre-decommissioning activities.....	68
3.2.1	GVI Survey Campaign	68
3.2.2	Geophysical and Geotechnical survey campaign.....	68
3.2.3	Pre-decommissioning inspection	70
3.3	Decommissioning activities.....	71
3.3.1	MODU mobilisation and positioning	71
3.3.2	Remove corrosion cap	71
3.3.3	Establish secondary well control.....	71
3.3.4	Drill out non-reservoir cement plugs (Petrel-4 only)	72
3.3.5	Well integrity evaluation	72
3.3.6	Set cement plug and permanent isolation of the reservoir.....	73
3.3.7	Cut and recover casing	73
3.3.8	Recovery of secondary well control	74
3.3.9	Wellhead removal alternatives.....	74
3.3.10	Demobilisation of MODU	77
3.4	Post-decommissioning activities	77
3.4.1	As-left survey.....	77
3.5	Support Operations	77
3.5.1	MODU Operations	77
3.5.2	Vessel Operations	78
3.5.3	ROV Operations.....	79
3.5.4	Helicopter Operations.....	80
3.6	Wellhead Removal Options Assessment.....	80
3.6.1	Overview	80
3.6.2	Process.....	81
3.6.3	Assessment Criteria and Ranking Details.....	82
3.6.4	Options Evaluation	83

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 3 / 427
				Validity Status	Rev. No. B	

3.6.5	Recommendations	89
4	DESCRIPTION OF THE ENVIRONMENT	90
4.1	Determination of the Environment that May be Affected.....	90
4.2	Particularly Relevant Values and Sensitivities of the Environment.....	92
4.3	Physical Environment.....	93
4.3.1	Bioregions.....	93
4.3.2	Hydrography and oceanography	94
4.3.3	Bathymetry and seabed morphology	94
4.3.4	Water quality	95
4.3.5	Air quality	96
4.3.6	Benthic habitats and communities.....	96
4.3.7	Existing Infrastructure.....	97
4.4	Ecological Environment	97
4.4.1	Plankton	97
4.4.2	Marine invertebrates	98
4.4.3	Threatened and Migratory Fauna	99
4.4.4	Biologically Important Areas and Habitat Critical.....	113
4.4.5	Seabirds and shorebirds	118
4.4.6	Fish, sharks and rays	119
4.4.7	Marine mammals	119
4.4.8	Marine reptiles.....	119
4.5	Protected and Significant Areas.....	121
4.5.1	State, Territory and Australian Marine Parks.....	121
4.5.2	Key Ecological Features	124
4.5.3	National Heritage Places	126
4.5.4	Ramsar Wetlands.....	126
4.6	Cultural and Socioeconomic Environment	126
4.6.1	Commercial Fisheries	126
4.6.2	Tourism and Recreational Fishing.....	154
4.6.3	Commercial Shipping.....	154
4.6.4	Defence Activities	156
4.6.5	Offshore Industry.....	158
4.6.6	Subsea Cables.....	160
4.6.7	Shipwrecks	162
4.6.8	First Nations.....	164
5	RELEVANT PERSON CONSULTATION	185
5.1	Overview.....	185
5.2	Identified Relevant Persons	186
5.2.1	Petrel Internal Stakeholder Mapping Workshop.....	188
5.3	Preparing for Consultation	188
5.3.1	Collation of Information for Consultation Materials	189
5.3.2	Development of Materials for Initial Consultation Information Package	189
5.3.3	Development of Advertisements	190
5.3.4	Development of Relevant Person Slide Set	190
5.3.5	Mapping Prioritisation of Relevant Persons	190
5.3.6	Implementing Planned Consultation Effort for Target Groups.....	191
5.4	Consultation Approaches and Activities	192
5.4.1	Consultation During Environment Plan Development	192
5.4.2	Specific Consultation Approaches for Relevant Persons	193
5.4.3	Extended Enquiry – Broader Consultation	199
5.4.4	Requests for Fees and Service Agreements	200
5.5	Consultation Outcomes	200
5.6	Ongoing Consultation.....	202

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 4 / 427
				Validity Status	Rev. No. B	

6	ENVIRONMENTAL RISK ASSESSMENT METHODOLOGY	203
6.1	Risk Assessment	203
6.1.1	Environmental Risk	210
6.2	Risk Reduction	210
6.3	As Low as Reasonably Practicable and Acceptance Criteria.....	210
6.3.1	As Low as Reasonably Practicable Criteria	210
6.3.2	Acceptance Criteria	211
7	ENVIRONMENTAL RISK ASSESSMENT - PLANNED OPERATIONS	212
7.1	Seabed Disturbance.....	212
7.1.1	Summary of Environmental Risk Assessment.....	212
7.1.2	Description of Hazard	212
7.1.3	Potential Environmental Impact	213
7.1.4	Environmental Performance Outcomes and Control Measures	215
7.1.5	As Low as Reasonably Practicable Demonstration.....	216
7.1.6	Acceptability Demonstration.....	217
7.2	Physical Interaction - Other Marine Users.....	218
7.2.1	Summary of Environmental Risk Assessment.....	218
7.2.2	Description of Hazard	218
7.2.3	Potential Environmental Impact	219
7.2.4	Environmental Performance Outcomes and Control Measures	221
7.2.5	As Low as Reasonably Practicable Demonstration.....	222
7.2.6	Acceptability Demonstration.....	223
7.3	Physical Presence – Equipment in-situ	225
7.3.1	Summary of Environmental Risk Assessment.....	225
7.3.2	Description of Hazard	225
7.3.3	Potential Environmental Impact	225
7.3.4	Environmental Performance Outcomes and Control Measures	229
7.3.5	As Low as Reasonably Practicable Demonstration.....	229
7.3.6	Acceptability Demonstration.....	231
7.4	Atmospheric Emissions and Greenhouse Gas	233
7.4.1	Summary of Environmental Risk Assessment.....	233
7.4.2	Description of Hazard	233
7.4.3	Potential Environmental Impact	236
7.4.4	Environmental Performance Outcomes and Control Measures	237
7.4.5	As Low as Reasonably Practicable Demonstration.....	238
7.4.6	Acceptability Demonstration.....	239
7.5	Noise Emissions	240
7.5.1	Summary of Environmental Risk Assessment.....	240
7.5.2	Description of Hazard	240
7.5.3	Potential Environmental Impact	247
7.5.4	Environmental Performance Outcomes and Control Measures	251
7.5.5	As Low as Reasonably Practicable Demonstration.....	252
7.5.6	Acceptability Demonstration.....	253
7.6	Light Emissions	254
7.6.1	Summary of Environmental Risk Assessment.....	254
7.6.2	Description of Hazard	254
7.6.3	Potential Environmental Impact	255
7.6.4	Environmental Performance Outcomes and Control Measures	259
7.6.5	As Low as Reasonably Practicable Demonstration.....	259
7.6.6	Acceptability Demonstration.....	261
7.7	Planned Discharges - Routine	263
7.7.1	Summary of Environmental Risk Assessment.....	263
7.7.2	Description of Hazard	263

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 5 / 427
				Validity Status	Rev. No. B	

7.7.3	Potential Environmental Impact.....	264
7.7.4	Environmental Performance Outcomes and Control Measures	266
7.7.5	As Low as Reasonably Practicable Demonstration.....	267
7.7.6	Acceptability Demonstration.....	268
7.8	Planned Discharges - Decommissioning.....	270
7.8.1	Summary of Environmental Risk Assessment.....	270
7.8.2	Description of Hazard	270
7.8.3	Potential Environmental Impact.....	273
7.8.4	Environmental Performance Outcomes and Control	276
7.8.5	As Low as Reasonably Practicable Demonstration.....	276
7.8.6	Acceptability Demonstration.....	278

8 ENVIRONMENTAL RISK ASSESMENT - UNPLANNED EVENTS 281

8.1	Interaction with Other Marine Users – Equipment in-situ.....	281
8.1.1	Summary of Environmental Impact.....	281
8.1.2	Description of Hazard	281
8.1.3	Potential Environmental Impact.....	281
8.1.4	Environmental Performance Outcomes and Control Measures	284
8.1.5	As Low As Reasonably Practicable Demonstration	285
8.1.6	Acceptability Demonstration.....	287
8.2	Marine Fauna Interaction.....	289
8.2.1	Summary of Environmental Impact.....	289
8.2.2	Description of Hazard	290
8.2.3	Potential Environmental Impact.....	290
8.2.4	Environmental Performance Outcomes and Control Measures	292
8.2.5	As Low As Reasonably Practicable Demonstration	293
8.2.6	Acceptability Demonstration.....	293
8.3	Introduction of Marine Pest Species	295
8.3.1	Summary of Environmental Impact.....	295
8.3.2	Description of Hazard	295
8.3.3	Potential Environmental Impact.....	297
8.3.4	Environmental Performance Outcomes and Control Measures	300
8.3.5	As Low As Reasonably Practicable Demonstration	300
8.3.6	Acceptability Demonstration.....	302
8.4	Accidental Release – Waste and Solid Objects.....	303
8.4.1	Summary of Environmental Impact.....	303
8.4.2	Description of Hazard	303
8.4.3	Potential Environmental Impact.....	304
8.4.4	Environmental Performance Outcomes and Control Measures	306
8.4.5	As Low As Reasonably Practicable Demonstration	307
8.4.6	Acceptability Demonstration.....	307
8.5	Accidental Release - Minor Loss of Containment.....	309
8.5.1	Summary of Environmental Impact.....	309
8.5.2	Description of Hazard	310
8.5.3	Potential Environmental Impact.....	310
8.5.4	Environmental Performance Outcomes and Control Measures	311
8.5.5	As Low As Reasonable Practicable Demonstration	312
8.5.6	Acceptability Demonstration.....	314
8.6	Accidental Release – MDO (Vessel Collision)	314
8.6.1	Summary of Environmental Risk Assessment.....	314
8.6.2	Description of Hazard	315
8.6.3	Potential Environmental Impact.....	321
8.6.4	Environmental Performance Outcomes and Control Measures	345
8.6.5	As Low as Reasonably Practicable Demonstration.....	345
8.6.6	Acceptability Demonstration.....	347

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 6 / 427
				Validity Status	Rev. No. B	

8.7	Oil Spill Response Operations.....	349
8.7.1	Summary of Environmental Risk Assessment.....	349
8.7.2	Description of Hazard	349
8.7.3	Potential Environmental Impact.....	351
8.7.4	Environmental Performance Outcomes and Control Measures	353
8.7.5	As Low As Reasonably Practicable Demonstration	353
8.7.6	Acceptability Demonstration.....	355
9	ENVIRONMENT OUTCOMES, STANDARDS AND MEASUREMENT CRITERIA	358
9.1	Control Measures and Performance Standards	359
10	IMPLEMENTATION STRATEGY	367
10.1	Systems, Practices and procedures.....	367
10.1.1	HSE Management System Overview	367
10.1.2	Eni Corporate Management System.....	368
10.1.3	Regional Eni Australia HSE Integrated Management System.....	370
10.2	Roles and Responsibilities.....	370
10.3	Training	373
10.3.1	General Arrangements.....	373
10.4	Competency	374
10.4.1	Contractor Selection and Management.....	374
10.4.2	Verification of Competence.....	375
10.5	Monitoring.....	375
10.5.1	Waste Monitoring.....	376
10.6	Auditing and Inspection	377
10.6.1	Vessel Audits.....	377
10.6.2	Environmental Inspections	378
10.7	Non-conformance, Corrective and Preventative Actions.....	378
10.8	External Reporting.....	378
10.8.1	Routine Reporting and Notifications.....	378
10.8.2	Incident Reporting (Reportable and Recordable)	384
10.9	Internal reporting.....	385
10.10	Knowledge-Sharing and HSE Communication.....	385
10.10.1	Internal Communication with Eni Natural Resources Division	386
10.10.2	Internal Eni Australia Communications.....	386
10.10.3	Non-verbal Communications	387
10.10.4	External Communications.....	387
10.11	Management Review and Improvement.....	388
10.11.1	Health, Safety and Environment Management Review	389
10.12	Management of Change and Reviews of this Environment Plan.....	390
10.13	Incident Management	391
10.13.1	Overview.....	391
10.13.2	Incident and Crisis Management Organisational Structure	391
10.13.3	Chain of Command.....	392
10.13.4	Activation.....	393
10.13.5	Petrel Field response.....	394
10.13.6	Coordination with other organization	395
10.13.7	Emergency Response Training	395
10.13.8	Dangerous Weather Response.....	396
10.14	Chemical Assessment Process.....	396
10.14.2	Centre for Environment, Fisheries and Aquaculture Science Offshore Chemical Notification Scheme Registered Chemicals	397
10.14.3	Chemicals Not Registered by the Centre for Environment, Fisheries and Aquaculture Science Offshore Chemical Notification Scheme	397

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 7 / 427
				Validity Status	Rev. No. B	

10.14.4 As Low as Reasonably Practicable Chemical Assessment and Justification for Use or Discharge.....397

11 REFERENCES..... 400

Appendix A: HSE Statement	418
Appendix B: Environmental Values and Sensitivities	419
Appendix C: Relevant Person Consultation.....	420
Appendix C1: Bridging Document.....	421
Appendix C2: Relevant Person Register	422
Appendix C3: Consultation Materials	423
Appendix C4: Consultation Efforts Log	424
Appendix D: Petrel Oil Spill Modelling.....	425
Appendix E: OPEP	426
Appendix F: OSMP.....	427

List of Tables

Table 1-1: Titleholder Details	18
Table 2-1: Requirements of the OPGGS (E) Regulations	21
Table 2-2: Summary of the purpose of management plans, recovery plans and conservation advice.....	30
Table 2-3: Summary of additional environment protection and biodiversity conservation management and recovery plans and conservation advice relevant to the petroleum activities	31
Table 2-4: Summary of Commonwealth legislation relevant to the petroleum activities	44
Table 2-5: Summary of Commonwealth guidelines and policies relevant to the decommissioning activities.....	51
Table 2-6: Applicable international agreement and conventions.....	54
Table 2-7: Summary of WA and NT legislation relevant to the petroleum activities	57
Table 3-1: Petrel-3 well information.....	60
Table 3-2: Petrel-4 well information.....	61
Table 3-3: Summary of the activities covered in this EP and duration.....	67
Table 3-4: Vessel type, campaign, and POB	79
Table 3-5 Wellhead removal options	81
Table 3-6 Assessment Criteria.....	82
Table 3-7 Qualitative ranking.....	83
Table 3-8 Options assessment.....	84
Table 4-1: Summary of environmental hydrocarbon thresholds applied to the environment that may be affected and zone of potential impact	90
Table 4-2: Summary of matters of national environmental significance within the Operational Area	92
Table 4-3: Summary of matters of national environmental significance within the environment that may be affected.....	92
Table 4-4: Debris Field Summary (Fugro Survey, 2013 & Tamboritha Survey, 2021)	97
Table 4-5: Commonwealth listed threatened and migratory species within the Operational Area, ZPI and EMBA	100
Table 4-6: Biologically important areas within the Operational Area, ZPI and EMBA	114
Table 4-7: Habitat critical to the survival of marine turtles within the EMBA.....	118
Table 4-8: Protected areas and key ecological features within the Operational Area, ZPI and EMBA.....	121
Table 4-9: Values of the Oceanic Shoals AMP	122
Table 4-10: Key Ecological Features within the EMBA.....	124
Table 4-11: Commonwealth and State fisheries within the Operational Area, ZPI and EMBA.....	127
Table 4-12: Petroleum activities within the Operational Area, ZPI and the EMBA	158

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 8 / 427
				Validity Status	Rev. No. B	

Table 4-13: Murrinhpatha, Mari Amu, Marri Tjevin and English words for marine habitat	173
Table 5-1: Broader Enquiry Efforts.....	199
Table 6-1: Environmental consequence descriptors.....	206
Table 6-2: Likelihood scale	207
Table 6-3: Hierarchy of controls	207
Table 6-4: Risk management actions	208
Table 6-5: Eni acceptability factors	211
Table 7-1 Typical wellhead composition.....	226
Table 7-2: Boundary of assessment for GHG emissions estimation.....	234
Table 7-3: GHG emissions estimation for the project activities	235
Table 7-4: Summary of noise emissions source levels of geophysical activities.....	241
Table 7-5: Summary of noise emissions source levels from decommissioning activities	243
Table 7-6: Continuous noise: criteria for noise exposure for fish.....	245
Table 7-7: Continuous noise: criteria for noise exposure for marine turtles	245
Table 7-8: Continuous noise: criteria for noise exposure for mammal mammals.....	246
Table 7-9: Maximum distance (km) from the continuous sound source to each the noise effect criteria during mooring (source: Welch et al., 2023)	247
Table 7-10: Artificial light impact potential for marine turtles (Pendoley Environmental, 2022)	256
Table 7-11: Summary of available artificial light modelling results for a pipelay vessel	256
Table 7-12: Summary of the type and predicted volume of planned decommissioning discharges for each activity	272
Table 8-1: Summary of the Vessel Collision MDO Spill Modelling Inputs.....	316
Table 8-2: Physical Properties for the MDO	317
Table 8-3: Hydrocarbon exposure thresholds (NOPSEMA, 2019).....	319
Table 8-4: Modelling Output Summary of an Accidental Release of MDO (RPS, 2024).....	320
Table 8-5: Potential Environmental Impact for MDO exposure on Benthic Habitats.....	323
Table 8-6: Potential Environmental Impact for MDO exposure on Marine Fauna.....	325
Table 8-7: Potential Environmental Impact for MDO exposure on Protected and Significant Areas	335
Table 8-8: Potential Environmental Impact for MDO exposure on Socioeconomic and Cultural receptors.....	339
Table 8-9: Potential hazards from oil spill response techniques.....	351
Table 9-1: Environmental Performance Outcomes.....	358
Table 9-2: Control measures and environmental performance standards	360
Table 10-1: Key roles and responsibilities for health, safety, and environment management for Petrel-3 and Petrel-4 petroleum activities	371
Table 10-2: Environmental monitoring parameters	376
Table 10-3: Routine external reporting requirements	379
Table 10-4: Reportable Incident reporting requirements.....	384
Table 10-5: External communication summary.....	388
Table 10-6: Activation of levels in the incident and crisis management organisation.....	393
Table 10-7: Initial Centre for Environment, Fisheries and Aquaculture Science Offshore Chemical Notification Scheme grouping.....	398
Table 10-8: Aquatic species toxicity grouping.....	398

List of Figures

Figure 1-1: Petrel Field Locality	16
Figure 1-2: Phases of Field Development.....	17
Figure 3-1: Petrel-3 suspended well.....	60
Figure 3-2: Petrel-4 suspended well.....	61
Figure 3-3: Petrel-3 Well Barrier Schematic	63
Figure 3-4: Petrel-4 Well Barrier Schematic	64

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 9 / 427
				Validity Status	Rev. No. B	

Figure 3-5: Petrel-3 and Petrel-4 Operational Area	66
Figure 3-6: Full removal option - all items highlighted in red will be removed.....	75
Figure 3-7: Partial removal option - all items highlighted in red will be removed.....	76
Figure 3-8: Leave in-situ option - all items highlighted in red will be removed.....	77
Figure 4-1: The environment that may be affected (EMBA) and the zone of potential impact (ZPI)	91
Figure 4-2: Biologically Important Areas for Olive Ridley Turtle and Flatback Turtles	115
Figure 4-3: Biologically Important Areas for Loggerhead and Green Turtles	116
Figure 4-4: Biologically Important Areas for the Lesser Crested Tern and Lesser Frigatebird	117
Figure 4-5: Australian Marine Parks in Northern Australia	123
Figure 4-6: Key Ecological Features in Northern Australia	125
Figure 4-7: Northern Prawn Fishery Fishing Intensity (2016-2022)	136
Figure 4-8: WA Kimberley Gillnet and Barramundi activity within the EMBA (2018-2023)	137
Figure 4-9: WA Kimberley Prawn Managed Fishery activity within the EMBA (2018-2023)....	138
Figure 4-10: WA Mackerel Managed Fishery activity within the EMBA (2018-2023)	139
Figure 4-11: WA Northern Demersal Scalefish Managed Fishery activity within the EMBA (2018- 2023).....	140
Figure 4-12: WA Sea Cucumber Fishery activity within the EMBA (2018-2023).....	141
Figure 4-13: NT Aquarium Fishery (Display Licences) activity within the EMBA.....	142
Figure 4-14: NT Barramundi Fishery activity within the EMBA	143
Figure 4-15: NT Coastal Line Fishery activity within the EMBA.....	144
Figure 4-16: NT Demersal Fishery activity within the EMBA.....	145
Figure 4-17: NT Development Fishery activity within the EMBA	146
Figure 4-18: NT Jigging Fishery activity within the EMBA	147
Figure 4-19: NT Mud Crab Fishery activity within the EMBA	148
Figure 4-20: NT Net and Line Fishery activity within the EMBA	149
Figure 4-21: NT Pearl Oyster Fishery activity within the EMBA.....	150
Figure 4-22: NT Spanish Mackerel Fishery activity within the EMBA	151
Figure 4-23: NT Special Permit activity within the EMBA.....	152
Figure 4-24: NT Timor Reef Fishery activity within the EMBA.....	153
Figure 4-25: Shipping traffic within the EMBA	155
Figure 4-26: Defence Training Areas within the EMBA	157
Figure 4-27: Offshore industry infrastructure within the EMBA	159
Figure 4-28: Existing and proposed subsea cables within the EMBA	161
Figure 4-29: Shipwrecks within the EMBA.....	163
Figure 4-30: Aboriginal corporations and Registered Native Title PBCs	164
Figure 4-31: Thamarrurr Region and 20 clan regions	166
Figure 4-32: Native Titles claim and determination areas within and adjacent to the North Kimberley Marine Park	169
Figure 4-33: Sea Country habitat map for the Thamarrurr Region based on participatory mapping workshop	174
Figure 4-34: Key cultural sites in the vicinity of Yelcherr Gas Plant/Wadeye	175
Figure 4-35: Marri-Jabin Indigenous Protected Area (<i>Source: NIAA, 2024</i>)	181
Figure 4-36: Balangarra Indigenous Protected Area (<i>Source: DCCEEW, 2024f</i>).....	182
Figure 4-37: Uunguu Indigenous Protected Area (<i>Source: Wunambal Gaambera, 2021</i>)	183
Figure 5-1: Communities within Petrel's General Zone.....	187
Figure 6-1: Overview of the risk management process	204
Figure 6-2: Eni environmental risk matrix.....	209
Figure 7-1: Total GHG emissions (Scopes 1, 2 and 3) by source	236
Figure 7-2: Decision framework for managing calcium carbonate at the end of decommissioning	273
Figure 8-1: Mass balance plot for an instantaneous 50m ³ surface release of MDO subjected to a constant 5 knot (2.6m/s) wind, currents and 27°C water temperature (RPS 2024).	318

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 10 / 427
			Validity Status	Rev. No. B	

Figure 8-2: Mass balance plot for an instantaneous 50m³ surface release of MDO subjected to variable wind speeds (1 – 12m/s or 2 to 24 knots), currents and 27°C water temperature (RPS 2024).....319

Figure 10-1: The HSE IMS Elements to achieve continual improvement.....369

Figure 10-2: Incident and crisis management core levels.....391

Figure 10-3: Incident and crisis management organisation’s principal duties and timescales 392

Figure 10-4: Incident and crisis management organisation chain of command.....392

Figure 10-5: On-scene command.....394

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 11 / 427
				Validity Status	Rev. No.	
					B	

ABBREVIATIONS AND ACRONYMS

AEP	Australian Energy Producers
ACHIS	Aboriginal Cultural Heritage Inquiry System
AHO	Australasian Hydrographic Office
AIMS	Australian Institute of Marine Science
ALARP	As low as reasonably practicable
AMOSC	Australian Marine Oil Spill Centre
AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
ANZECC	Australian and New Zealand Environmental Conservation Council
API	American Petroleum Institute
APPEA	Australian Petroleum Production and Exploration Association
ARC	AMSA Rescue Centre
AQIS	Australian Quarantine Inspection Service
BAC	Balanggarra Aboriginal Corporation
BIA	Biologically Important Areas
BTEX	<i>Benzene, toluene, ethylbenzene, and xylenes</i>
CCS	Carbon Capture and Storage
CM	Control Measure
CSIRO	Commonwealth Scientific and Industrial Research Organisation
Cth	Commonwealth
DAFF	Department of Agriculture, Fisheries and Forestry
DBCA	Department of Biodiversity, Conservation and Attractions
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DEE	Department of Environment and Energy
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety
DEWHA	Department of Environment, Water, Heritage and the Arts
DITT	Department of Industry, Tourism and Trade
DNP	Director of National Parks
DO	Dissolved Oxygen
DoE	Department of the Environment
DoT	Department of Transport (WA)
DSEWPac	Department of Sustainability, Environment, Water, Population and Communities (Cth)
EKCCI	East Kimberley Chamber of Commerce
EMBA	Environment that May Be Affected
EP	Environment Plan
EPBC	Environment Protection and Biodiversity Conservation (Act)

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 12 / 427
			Validity Status	Rev. No. B	

EPO	Environmental Performance Outcome
EPS	Environmental Performance Standards
ESD	Ecologically Sustainable Development
GHG	Global greenhouse gas
GVI	General video inspections
HSE	Health, Safety and Environment
IMCRA	Integrated Marine and Coastal Regionalisation of Australia
IMO	International Maritime Organisation
IMS	Invasive marine species
IMT	Incident Management Team
IOGP	International Association of Oil and Gas Producers
IPA	Indigenous Protected Areas
ISO	International Organisation for Standardisation
ITOPF	International Tank Owners Pollution Federation
IUCN	International Union for the Conservation of Nature
KEF	Key Ecological Features
LDC	Larrakia Development Corporation
LN	Larrakia Nation
LOR	Limit of reporting
LOWC	Loss of Well Control
MARPOL	International Convention for the Prevention of Pollution from Ships
MC	Measurement Criteria
MDO	Marine Diesel Oil
MG	Miriuwung and Gajerrong
MNES	Matters of National Environmental Significance
MO	Marine Orders
MOC	Management of Change
MODU	Mobile offshore Drilling Unit
MSL	Mean Sea Level
NAILSMA	North Australian Land and Sea Management Alliance
NEBA	Net Environmental Benefit Analysis
NIAA	National Indigenous Australians Agency
NLC	Northern Land Council
NMFS	National Marine Fisheries Service
NGOs	Non-government organisations
NOAA	National Oceanic and Atmospheric Administration
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NOPTA	National Offshore Petroleum Titles Authority

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 13 / 427
			Validity Status	Rev. No. B	

NORMs	Naturally occurring radioactive materials
NT	Northern Territory
NTSC	Northern Territory Seafood Council
NWSA	Northern Wildcatch Seafood Australia
OPEP	Oil Pollution Emergency Plan
OPGGS	Offshore Petroleum and Greenhouse Gas Storage (Act)
OPGGS(E) Regulations	Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations
OSMP	Operational and Scientific Monitoring Plan
OSPAR	Oil Spill Prevention, Administration and Response Fund
OWR	Oiled Wildlife Response
PAH	Polyaromatic hydrocarbons
PBCs	Prescribed Bodies Corporate
P&A	Plug and Abandonment
PGB	Permanent Guide Base
PMS	Planned Maintenance System
PMST	Protect Matters Search Tool
PNEC	Predicted no effect concentration
POB	Persons on Board
PTS	Permanent Threshold Shift
RAMSAR	Convention on Wetlands of International Importance especially as Waterfowl Habitat
RKB	Rotary kelly bushing
RNTBC	Registered Native Title Body Corporate
ROV	Remotely Operated Vehicle
SIMAP	Spill Impact Mapping Analysis Program
SOPEP	Ship Oil Pollution Emergency Plan
SPL	Sound Pressure Level
SSS	Side Scan Sonar
STP	Sewage treatment plant
TEC	Threatened ecological communities
TDC	Thamarrurr Development Corporation Ltd
TGB	Temporary Guide Base
TKN	Total Kjeldahl Nitrogen
TLC	Tiwi Land Council
TOC	Total organic carbon
TP	Total phosphorous
TPH	Total Petroleum Hydrocarbons
TSS	Total suspended solids
TSSC	Threatened Species Scientific Committee

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 14 / 427
			Validity Status	Rev. No. B	

UK	United Kingdom
UMEC	Unguu Monitoring and Evaluation Committee
WA	Western Australia
WOMP	Well Operations Management Plans
WIWA	Working with Indigenous Australia

UNITS

dB	Decibel
g/m2	Grams per metres squared
km	Kilometres
m	Metres
m ²	Metres squared
µm	Micrometre
nm	Nautical mile

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 15 / 427
			Validity Status	Rev. No. B	

1 INTRODUCTION

1.1 Activity Overview

Eni Energy Bonaparte Pty Ltd is the titleholder of the Petrel gas field in the Bonaparte Basin in northern Western Australia. The Petrel field is located in permits NT/RL1 and WA-6-R, in water depths of ~95m; and the location is shown in Figure 1-1.

This Environment Plan (EP) applies to two wells (both within NT/RL1) which were suspended in the 1980s:

- Petrel-3; and
- Petrel-4.

This EP has been prepared to meet the requirements of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGGS Act) for decommissioning. The defined petroleum activity for the Petrel-3 and Petrel-4 Monitoring and Decommissioning EP (the petroleum activities) will be limited to:

- Annual general visual inspections (GVI) as part of the in-force Well Operations Management Plan (WOMP) until permanent Petrel-3 and Petrel-4 plug and abandonment (P&A);
- Geophysical and geotechnical survey campaign;
- Pre-decommissioning inspection to prepare the wells for decommissioning and inform final selection of wellhead removal option;
- Decommissioning campaign, to permanently seal and abandon the Petrel-3 and Petrel-4 wells; and
- Post-decommissioning seabed survey.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 16 / 427
			Validity Status	Rev. No.	
				B	

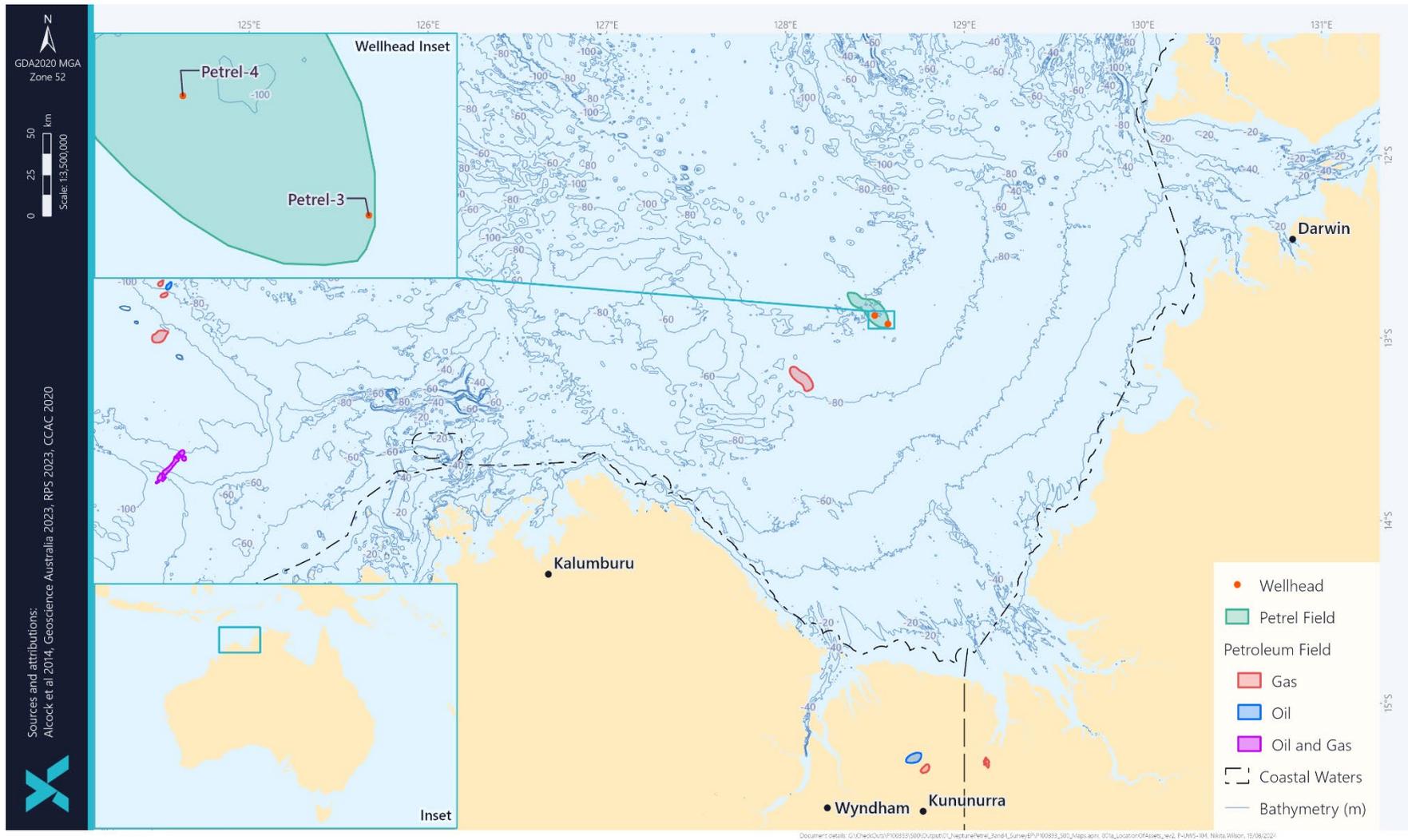


Figure 1-1: Petrel Field Locality

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 17 / 427
			Validity Status	Rev. No. B	

The Petrel field has undergone extensive exploration and appraisal phases – starting in 1969 with the discovery well Petrel-1. Appraisal drilling was ongoing from the 1980's through to the last well drilled in 2010 (Petrel-7). At present the field is considered to be in the pre-development phase (Figure 1-2).



Figure 1-2: Phases of Field Development

1.2 Purpose of this Document

This EP has been prepared to demonstrate that appropriate management controls are in place to reduce to as low as reasonably practicable (ALARP) and an acceptable level, the potential for environmental impacts to occur as a result of the monitoring and decommissioning of the suspended wells.

It has been prepared in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (OPGGS(E) Regulations) for acceptance by, the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). This EP details the environmental impacts and risks associated with the Activity and demonstrates how these are reduced to As Low As Reasonably Practicable (ALARP) and to an acceptable level.

1.3 Scope of the Environment Plan

This EP applies to a defined 'petroleum activity', as defined in the OPGGS(E) Regulations. For this EP, the planned petroleum activity is defined as:

'Any other petroleum related operations or works carried out under an instrument, authority or consent granted or issued under the OPGGS Act.'

Specifically, the activities (petroleum activities) covered under this plan include the:

- Ongoing suspension period of the wells and annual GVI surveillance of the seabed equipment on these wells via a non-intrusive visual inspection using a remotely operated vehicle (ROV);
- Geotechnical and geophysical investigation of the seabed conditions;
- Pre-decommissioning activities such as high-pressure cleaning of the wellhead, removal of the corrosion cap and wells external 3D scan;
- Permanent P&A of the Petrel-3 and Petrel-4 wells; and
- Post-decommissioning inspection to ensure the successful removal of all infrastructures related to Petrel-3 and Petrel-4.

Activities excluded from the scope of this EP are:

- Future development of the Petrel field; and

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 18 / 427
			Validity Status	Rev. No. B	

- Vessels transiting to or from the Operational Area. These vessels are deemed to be operating under the Commonwealth *Navigation Act 2012* and not performing a petroleum activity.

Eni will permanently abandon both wells and make compliant with Section 270(3)(c) and (d) of the OPGGS Act; however, Eni do not intend to surrender the title under this EP. Title relinquishment will be sought under a separate EP.

1.4 Titleholder Details

Titleholder details for the permit areas are provided in Table 1-1.

Table 1-1: Titleholder Details

Permit Area	Operator	Titleholder Details
NT/RL1 and WA-6-R (Petrel)	Eni Energy Bonaparte Pty Ltd, an affiliate of Eni Australia Ltd, owned and controlled by Eni SpA	Eni Energy Bonaparte Pty Ltd (57%), Santos Limited (24%), Bonaparte Gas and Oil Pty Ltd (19%)

The operator details are:

Eni Energy Bonaparte Pty Ltd
 Level 5, 226 Adelaide Terrace
 Perth WA 6000
 Telephone: (08) 9320 1111

1.4.1 Details of the Liaison Person

The nominated liaison person for this EP is:

Joe Covic
 Health, Safety, Environment and Quality Manager
 Eni Australia Ltd
 Tel: (08) 9320 1111
 Email: info@eniaustralia.com.au

Eni Energy Bonaparte's Australian Business Number is 13 138 853 728 and Australian Company Number is 092 812 023. Eni Energy Bonaparte Pty Ltd is an affiliate of Eni Australia Ltd, owned and controlled by Eni SpA.

1.4.2 Notifying of Change

In the event of a change of titleholder, nominated liaison person or contact details, Eni will provide written notification to NOPSEMA providing details of the change.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 19 / 427
				Validity Status	Rev. No. B	

2 ENVIRONMENTAL LEGISLATION

The OPGGS(E) Regulations require Eni to describe in this EP the relevant requirements that apply to the petroleum activities, along with how they will be met. Relevant legislation, standards and guidelines are summarised in the next subsections and include:

- Commonwealth legislation (Section 2.1);
- Commonwealth guidelines and policies (Section 2.2); and
- International Agreements (Section 2.3).

While this EP applies to petroleum activities in Commonwealth waters, Section 2.4 summarises key State and Northern Territory requirements relevant to aspects of the petroleum activities outside of NOPSEMA's jurisdiction.

2.1 Commonwealth Legislation

The petroleum activities will be conducted in Commonwealth waters and is therefore subject to Commonwealth legislation, specifically:

- *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act, Section 2.1.1);
- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act, Section 2.1.2); and
- *Environmental Protection (Sea Dumping) Act 1981* (Section 2.1.3).

Other Commonwealth legislation is also applicable to environmental management of the petroleum activities; these have been considered in Section 2.1.4.

2.1.1 OPGGS Act 2006 and OPGGS (Environment) Regulations 2023

The *Offshore Petroleum Greenhouse Gas Storage Act 2006* (OPGGS Act) is the principal legislation managing petroleum activities in Australian Commonwealth waters. The OPGGS Act and supporting regulations address all licencing, health, safety environmental and royalty issues for offshore petroleum and gas exploration and production operations in Commonwealth waters. Regulations created under the Act include:

- Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009;
- Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011; and
- Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (OPGGS (E) Regulations).

The OPGGS (E) Regulations prescribe the requirements for management of environmental impacts associated with petroleum activities and require proponents to submit an EP to the Regulatory Authority for acceptance before activities commence. The object of the OPGGS (E) Regulations is to ensure petroleum activities in Commonwealth waters are performed in a manner:

- consistent with the principles of environmentally sustainable development set out in section 3A of the EPBC Act;

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 20 / 427
			Validity Status	Rev. No. B	

- by which the environmental impacts and risks of the activity will be reduced to ALARP; and
- by which the environmental impacts and risks of the activity will be at an acceptable level.

The OPGGS (E) Regulations also include requirements for considering matters of national environmental significance (MNES), as defined in Part 3 of the EPBC Act.

Section 572 of the OPGGS Act requires complete removal of all infrastructure above the mudline and plug and abandonment (P&A) of wells as the base case. This requirement has been discussed further in Section 3.3.9.

Table 2-1 includes the pertinent sections of the OPGGS (E) Regulations and details the sections of this EP which ensure compliance with the requirements.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 21 / 427
			Validity Status	Rev. No.	
				B	

Table 2-1: Requirements of the OPGGS (E) Regulations

Section	Requirement	Relevant section in the EP
Consultation with relevant authorities, persons and organisations, etc		
25(1)	<p>In the course of preparing an environment plan, or a revision of an environment plan, a titleholder must consult each of the following (a <i>relevant person</i>):</p> <ul style="list-style-type: none"> • each Department or agency of the Commonwealth to which the activities to be carried out under the environment plan, or the revision of the environment plan, may be relevant • each Department or agency of a State or the NT to which the activities to be carried out under the environment plan, or the revision of the environment plan, may be relevant • the Department of the responsible State Minister, or the responsible NT Minister • a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the environment plan, or the revision of the environment plan • any other person or organisation that the titleholder considers relevant. 	Section 5 Relevant Person Consultation
25(2)	For the purpose of the consultation, the titleholder must give each relevant person sufficient information to allow the relevant person to make an informed assessment of the possible consequences of the activity on the functions, interests, or activities of the relevant person.	Section 5 Relevant Person Consultation
25(3)	The titleholder must allow a relevant person a reasonable period for the consultation.	Section 5 Relevant Person Consultation
25(4)	<p>The titleholder must tell each relevant person the titleholder consults that:</p> <p>(a) the relevant person may request that particular information the relevant person provides in the consultation not be published; and</p> <p>(b) information subject to such a request is not to be published under this Part.</p>	Section 5 Relevant Person Consultation
Environmental assessment		
21(1)	<p><i>Description of the activity</i></p> <p>The environment plan must contain a comprehensive description of the activity, including:</p> <ul style="list-style-type: none"> • the location or locations of the activity • general details of the construction and layout of any facility or other structure • an outline of the operational details of the activity (for example, seismic surveys, exploration drilling or production) and proposed timetables • any additional information relevant to consideration of environmental impacts and risks of the activity. 	Section 3.1.2 Operational Area Section 3 Description of the Activity
21(2)	<i>Description of the environment</i>	

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 22 / 427
			Validity Status	Rev. No.	
				B	

Section	Requirement	Relevant section in the EP
	The environment plan must: <ul style="list-style-type: none"> describe the existing environment that may be affected by the activity include details of the particular relevant values and sensitivities (if any) of that environment. 	Section 4 Description of the Environment
21(4)	<i>Requirements</i> The environment plan must: <ul style="list-style-type: none"> describe the requirements, including legislative requirements, that apply to the activity and are relevant to the environmental management of the activity demonstrate how those requirements will be met. 	Section 2 Environmental Legislation
21(5)	<i>Evaluation of environmental impacts and risks</i> The environment plan must include: <ul style="list-style-type: none"> details of the environmental impacts and risks for the activity an evaluation of all the impacts and risks, appropriate to the nature and scale of each impact or risk details of the control measures that will be used to reduce the impacts and risks of the activity to as low as reasonably practicable and an acceptable level. 	Section 6 Environmental Risk Assessment Methodology
21(6)	To avoid doubt, the evaluation mentioned in paragraph (5)(b) must evaluate all the significant impacts and risks arising directly or indirectly from: <ul style="list-style-type: none"> all operations of the activity potential emergency conditions, whether resulting from accident or any other reason. 	Section 6 Environmental Risk Assessment Methodology
21(7)	<i>Environmental performance outcomes and standards</i> The environment plan must: <ul style="list-style-type: none"> set environmental performance standards for the control measures identified under paragraph (5) set out the environmental performance outcomes against which the performance of the titleholder in protecting the environment is to be measured include measurement criteria that the titleholder will use to determine whether each environmental performance outcome and environmental performance standard is being met. 	Section 9 Environment Outcomes, Standards and Measurement Criteria
Implementation strategy for the environment plan		
22(1)	The environment plan must contain an implementation strategy for the activity in accordance with this section.	Section 10 Implementation Strategy

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 23 / 427
			Validity Status	Rev. No.	
				B	

Section	Requirement	Relevant section in the EP
22(2)	<p>The implementation strategy must contain a description of the environmental management system for the activity, including specific measures to be used to ensure that, for the duration of the activity:</p> <ul style="list-style-type: none"> the environmental impacts and risks of the activity continue to be identified and reduced to a level that is as low as reasonably practicable control measures detailed in the environment plan are effective in reducing the environmental impacts and risks of the activity to as low as reasonably practicable and an acceptable level environmental performance outcomes and standards set out in the environment plan are being met. 	Section 10.6 Auditing and Inspection
22(3)	The implementation strategy must establish a clear chain of command, setting out the roles and responsibilities of personnel in relation to the implementation, management, and review of the environment plan, including during emergencies or potential emergencies.	Section 10.2 Roles and Responsibilities
22(4)	The implementation strategy must include measures to ensure that each employee or contractor working on, or in connection with, the activity is aware of his or her responsibilities in relation to the environment plan, including during emergencies or potential emergencies, and has the appropriate competencies and training.	Section 10.2 Roles and Responsibilities
22(5)	The implementation strategy must provide for sufficient monitoring, recording, audit, management of non-conformance and review of the titleholder's environmental performance and the implementation strategy to ensure that the environmental performance outcomes and standards in the environment plan are being met.	Section 10.6 Auditing and Inspection Section 10.7 Non-Conformance, Corrective and Preventative Actions Section 10.8 External Reporting Section 10.9 Internal Reporting
22(6)	The implementation strategy must provide for sufficient monitoring of, and maintaining a quantitative record of, emissions and discharges (whether occurring during normal operations or otherwise), such that the record can be used to assess whether the environmental performance outcomes and standards in the environment plan are being met.	Section 10.5 Monitoring OPEP (000694_DV_ES.HSE.0285.000)
22(7)	<p>The implementation strategy must:</p> <ul style="list-style-type: none"> state when the titleholder will report to the Regulator in relation to the titleholder's environmental performance for the activity provide that the interval between reports will not be more than one year. 	Section 10.8 External Reporting
22(8)	The implementation strategy must contain an oil pollution emergency plan and provide for the updating of the plan.	OPEP (000694_DV_ES.HSE.0285.000)

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 24 / 427
			Validity Status	Rev. No.	
				B	

Section	Requirement	Relevant section in the EP
22(9)	<p>The oil pollution emergency plan must include adequate arrangements for responding to and monitoring oil pollution, including the following:</p> <ul style="list-style-type: none"> the control measures necessary for timely response to an emergency that results or may result in oil pollution the arrangements and capability that will be in place, for the duration of the activity, to ensure timely implementation of the control measures, including arrangements for ongoing maintenance of response capability the arrangements and capability that will be in place for monitoring the effectiveness of the control measures and ensuring that the environmental performance standards for the control measures are met the arrangements and capability in place for monitoring oil pollution to inform response activities. 	OPEP (000694_DV_ES.HSE.0285.000)
22(10)	<p>The implementation strategy must provide for monitoring of impacts to the environment from oil pollution and response activities that:</p> <ul style="list-style-type: none"> is appropriate to the nature and scale of the risk of environmental impacts of the activity is sufficient to inform any remediation activities. 	OPEP (000694_DV_ES.HSE.0285.000)
22(11)	<p>The implementation strategy must include information demonstrating that the response arrangements in the oil pollution emergency plan are consistent with the national system for oil pollution preparedness and response.</p>	OPEP (000694_DV_ES.HSE.0285.000)
22(12)	<p>The implementation strategy must include arrangements for testing the response arrangements in the oil pollution emergency plan. The testing arrangements must be appropriate to the response arrangements and to the nature and scale of the risk of oil pollution for the activity</p>	OPEP (000694_DV_ES.HSE.0285.000)
22(13)	<p>The arrangements for testing the response arrangements must include:</p> <ul style="list-style-type: none"> statement of the objectives of testing a proposed schedule of tests mechanisms to examine the effectiveness of response arrangements against the objectives of testing mechanisms to address recommendations arising from tests. 	OPEP (000694_DV_ES.HSE.0285.000)

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 25 / 427
			Validity Status	Rev. No.	
				B	

Section	Requirement	Relevant section in the EP
22(14)	The proposed schedule of tests must provide for: <ul style="list-style-type: none"> testing the response arrangements when they are introduced testing the response arrangements when they are significantly amended testing the response arrangements not later than 12 months after the most recent test if a new location for the activity is added to the environment plan after the response arrangements have been tested, and before the next test is conducted – testing the response arrangements in relation to the new location as soon as practicable after it is added to the plan if a facility becomes operational after the response arrangements have been tested and before the next test is conducted – testing the response arrangements in relation to the facility when it becomes operational. 	OPEP (000694_DV_ES.HSE.0285.000)
22(15)	The implementation strategy must provide for appropriate consultation with: <ul style="list-style-type: none"> relevant authorities of the Commonwealth, a State or a Territory other relevant interested persons or organisations. 	Section 5.6 Ongoing Consultation
22(16)	The implementation strategy must comply with the Act, this instrument, any other regulations made under the Act, and any other environmental legislation applying to the activity.	Section 2 Environmental Legislation
Details of titleholder and liaison person		
23(1)	The environment plan must include the following details for the titleholder: <ul style="list-style-type: none"> name business address telephone number (if any) fax number (if any) email address (if any) if the titleholder is a body corporate that has an Australian Company Number (within the meaning of the Corporations Act 2001) – Australian Company Number. 	Section 1.4 Titleholder Details
23(2)	The environment plan must also include the following details for the titleholder’s nominated liaison person: <ul style="list-style-type: none"> name business address telephone number (if any) fax number (if any) email address (if any). 	Section 1.4.1 Details of Liaison Person

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 26 / 427
				Validity Status	Rev. No.	
					B	

Section	Requirement	Relevant section in the EP
23(3)	The environment plan must include arrangements for notifying the Regulator of a change in the titleholder, a change in the titleholder's nominated liaison person or a change in the contact details for either the titleholder or the liaison person.	Section 10 Implementation Strategy
Other information in the environment plan		
24	<p>The environment plan must contain:</p> <ul style="list-style-type: none"> • a statement of the titleholder's corporate environmental policy • a report on all consultations under section 25 of any relevant person by the titleholder, that contain: <ul style="list-style-type: none"> – a summary of each response made by a relevant person – an assessment of the merits of any objection or claim about the adverse impact of each activity to which the environment plan relates – a statement of the titleholder's response, or proposed response, if any, to each objection or claim – a copy of the full text of any response by a relevant person. • details of all reportable incidents in relation to the proposed activity. 	<p>Eni Health, Safety and Environment (HSE) Statement (Appendix A: HSE Statement)</p> <p>Section 5 Relevant Person Consultation</p>
Revision of an environment plan		
38	<p>A titleholder may submit a revised environment plan under section 26 to include a new activity under the title (rather than submit a separate plan for the new activity).</p> <p><i>Note 1: This is subject to NOPSEMA's approval (see subsection 26(7)) and, if the new activity is, or is part of, an offshore project, the requirements of subsections 26(3) to (5).</i></p> <p><i>Note 2: It is an offence to undertake an activity under a title without an environment plan being in force for the activity (see section 17).</i></p>	Section 10.12 Management of Change and Reviews of this EP
39(1)	A titleholder must submit to the Regulator a proposed revision of the environment plan for the activity before the commencement of any significant modification or new stage of the activity that is not provided for in the environment plan that is currently in force.	Section 10.12 Management of Change and Reviews of this EP

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 27 / 427
			Validity Status	Rev. No.	
				B	

Section	Requirement	Relevant section in the EP
39(2)	<p>A titleholder must submit a revised environment plan under section 26 for an activity under the title before, or as soon as practicable after, the occurrence of:</p> <p>a) any significant new environmental impact or risk, or significant increase in an existing environmental impact or risk, of the activity that is not provided for in the environment plan in force for the activity; or</p> <p>(b) a series of new environmental impacts or risks, or a series of increases in existing environmental impacts or risks, which, taken together, amount to the occurrence of:</p> <p>(i) a significant new environmental impact or risk of the activity; or</p> <p>(ii) a significant increase in an existing environmental impact or risk of the activity;</p> <p>that is not provided for in the environment plan in force for the activity.</p>	Section 10.12 Management of Change and Reviews of this EP
39(3)	<p>If:</p> <p>(a) there is a change in the titleholder of a title; and</p> <p>(b) the change will result in a change in the manner in which the environmental impacts and risks of an activity under the title are managed;</p> <p>the new titleholder must submit a revised environment plan for the activity under section 26 as soon as practicable after becoming the new titleholder.</p>	Section 10.12 Management of Change and Reviews of this EP
Revision of an environment plan		
40	A titleholder must submit to the Regulator a proposed revision of the environment plan for an activity if the Regulator requests the titleholder to do so.	Section 10.12 Management of Change and Reviews of this EP

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 28 / 427
			Validity Status	Rev. No. B	

2.1.2 **Environment Protection and Biodiversity Conservation Act 1999**

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the primary Commonwealth environmental assessment legislation aimed at protecting and managing flora, fauna, ecological communities, environmentally sensitive and heritage places defined as matters of national environmental significance (MNES).

NOPSEMA are the sole designated assessor of petroleum and greenhouse gas (GHG) activities in Commonwealth waters in accordance with the Minister for the Environment's endorsement of NOPSEMA's environmental authorisation process under Part 10, section 146 of the EPBC Act. The objectives of the process include ensuring activities undertaken in the offshore area are conducted in a manner consistent with the principles of ecologically sustainable development (Section 2.1.2.1) and will not result in unacceptable impacts to MNES protected under Part 3 of the EPBC Act.

This has included making specific reference in Section 4 to the values of matters protected under Part 3 of the EPBC Act using references and relevant guidance documents to be considered, such as EPBC Act significance guidance documents, relevant policy statements, plans of management, recovery plans and on-line databases.

Where there is the potential for MNES to be impacted by petroleum activities, an assessment of impacts must be presented in the EP. MNES identified as relevant to the petroleum activities are:

- listed threatened species and ecological communities;
- listed migratory species (protected under international agreements);
- Commonwealth marine environment;
- world heritage properties;
- national heritage places; and
- Ramsar wetlands.

Environmental values and sensitivities, including MNES, are described in Section 4. These descriptions inform the assessment of environmental impacts and risks in Sections 7 and 8.

With regards to section 21(3)(f) of the OPGGS(E) Regulations, more detail has been provided for:

- Key Ecological Features (KEFs) as they are considered a conservation value under a Commonwealth Marine Area; and
- Australian Marine Parks (AMPs) as they are established under the EPBC Act.

More detail has been provided where threatened or migratory species have a spatially defined Biologically Important Area (BIA), as they have been designed to support decision making under the EPBC Act. They are spatially defined areas where aggregations of individuals of a species are known to display biologically important behaviour such as breeding, foraging, resting or migration. BIAs have been referenced in Section 4.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 29 / 427
			Validity Status	Rev. No. B	

Important habitat for migratory species is defined within the Matters of National Environmental Significance Significant Impact Guidelines 1.1 (DoE, 2013) as:

- habitat utilised by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species; and/or
- habitat that is of critical importance to the species at particular life-cycle stages; and/or
- habitat utilised by a migratory species which is at the limit of the species range; and/or
- habitat within an area where the species is declining.

2.1.2.1 Principles of Ecologically Sustainable Development

NOPSEMA also considers whether the petroleum activities are consistent with the principles of ecologically sustainable development (ESD), as defined in the EPBC Act. The principles of ESD include:

- Decision-making processes should effectively integrate both long-term and short term economic, environmental, social and equitable considerations; the 'integration principle';
- If there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation; the 'precautionary principle';
- The present generation should ensure the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations; the 'intergenerational principle';
- The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making; the 'biodiversity principle'; and
- Improved valuation, pricing and incentive mechanisms should be promoted; the 'valuation principle'.

Eni has considered these principles when assessing environmental impacts and risks in Sections 7 and 8.

2.1.2.2 Management Plans

Under the EPBC Act, listed threatened species are managed through management plans, recovery plans and conservation advice. The purpose of these is summarised in Table 2-2.

Under s139(1)(b) of the EPBC Act, the Environment Minister must not act inconsistently with a recovery plan for a listed 'threatened' species or ecological community or a threat abatement plan for a species or community protected under the Act. Similarly, under s268 of the EPBC Act:

'A Commonwealth agency must not take any action that contravenes a recovery plan or a threat abatement plan.'

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 30 / 427
				Validity Status	Rev. No. B	

In relation to offshore petroleum activities in Commonwealth waters, these requirements are now administered by NOPSEMA in accordance with commitments set out in the plans. Recovery plans or threat abatement plans relevant to the scope of this EP have been identified as described in Table 2-3 and assessed in Sections 7 and 8.

Table 2-2: Summary of the purpose of management plans, recovery plans and conservation advice

Plan/Advice	Summary
Recovery plans	<p>Recovery plans are intended to ensure the recovery of threatened species by setting recovery objectives. These objectives are informed by:</p> <ul style="list-style-type: none"> • descriptions of the state of the threatened species in Australia and globally • identification of threats to the species • identification of actions by which these threats may be mitigated, and the recovery objectives achieved.
Conservation advice	<p>Conservation advice provide advice about relevant impacts and threats and set requirements for management and protection. This advice is developed in consultation with the Threatened Species Scientific Committee. Conservation advice:</p> <ul style="list-style-type: none"> • describes the threatened species, including its distribution, habitat and conservation status • describes threats to the recovery of the species • outlines research priorities and conservation actions to prevent further decline of the threatened species.
Wildlife conservation plans	<p>Wildlife conservation plans may be made under the EPBC Act for the protection, conservation and management of species protected under the Act.</p>
Threat abatement plans	<p>Threat abatement plans may be made under the EPBC Act for threatening processes on native species and ecological communities. The plans describe objectives for the mitigation of threatening processes and the actions intended to achieve the objectives.</p>

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 31 / 427
			Validity Status	Rev. No.	
				B	

Table 2-3: Summary of additional environment protection and biodiversity conservation management and recovery plans and conservation advice relevant to the petroleum activities

Species	Plan or Advice	Protection under EPBC Act	Relevant key threats identified	Relevant objectives	Relevant conservation actions
Vertebrates					
All vertebrate fauna	Threat abatement plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (Commonwealth of Australia, 2018)	N/A	Marine debris	Objectives: Contribute to long-term prevention of the incidence of marine debris. Understand the scale of impacts from marine plastic and microplastic on key species, ecological communities and locations. Remove existing marine debris.	No explicit management actions for non-fisheries-related industries; note that management actions in the plan relate largely to management of fishing waste (e.g., 'ghost' gear), and State and Commonwealth management through regulation.
Marine Mammals					
Blue whale (includes pygmy blue whale)	Conservation Management Plan for the Blue Whale 2015-2025 (DoE, 2015)	Endangered	Noise interference	The long-term recovery objective is to minimise anthropogenic threats to allow the conservation status of the blue whale to improve so that it can be removed from the threatened species list under the EPBC Act.	A.2: Assessing and addressing anthropogenic noise: Assess the effect of anthropogenic noise on blue whale behaviour. Action Area A.3: Anthropogenic noise in biologically important areas will be managed such that any blue whale continues to utilise the area without injury.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 32 / 427
				Validity Status	Rev. No.	
					B	

Species	Plan or Advice	Protection under EPBC Act	Relevant key threats identified	Relevant objectives	Relevant conservation actions
			Vessel disturbance		A.4: Minimising vessel collisions: Ensure the risk of vessel strikes on blue whales is considered when assessing actions that increase vessel traffic in areas where blue whales occur and, if required, appropriate mitigation measures are implemented.
			Climate variability and change		Understanding impacts of climate variability and change: Continue to meet Australia's international commitments to reduce GHG emissions and regulate the krill fishery in Antarctica.
			Habitat modification (infrastructure/ coastal developments, marine debris, acute and chronic chemical discharge)		No explicit relevant management actions. Habitat modification identified as a threat.
Sei whale	Conservation Advice for <i>Balaenoptera borealis</i> (Sei Whale) (TSSC, 2015)	Vulnerable	Noise interference	No explicit relevant objectives.	Once the spatial and temporal distribution (including biologically important areas) of sei whales is further defined an assessment of the impacts of increasing anthropogenic noise (including from seismic surveys, port expansion, and coastal development) should be undertaken on this species.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 33 / 427
				Validity Status	Rev. No.	
					B	

Species	Plan or Advice	Protection under EPBC Act	Relevant key threats identified	Relevant objectives	Relevant conservation actions
			Vessel disturbance		<p>Minimising vessel collisions:</p> <p>Develop a national vessel strike strategy that investigates the risk of vessel strikes on sei whales and also identifies potential mitigation measures.</p> <p>Ensure all vessel strike incidents are reported in the National Vessel Strike Database.</p>
			Climate and oceanographic variability and change		<p>Understanding impacts of climate variability and change:</p> <p>Continue to meet Australia's international commitments to reduce GHG emissions and regulate the krill fishery in Antarctica.</p>
			Pollution (persistent toxic pollutants)		<p>No explicit relevant management actions. Pollution identified as a threat.</p>
Fin whale	Conservation Advice for <i>Balaenoptera physalus</i> (Fin Whale) (TSSC, 2015a)	Vulnerable	Noise interference	No explicit relevant objectives.	<p>Once the spatial and temporal distribution (including BIAs) of fin whales is further defined, assess the impacts of increasing anthropogenic noise (including seismic surveys, port expansion and coastal development).</p>
			Vessel disturbance		<p>Minimising vessel collisions:</p> <p>Develop a national vessel strike strategy that investigates the risk of vessel strikes on fin whales and also identifies potential mitigation measures.</p> <p>Ensure all vessel strike incidents are reported in the National Vessel Strike Database.</p>

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 34 / 427
				Validity Status	Rev. No.	
					B	

Species	Plan or Advice	Protection under EPBC Act	Relevant key threats identified	Relevant objectives	Relevant conservation actions
			Climate and oceanographic variability and change		Understanding impacts of climate variability and change: Continue to meet Australia's international commitments to reduce GHG emissions and regulate the krill fishery in Antarctica.
			Pollution (persistent toxic pollutants)		No explicit relevant management actions. Pollution identified as a threat.
Marine Reptiles					
Loggerhead, hawksbill, green, Olive Ridley, flatback and leatherback turtles	Recovery plan for Marine Turtles in Australia [Department of the Environment and Energy (DEE), 2017]	Endangered (loggerhead, leatherback, Olive Ridley turtles) Vulnerable (green, hawksbill, flatback turtles)	Marine debris	Long-term recovery objective: Minimise anthropogenic threats to allow for the conservation status of marine turtles to improve so they can be removed from the EPBC Act threatened species list. Interim objective 3: Anthropogenic threats are demonstrably minimised.	Action Area A3: Reduce the impacts from marine debris: Understand the threat posed by marine debris. Determine the extent to which marine debris is impacting turtles.
			Chemical and terrestrial discharge		Action Area A4: Minimise chemical and terrestrial discharge: Ensure spill risk strategies and response programs adequately include management for marine turtles and their habitats, particularly in reference to 'slow to recover habitats', such as nesting habitat, seagrass meadows or coral reefs.
			Light pollution		Action Area A8: Minimise light pollution: Artificial light within or adjacent to habitat critical to the survival of marine turtles will be managed such that marine turtles are not displaced from these habitats.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 35 / 427
				Validity Status	Rev. No.	
					B	

Species	Plan or Advice	Protection under EPBC Act	Relevant key threats identified	Relevant objectives	Relevant conservation actions
			Vessel disturbance		Vessel interactions identified as a threat; no specific management actions in relation to vessels prescribed in the plan.
			Noise interference		No explicit relevant management actions; noise interference identified as a threat.
Leatherback turtle	Approved Conservation Advice for <i>Dermochelys coriacea</i> (Leatherback Turtle) (DEWHA, 2008a)	Endangered	Vessel disturbance	No explicit relevant objectives.	No explicit relevant management actions; only vessel strikes identified as a threat.
			Marine debris		No explicit relevant management actions; marine debris identified as a threat.
			Climate change		No explicit relevant management actions; only climate change identified as a threat.
Leaf-scaled sea snake	Approved Conservation Advice on <i>Aipysurus foliosquama</i> (Leaf-Scaled Sea Snake) (DSEWPaC, 2011a)	Critically Endangered	Habitat degradation or modification	No explicit relevant objectives.	Ensure there is no disturbance in areas where the leaf-scaled sea snake occurs, excluding necessary actions to manage the conservation of the species.
Fish, sharks, and rays					
All sawfish and river sharks	Sawfish and River Shark Multispecies Recovery Plan (Commonwealth of Australia, 2015)	NA	Habitat degradation or modification	The primary objective of this recovery plan is to assist the recovery of sawfish and river sharks in Australian waters with a view to: <ul style="list-style-type: none"> improving the population status, leading to the 	Objective 5: Reduce and, where possible, eliminate adverse impacts of habitat degradation and modification on sawfish and river shark species. Identify risks to important sawfish and river shark habitat and measures needed to reduce those risks.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 36 / 427
				Validity Status	Rev. No.	
					B	

Species	Plan or Advice	Protection under EPBC Act	Relevant key threats identified	Relevant objectives	Relevant conservation actions
			Marine debris	removal of the sawfish and river shark species from the threatened species list of the EPBC Act	Objective 6: Reduce and, where possible, eliminate any adverse impacts of marine debris on sawfish and river shark species.
Dwarf sawfish	Approved Conservation Advice for <i>Pristis clavata</i> (Dwarf Sawfish) (DEWHA, 2009)	Vulnerable	Habitat degradation or modification	<ul style="list-style-type: none"> ensuring anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future. 	No explicit relevant management actions. Habitat loss, disturbance and modification identified as threats.
Green sawfish	Approved Conservation Advice for Green Sawfish (DEWHA, 2008b)	Vulnerable	Habitat degradation or modification	The specific objectives of the recovery plan (relevant to industry) are:	No explicit relevant management actions. Habitat loss, disturbance and modification identified as threats.
Freshwater sawfish	Approved Conservation Advice for <i>Pristis pristis</i> (largetooth sawfish) (DoE, 2014c)	Vulnerable	Habitat degradation or modification	Objective 5: Reduce and, where possible, eliminate adverse impacts of habitat degradation and modification on sawfish and river shark species.	No explicit relevant management actions. Habitat loss, disturbance and modification identified as threats.
Northern river shark	Approved Conservation Advice for <i>Glyphis garricki</i> (Northern River Shark) (DoE, 2014)	Endangered	Habitat degradation or modification	Objective 6: Reduce and, where possible, eliminate any adverse impacts of marine debris on sawfish and river shark species noting the linkages with the Threat Abatement Plan for the Impact of Marine Debris on Vertebrate Marine Life.	No explicit relevant management actions. Habitat loss, disturbance and modification identified as threats.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 37 / 427
				Validity Status	Rev. No.	
					B	

Species		Plan or Advice	Protection under EPBC Act	Relevant key threats identified	Relevant objectives	Relevant conservation actions
Great white shark		Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) (DSEWPaC, 2013)	Vulnerable	Habitat modification Climate change	The primary objective of this recovery plan is to assist the recovery of the great white shark in Australian waters with a view to: improving the population status leading to the removal of the great white shark species from the threatened species list of the EPBC Act ensuring anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future.	Ensure anthropogenic activities do not hinder recovery of the species in the near future or impact on the conservation status of the species in the future. No explicit relevant management actions. Ecosystem effects as a result of habitat modification and climate change identified as threats.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 38 / 427
				Validity Status	Rev. No.	
					B	

Species	Plan or Advice	Protection under EPBC Act	Relevant key threats identified	Relevant objectives	Relevant conservation actions
Grey nurse shark	Recovery Plan for the Grey Nurse Shark (<i>Carcharias taurus</i>) (DoE, 2014a)	Vulnerable	Pollution and disease	The primary objective of this recovery plan is to assist the recovery of the grey nurse shark in Australian waters with a view to: improving the population status leading to the removal of the grey nurse shark species from the threatened species list of the EPBC Act ensuring anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future.	No explicit relevant management actions. Pollution and disease and ecosystem effects as a result of habitat modification and climate change identified as threats.
Speartooth shark	Approved Conservation Advice for <i>Glyphis glyphis</i> (Speartooth Shark) (DoE, 2014b)	Critically Endangered	Habitat degradation or modification	No explicit relevant objectives.	Implement measures to reduce adverse impacts of habitat degradation or modification.
Whale shark	Approved Conservation Advice for <i>Rhincodon typus</i> (Whale Shark) (TSSC, 2015b)	Vulnerable	Vessel disturbance	To maintain existing levels of protection for the whale shark in Australia while working to increase the level of protection afforded to the whale shark within the Indian Ocean and Southeast Asia region to enable population growth so that the species can be removed	Minimise offshore developments and transit time of large vessels in areas close to marine features likely to correlate with whale shark aggregations along the northward migration route that follows the northern Western Australian coastline along the 200m isobath (as set out in the Conservation Values Atlas, DoE, 2014).
			Habitat degradation or modification		Implement measures to reduce adverse impacts of habitat degradation or modification.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 39 / 427
			Validity Status	Rev. No.	
				B	

Species	Plan or Advice	Protection under EPBC Act	Relevant key threats identified	Relevant objectives	Relevant conservation actions
			Marine debris	from the threatened species list of the EPBC Act.	No explicit relevant management actions. Marine debris identified as a threat.
			Climate change		No explicit relevant management actions. Climate change identified as a threat.
Seabirds and shorebirds					
Seabirds	Wildlife Conservation Plan for Seabirds (Commonwealth of Australia, 2020)	NA	Habitat loss or modification	Seabirds and their habitats are protected and managed in Australia.	No explicit relevant management actions. Habitat loss or modification identified as a threat.
			Anthropogenic disturbance		2d. Ensure all areas of important habitat for seabirds are considered in the development assessment process. 2e. Manage the effects of anthropogenic disturbance to seabird breeding and roosting areas.
			Climate change		No explicit relevant management actions. Climate change identified as a threat.
			Invasive species		2f. Ensure seabirds are protected from the adverse effects of invasive species.
			Pollution (marine debris, light, water)		2h. Enhance contingency plans to prevent and respond to environmental emergencies that have an impact on seabirds and their habitats.
			Resource extraction		No explicit relevant management actions. Resource extraction identified as a threat. Noted that seabirds are known to aggregate around oil and gas platforms in above-average numbers due to night lighting and other visual cues.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 40 / 427
				Validity Status	Rev. No.	
					B	

Species	Plan or Advice	Protection under EPBC Act	Relevant key threats identified	Relevant objectives	Relevant conservation actions
Migratory shorebirds	Wildlife Conservation Plan for Migratory Shorebirds (Commonwealth of Australia, 2015a)	NA	Habitat loss or modification	Anthropogenic threats to migratory shorebirds in Australia are minimised or, where possible, eliminated.	No explicit relevant management actions. Habitat loss or modification identified as a threat.
			Anthropogenic disturbance		3c. Investigate the significance of cumulative impacts on Migratory shorebird habitat and populations in Australia. 3f. Ensure all areas important to Migratory shorebirds in Australia continue to be considered in development assessment processes, specifically for coastal developments.
			Climate change		3b: Investigate the impacts of climate change on Migratory shorebird habitat and populations in Australia.
Curlew sandpiper	Approved Conservation Advice for <i>Calidris ferruginea</i> (Curlew Sandpiper) (DCCEEW, 2023b)	Critically Endangered	Chronic and acute pollution	Minimise further loss of habitat critical to the survival of curlew sandpiper throughout Australia (including habitat predicted to become habitat critical in the future because of climate change).	No explicit relevant management actions for pollution or climate change.
			Climate change		Ensure that functional connectivity of sites is maintained throughout the species' migration network, including inland wetlands and coastal sites.
Eastern curlew	Conservation Advice for <i>Numenius madagascariensis</i> (far eastern curlew) (DCCEEW, 2023c)	Critically Endangered	Chronic and acute pollution	Minimise further loss of habitat critical to the survival of far eastern curlew throughout Australia (including habitat predicted to become habitat critical in the future because of climate change).	No explicit relevant management actions for pollution or climate change. Ensure that functional connectivity of sites is maintained throughout the species' migration network.
			Climate change		

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 41 / 427
				Validity Status	Rev. No.	
					B	

Species	Plan or Advice	Protection under EPBC Act	Relevant key threats identified	Relevant objectives	Relevant conservation actions
Red knot	Approved Conservation Advice for <i>Calidris canutus</i> (Red Knot) (DCCEEW, 2024a)	Vulnerable	Chronic and acute pollution Climate change	Minimise further loss of habitat critical to the survival of red knot throughout Australia (including habitat predicted to become habitat critical in the future because of climate change).	No explicit relevant management actions for pollution or climate change. Ensure that functional connectivity of sites is maintained throughout the species' migration network
Sharp-tailed sandpiper	Conservation Advice for <i>Calidris acuminata</i> (sharp-tailed sandpiper) (DCCEEW, 2024b)	Vulnerable	Climate change Chronic and acute pollution	Minimise further loss of habitat critical to the survival of sharp-tailed sandpiper throughout Australia (including habitat predicted to become habitat critical to survival in the future because of climate change).	No explicit relevant management actions for pollution or climate change. Ensure that functional connectivity of sites is maintained throughout the species' migration network.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 42 / 427
			Validity Status	Rev. No. B	

2.1.2.3 Australian Marine Parks

Under the EPBC Act, Australian Marine Parks (AMPs) are declared in Commonwealth waters based on the International Union for the Conservation of Nature (IUCN) principles and guidelines for categorising protected areas. These AMPs are declared for the purpose of conserving marine habitats and the species that live and rely on these habitats. AMPs are managed under a series of region-based management plans, which detail the management objectives of the AMP, the environmental values within each of the AMPs, and the activities that are permissible within the zones of the AMP.

The EPBC Act allows AMPs to be divided into zones and a category assigned to each, which may differ from the overall category of the AMP. The EPBC Regulations prescribe the Australian IUCN Reserve Management Principles (Environment Australia, 2002) applicable to each category. All activities undertaken within an AMP must be consistent with the objectives of the zone and the values of the AMP (DNP, 2018a), being:

- Special Purpose Zone (IUCN category VI) – to provide for ecologically sustainable use and the conservation of ecosystems, habitats and native species, while applying special-purpose management arrangements for specific activities
- Multiple Use Zone (IUCN category VI) – to provide for ecologically sustainable use and the conservation of ecosystems, habitats and native species
- Habitat Protection Zone (IUCN category IV) – to provide for the conservation of ecosystems, habitats and native species in as natural a state as possible, while allowing activities that do not harm or cause destruction to seafloor habitats
- National Park Zone (IUCN category II) – to provide for the protection and conservation of ecosystems, habitats and native species in as natural a state as possible.

Zoning takes into account the purposes for which the AMP was declared, the objectives of the region-based management plan, and the requirements of the EPBC Act.

AMPs relevant to the petroleum activities are described in detail in Section 4.5.1.

2.1.2.4 Australian Whale Sanctuary

The Australian Whale Sanctuary has been established to protect all whales and dolphins found in Australian waters. The Australian Whale Sanctuary comprises the Commonwealth marine area, beyond the coastal waters of each state and the NT. It includes all of Australia's Exclusive Economic Zone, from 3nm extending 200nm from the coast. Under the EPBC Act, all cetaceans – whales, dolphins and porpoises – are protected in Australian waters: In summary:

- The Australian Whale Sanctuary includes all Commonwealth waters from the 3nm state waters limit out to the boundary of the Exclusive Economic Zone; as in, out to 200nm and further in some places.
- Within the Australian Whale Sanctuary, it is an offence to kill, injure or interfere with a cetacean. Severe penalties apply to anyone convicted of such offences.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 43 / 427
			Validity Status	Rev. No. B	

2.1.3 Environment Protection (Sea Dumping) Act 1981

The *Environment Protection (Sea Dumping) Act 1981* enacts the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (the London Protocol).

The *Sea Dumping Act 1981* came into operation on 6 March 1984. The Petrel-3 wellhead predates the Act as it was temporarily plugged and abandoned in 1981; and the Act does not apply.

However, the Petrel-4 wellhead was temporarily plugged and abandoned in 1988, after the *Sea Dumping Act 1981* came into force. As a result, the Act mandates a sea dumping permit if the Petrel-4 wellhead and its associated equipment is left in-situ.

2.1.4 Additional Relevant Commonwealth Legislation

Table 2-4 summarises additional Commonwealth legislation relevant to the petroleum activity. Further information about international agreements is provided in Section 2.4.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 44 / 427
			Validity Status	Rev. No.	
				B	

Table 2-4: Summary of Commonwealth legislation relevant to the petroleum activities

Legislation	Scope	Application to Activities	Related International Conventions Relevant to the Activity	Administering Authority
<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i>	This Act provides for the preservation and protection from injury or desecration areas and objects that are of significance to Aboriginal people, under which the Minister may make a declaration to protect such areas and objects. The Act also requires the discovery of Aboriginal remains to be reported to the Minister.	<p>No activity being undertaken on land or near shore.</p> <p>There are no known Aboriginal heritage sites or Indigenous Protected Areas within the Operational Area or EMBA.</p> <p>No First Nations cultural heritage sites or values were identified within the Operational Area during consultation with relevant persons.</p>	Not Applicable	Department of Climate Change, Energy, the Environment and Water (DCCEEW)
<i>Air Navigation Act 1920</i>	This Act is responsible for managing navigation within the avian environment.	Helicopter and other aircraft activities operating will comply with the requirements under this Act.	Not Applicable	Department of Infrastructure, Transport, Regional Development, Communications and the Arts
<i>Australian Heritage Council Act 2003</i>	This Act identifies areas of heritage value listed on the Register of the National Estate and sets up the Australian Heritage Council and its functions.	There are no heritage places found on the National Heritage List, within the EMBA that could potentially be impacted by unplanned events.	Not Applicable	Australian Heritage Council
<i>Australian Maritime Safety Authority Act 1990</i>	<p>The Act aims to:</p> <ul style="list-style-type: none"> • promote maritime safety • protect the marine environment from: <ul style="list-style-type: none"> - pollution from ships 	The Act is applicable to offshore petroleum activities where these have the potential to affect maritime safety and/or result in pollution and other environmental damage	International Convention on Oil Pollution Preparedness, Response and	Australian Maritime Safety Authority (AMSA)

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 45 / 427
			Validity Status	Rev. No.	
				B	

Legislation	Scope	Application to Activities	Related International Conventions Relevant to the Activity	Administering Authority
	<ul style="list-style-type: none"> - other environmental damage caused by shipping, and • provide for a national search and rescue service. <p>AMSA is the authority responsible for the application of the Act.</p>	<p>associated with the operation of ships. This is in particular relevant to the potential risk of oil spill associated with offshore petroleum activities.</p> <p>Impacts and risks associated with vessel and MODU movements as part of the proposed activities are discussed in Sections 7 and 8.</p>	Cooperation 1990 (OPRC 90).	
<i>Biosecurity Act 2015</i>	<p>The <i>Biosecurity Act 2015</i> replaced the <i>Quarantine Act 1908</i> in June 2016.</p> <p>Provides a definition of 'quarantine' and establishes the Australian Quarantine Inspection Service (AQIS). For the petroleum industry, it regulates the condition of vessels and drill rigs entering Australian waters with regards to ballast water and hull fouling.</p> <p>The regulations stipulate that all information regarding the voyage of the vessel and the ballast water is declared correctly to the quarantine officers.</p>	<p>For the petroleum industry, it regulates the condition of vessels and drill rigs entering Australian waters with regards to ballast water and hull fouling.</p> <p>Management measures related to biosecurity risk associated with the program are presented in Section 8.3.</p>	International Convention for the Control and Management of Ships Ballast Water and Sediment 2004	AQIS and Department of Agriculture, Fisheries and Forestry (DAFF)
<i>Climate Change Act 2022</i>	This Act sets out Australia's greenhouse gas emissions reduction targets in a manner consistent with the Paris Agreement and Australia's Nationally Determined Contribution (NDC).	The emissions targets established by this Act are inclusive of offshore petroleum activities.	The Paris Agreement	The Commonwealth Government
<i>Environment Protection and Biodiversity Conservation</i>	These regulations provide guidelines for operating aircraft and vessels in the vicinity of cetaceans.	All vessels and aircraft undertaking the activities will comply with the requirements of the Regulations. The requirements are detailed in the	Not applicable	DCCEEW

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 46 / 427
			Validity Status	Rev. No.	
				B	

Legislation	Scope	Application to Activities	Related International Conventions Relevant to the Activity	Administering Authority
<i>Regulations 2000: Division 8.1</i>		Australian National guidelines for Whale and Dolphin Watching.		
<i>Hazardous Waste (Regulation of Exports and Imports) Act 1989</i>	Implements Australia's obligations under the Basel Convention on the Control or Transboundary Movements of Hazardous Wastes and their Disposal.	All ships involved in offshore petroleum activities in Australian waters are required to abide to the requirements under this Act. The management of waste is discussed in Sections 7 and 8.	Not applicable	DCCEEW
National Environment Protection (National Pollutant Inventory) Measure 1998 (established under the <i>National Environment Protection Council Act 1994</i>)	This Act aims to implement national environment protection matters to enhance, restore and protect the Australian environment. The Measure provides the framework for developing and establishing the National Pollutant Inventory, which is an internet database designed to provide publicly available information about the types, and amount of certain substances being emitted to the air, land and water.	Reporting requirements for the petroleum activity will comply with the National Environment Protection Measure through routine reporting of the relevant National Pollutant Inventory Substances.	Not applicable	DCCEEW
<i>National Greenhouse and Energy Reporting Act 2007</i> (NGER Act)	The first objective of this Act is to introduce a single national reporting framework for the reporting and dissemination of information related to greenhouse gas emissions, greenhouse gas projects, energy consumption and energy production of corporations to: <ul style="list-style-type: none"> • inform government policy formulation and the Australian public; and • meet Australia's international reporting obligations; and • assist Commonwealth, State and Territory government programs and activities; and 	Reporting requirements for GHG emissions associated with Petrel-3 and Petrel-4 Monitoring and Decommissioning will comply with the reporting requirements of the Act, including the NGER requirements. The management of atmospheric emissions is discussed in Section 7.4.	United Nations Framework Convention on Climate Change (UNFCCC) 1992	Clean Energy Regulator DCCEEW

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 47 / 427
				Validity Status	Rev. No.	
					B	

Legislation	Scope	Application to Activities	Related International Conventions Relevant to the Activity	Administering Authority
	<ul style="list-style-type: none"> avoid the duplication of similar reporting requirements in the States and Territories. <p>The second object of this Act is to ensure that net covered emissions of greenhouse gases from the operation of a designated large facility do not exceed the baseline applicable to the facility.</p>			
<i>Navigation Act 2012</i>	<p>The Act regulates international ship and seafarer safety as well as the protection of the marine environment from shipping and the actions of seafarers in Australian waters. The Navigation Act also gives effect to international conventions for maritime issues where Australia is a signatory, including the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78).</p> <p>The Act regulates:</p> <ul style="list-style-type: none"> Vessel survey and certification Vessel construction standards Vessel crew Personnel qualifications and welfare Occupational health and safety Handling of cargoes Passengers Marine pollution prevention Monitoring and enforcement activities. 	<p>All vessels involved in petroleum activities in Australian waters will comply with the requirements under this Act.</p> <p>Several Marine Orders (MO) are enacted under this Act which relate to offshore petroleum activities, including:</p> <ul style="list-style-type: none"> MO Part 21: Safety of navigation and emergency procedures MO Part 30: Prevention of collisions MO Part 59: Offshore industry vessel operations <p>Management measures related to shipping safety during the program are presented in Section 7 and 8.</p>	Certain sections of MARPOL.	AMSA
<i>Ozone Protection and Synthetic Greenhouse Gas Management Act</i>	Regulates the manufacture, importation and use of ozone depleting substances (ODS) (typically used in fire-fighting equipment and refrigerants). Applicable to the handling of any ODS.	The activity does not include import, export or manufacture activities of ODS.	Montreal Protocol on Substances that Deplete the Ozone Layer.	DCCEEW

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 48 / 427
				Validity Status	Rev. No.	
					B	

Legislation	Scope	Application to Activities	Related International Conventions Relevant to the Activity	Administering Authority
1989 (and associated regulations)		This Act applies where ODS is found on vessel refrigeration systems, however, this is a rare occurrence.	Vienna Convention for the Protection of the Ozone Layer 1985 and the Montreal Protocol on Substances that Deplete the Ozone Layer 1987	
<i>Protection of the Sea (Harmful Antifouling Systems) Act 2006</i>	The Act aims to protect the marine environment from the effects of harmful anti fouling systems.	All ships involved in offshore petroleum activities in Australian waters will comply with the requirements under this Act. The marine order that relates to petroleum activities is: <ul style="list-style-type: none"> MO Part 98: Marine Pollution Prevention – Anti-fouling Systems. The management of biofouling risk is discussed in Section 8.3.	International Convention on the Control of Harmful Anti-fouling Systems on Ships 2001.	AMSA
<i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i>	The Act aims to protect the marine environment from pollution by oil and other harmful substances discharged from ships in Australian waters. It also invokes certain requirements of the MARPOL Convention such as those relating to discharge of noxious liquid substances, sewage, garbage and air pollution.	All vessels involved in petroleum activities in Australian waters will comply with the requirements under this Act. Several MOs are enacted under this Act relating to offshore petroleum activities, including: <ul style="list-style-type: none"> MO Part 91: Marine Pollution Prevention – Oil 	Various parts of MARPOL.	AMSA

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 49 / 427
			Validity Status	Rev. No.	
				B	

Legislation	Scope	Application to Activities	Related International Conventions Relevant to the Activity	Administering Authority
	This Act requires ships greater than 400 gross tonnes to have pollution emergency plans in place, and also provides for emergency discharges from ships.	<ul style="list-style-type: none"> MO Part 93: Marine Pollution Prevention – Noxious Liquid Substances MO Part 94: Marine Pollution Prevention – Harmful Substances in Packaged Forms MO Part 95: Marine Pollution Prevention – Garbage MO Part 96: Marine Pollution Prevention – Sewage MO Part 97: Marine Pollution Prevention – Air Pollution. Management measures related to pollution from oil or other hazardous substances are presented in Section 8.		
<i>Protection of the Sea (Civil Liability of Bunker Oil Pollution Damage) Act 2008</i>	This Act implements the requirements for the International Convention on Civil Liability for Bunker Oil Pollution Damage.	This Act applies to diesel refuelling which will occur during the decommissioning campaign.	International Convention on Civil Liability for Oil Pollution Damage	AMSA
<i>Sea Installations Act 1987</i>	The Sea Installations Act regulates the placement, use and maintenance of seabed installations in Australian waters. A sea installation refers to any manmade structure that is in contact with the seabed and used for an environment-related activity, for example: <ul style="list-style-type: none"> Tourism or recreation Carrying on of a business 	Yes – the London Protocol is implemented through Section 5 of the Sea Dumping Act; Article 1.4.1.4 of the London Protocol covers the abandonment of manmade structures.	Article 1.4.1.4 of the London Protocol is implemented through Section 5 of the Sea Dumping Act	DCCEEW

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 50 / 427
			Validity Status	Rev. No.	
				B	

Legislation	Scope	Application to Activities	Related International Conventions Relevant to the Activity	Administering Authority
	<ul style="list-style-type: none"> • Exploring, exploiting or using the living resources of the sea, seabed or sub-soil of the seabed whether by way of fishing, pearling, oyster farming, fish farming or otherwise • Marine archaeology • Other activities including scientific activity or transport activity. 			
<i>Underwater Cultural Heritage Act 2019</i>	Protects the heritage values of shipwrecks, sunken aircraft and relics (older than 75 years) in Australian Territorial waters from the low water mark to the outer edge of the continental shelf (excluding the State's internal waterways). The Act allows for protection through the designation of protection zones. Activities / conduct prohibited within each zone will be specified.	<p>The Act is applicable to any activities that have the potential to result in damage, interference, removal or destruction of cultural heritage properties protected under the Act.</p> <p>Heritage values of the area of the proposed activities are described in Section 4.6.8 and management measures regarding heritage values discussed in Sections 7 and 8.</p>	Convention on Protection of the Underwater Cultural Heritage 2001.	DCCEEW

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 51 / 427
				Validity Status	Rev. No.	
					B	

2.2 Commonwealth Guidelines and Policies

While guidelines do not typically have force under legislation, they are often considered to be consistent with good practice. Table 2-5 summarises the Commonwealth policies and guidelines that are relevant to the petroleum activities.

Table 2-5: Summary of Commonwealth guidelines and policies relevant to the decommissioning activities

Policies and guidelines	Summary	Relevance to the Petrel-3 and Petrel-4 Activities
Assessing and Managing Impacts to Underwater Cultural Heritage in Australian Waters – Guidelines on the application of the Underwater Cultural Heritage Act 2018 (DCCEEW, 2024g)	Provides guidance on addressing legislative obligations for proponents of near and offshore developments, and promotes best practice for identifying, assessing, and protecting underwater cultural heritage in Australian waters.	Relevant for assessing impact to cultural heritage values.
Draft Australian Government guidance for removal of oil and gas property and sea dumping of infrastructure in Commonwealth waters (Commonwealth of Australia, 2022)	The draft guidance outlines the types of property and infrastructure that can't be left in the sea. It also includes the types that may be permitted to be left in the sea, in limited circumstances. It clarifies: <ul style="list-style-type: none"> • how Australia's offshore decommissioning and sea dumping frameworks connect. • the application and assessment considerations when an oil and gas titleholder is seeking permission to leave property or infrastructure in place. 	Although in draft form, is relevant for wellhead removal options.
Australian and New Zealand guidelines for fresh and marine water quality (Commonwealth of Australia and New Zealand Government, 2018)	Provides guidelines and a comprehensive set of tools for assessing and managing ambient water and sediment quality.	Where relevant, changes to water and sediment quality will be assessed using the methods and guideline concentrations for toxicants in the guideline.
Australian Ballast Water Management Requirements (DAWE, 2020).	Provides requirements for management measures to reduce the risk of introducing harmful aquatic organisms into Australia's marine environment through ships ballast water.	All vessels undertaking petroleum activities will be required to comply with the requirements.
Australian Biofouling Management Requirements (DAFF, 2023)	Provides requirements for the management of biofouling when operating vessels under biosecurity control within Australian territorial seas.	Where relevant, vessels will comply with the requirements including pre-arrival reporting.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 52 / 427
				Validity Status	Rev. No.	
					B	

Policies and guidelines	Summary	Relevance to the Petrel-3 and Petrel-4 Activities
International Maritime Organization (IMO) Guidelines for the Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species (Biofouling Guidelines) (IMO, 2023)	Guidelines for controlling and managing ships' biofouling to minimise the transfer of invasive aquatic species.	Specific requirements are that vessels have a biofouling management plan and biofouling record book.
Matters of National Environmental Significance – Significant Impact Guidelines 1.1 (DoE, 2013)	Guidelines to assist in determining whether an action is likely to have a significant impact on a matter of national environmental significance.	The guidelines inform the impact assessment detailed in this EP.
National biofouling management guidelines for the petroleum production and exploration industry (Marine Pest Sectoral Committee, 2018).	A voluntary biofouling management guidance document developed under the National System for the Prevention and Management of Marine Pest Incursions. Its purpose is to provide tools to operators to minimise the amount of biofouling accumulating on their vessels, infrastructure and submersible equipment, thereby minimising the risk of spreading marine pests.	All vessels undertaking petroleum activities will implement effective biofouling controls as a best practice.
National Light Pollution Guidelines for Wildlife (DCCEEW, 2023)	The guidelines provide best-practice industry standard for managing potential impacts of light pollution on marine fauna.	National Light Pollution Guidelines for Wildlife are used when assessing the relevant mitigation controls to apply to the petroleum activities light emissions.
NOPSEMA Bulletins – Oil Spill Modelling (NOPSEMA, 2019)	Provides advice relating to applying oil spill modelling to support risk evaluations.	The spill modelling and associated outputs have been developed in accordance with the guidance note.
NOPSEMA Policy – Section 572 Maintenance and removal of property (NOPSEMA, 2022)	Outlines NOPSEMA's expectations on maintaining and removing property.	Decommissioning and removal of the Petrel-3 and Petrel-4 infrastructure have been designed and selected to meet the regulatory base case for full removal.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 53 / 427
				Validity Status	Rev. No. B	

Policies and guidelines	Summary	Relevance to the Petrel-3 and Petrel-4 Activities
NOPSEMA Information paper – Reducing marine pest biosecurity risks through good practice biofouling management (NOPSEMA, 2020)	Provides advice that is consistent with the expectations of all jurisdictions responsible for regulating biofouling management within the Australian marine environment. Also clarifies biosecurity requirements relevant to offshore activities.	The petroleum activities will comply with the relevant biosecurity requirements, including adopting requirements that may apply to the movement of vessels into and between Commonwealth and State jurisdiction.
NOPSEMA Guidance Note: Petroleum activities and Australian Marine Parks (NOPSEMA, 2024b)	Provides guidance on managing petroleum activities risks and impacts to Australian Marine Parks and to support consultation with the Director of National Parks (DNP).	The EMBA overlaps with the Oceanic Shoals Marine Park (Section 4.5.1). The guidance has been used when consulting the relevant persons (Section 5).
NOPSEMA Guideline: Consultation in the course of preparing an environment plan (NOPSEMA, 2023)	Provides guidance on consultation for EPs. This guideline is used to develop processes for implementing consultation. The guideline focuses on the instructive reasons given by the Full Federal Court of Australia, in its appeal decision Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 (appeal decision) on 2 December 2022.	The guidance has been used when consulting the relevant persons (Section 5).
NOPSEMA Guideline: Consultation with Commonwealth agencies with responsibilities in the marine area (NOPSEMA, 2024c)	Provides guidance on consultation for EPs, specifically Australian Government agencies with responsibilities in the Commonwealth marine area.	The guidance has been used when consulting the relevant persons (Section 5).
NOPSEMA Guidance Note: Responding to public comment on environment plans (NOPSEMA, 2024a)	Provides guidance on consultation for EPs. The guidance reflects NOPSEMA's interpretation of the requirements of the OPGGS Regulations.	The guidance has been used when consulting the relevant persons (Section 5).
NOPSEMA Guidance note: When to submit a proposal revision of an EP (NOPSEMA, 2024d)	Provides guidance on NOPSEMA's interpretation of the requirements to revise an EP under Part 4 Division 5 of the <i>Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023</i> .	The guidance has been used when consulting the relevant persons (Section 5).
NOPSEMA Guidance note: Environment plan content requirement (NOPSEMA, 2024e)	Assists stakeholders in understanding the requirements for preparing and submitting an EP for assessment.	The guidance has been used when consulting the relevant persons (Section 5).

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 54 / 427
				Validity Status	Rev. No.	
					B	

Policies and guidelines	Summary	Relevance to the Petrel-3 and Petrel-4 Activities
Offshore Installations – Biosecurity Guide (DAFF, 2023a)	Provides the offshore petroleum industry with guidance about Australian biosecurity requirements.	All decommissioning activity vessels implement effective biosecurity controls, in accordance with the requirements of this biosecurity guideline.
Offshore Petroleum Decommissioning Guideline (Department of Industry, Science and Resources, 2022)	Provides a decommissioning guideline and confirms the Australian Government’s policy expectation that removing property is the ‘base case’ or default decommissioning requirement. Assists the offshore petroleum industry in planning and seeking the regulatory approvals necessary to undertake a decommissioning project, and to understand the expectations of relevant decision-makers.	Decommissioning and removal of the Petrel-3 and Petrel-4 infrastructure have been designed and selected to meet the regulatory base case for full removal.

2.3 International Agreements

International agreements and conventions that are relevant to the proposed activity are summarised in Table 2-6.

Table 2-6: Applicable international agreement and conventions

International Agreements and Conventions	Summary
Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction and their Environment 1974, commonly referred to as JAMBA	These agreements recognise international concern for protecting migratory birds and birds in danger of extinction. The EPBC Act gives effect to the agreement by listing migratory birds recognised by it. Migratory species are MNES.
Agreement between the Government of Australia and the Government of the People’s Republic of China for the Protection of Migratory Birds and their Environment 1986, commonly referred to as CAMBA	These agreements recognise international concern for protecting migratory birds and birds in danger of extinction. The EPBC Act gives effect to the agreement by listing migratory birds recognised by it. Migratory species are MNES.
Convention on Biological Diversity 1992	This convention aims to conserve biological diversity, sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 55 / 427
				Validity Status	Rev. No. B	

International Agreements and Conventions	Summary
Convention on the Conservation of Migratory Species of Wild Animals 1979 (Bonn Convention)	This convention aims to improve the status of all migratory species by national action and international agreements between range states. The EPBC Act gives effect to the Bonn Convention through listing species as Migratory under Part 3 of the Act. Migratory species are MNES.
Convention on Oil Pollution Preparedness, Response and Co-operation 1990 (OPRC 90)	This convention establishes national arrangements for responding to oil pollution incidents from ships, offshore oil facilities, seaports and oil handling. The convention recognises that in the event of a pollution incident, prompt and effective action is essential.
Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (known as the London Convention and more recently, the London Protocol)	The London Convention contributes to the international control and prevention of marine pollution by prohibiting the dumping of certain hazardous materials. The <i>Environment Protection (Sea Dumping) Act 1981</i> gives effect to the London Protocol.
Convention for the Prevention of Pollution from Ships 1973/1978 (MARPOL 73/78)	This convention aims to preserve the marine environment by eliminating completely pollution by oil and other harmful substances and by minimising accidental discharge of such substances. It contains five Annexes, dealing respectively with oil, noxious liquid substances, harmful packaged substances, sewage and garbage. Detailed rules are laid out as to the extent to which (if at all) such substances can be released in different sea areas.
Convention on the Protection of the Underwater Cultural Heritage	The 2001 Convention provides a framework on how to better identify, research and protect underwater heritage.
Convention on Wetlands of International Importance (Ramsar Convention)	The Ramsar Convention provides for conserving and sustainably using wetlands. The EPBC Act gives effect to the Ramsar Convention by providing specific protection for wetlands recognised by the Convention under Part 3 of the EPBC Act.
International Convention for the Control and Management of Ships Ballast Water and Sediment 2004	This convention aims to prevent the spread of harmful aquatic organisms from one region to another via ballast water and sediment. The <i>Biosecurity Act 2015</i> gives effect to the convention.
International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978	This convention sets out minimum standards for masters, officers and watch personnel on merchant vessels. The <i>Navigation Act 2012</i> and subsidiary Marine Orders give effect to the convention.
International Convention for the Safety of Life at Sea 1974	This convention sets out minimum standards for constructing, equipping and operating merchant ships. The convention requires signatory flag states to ensure the ships flagged by them comply with these standards as a minimum. The <i>Navigation Act 2012</i> and subsidiary Marine Orders give effect to the convention.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 56 / 427
				Validity Status	Rev. No.	
					B	

International Agreements and Conventions	Summary
International Regulations for Preventing Collisions at Sea 1972	These regulations outline internationally recognised navigation rules to be used by vessels at sea to avoid collisions. The regulations are published by the International Maritime Organization (IMO). The <i>Navigation Act 2012</i> and subsidiary Marine Orders give effect to the regulations.
International Convention on Civil Liability for Oil Pollution Damage 1969	The Civil Liability Convention ensures adequate compensation is available to persons who suffer oil pollution damage resulting from maritime casualties involving oil-carrying ships by placing liability for such damage on the owner of the ship.
International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties 1969	The convention gives State Parties powers to intervene on ships on the high seas when their coastlines are threatened by an oil spill from that ship.
Kyoto Protocol	This is an international treaty that extends the 1992 United Nations Framework Convention on Climate Change, which commits state parties to reducing GHG emissions.
The Paris Agreement	The Paris Agreement aims to limit global temperature rise this century to well below 2°C above preindustrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C.
Vienna Convention for the Protection of the Ozone Layer 1985 and the Montreal Protocol on Substances that Deplete the Ozone Layer 1987	The convention is a multilateral environmental agreement that acts as a framework for international efforts to protect the ozone layer. The accompanying Montreal Protocol specifies goals for reducing the uses of chlorofluorocarbons, the main chemical agents causing ozone depletion.
Minamata Convention on Mercury 2013	<p>The convention is an international treaty that seeks to protect human health and the environment from anthropogenic (caused by humans) emissions and releases of mercury and mercury compounds.</p> <p>The convention covers all aspects of the lifecycle of mercury, controlling and reducing mercury across a range of products, processes and industries.</p> <p>Department of Climate Change, Energy, the Environment and Water (DCCEEW) leads Australia's involvement in the Minamata Convention.</p>
United Nations Framework Convention on Climate Change 1992	The convention is an international environmental treaty with the objective of stabilising GHG concentrations at a level that would prevent dangerous anthropogenic interference with the climate system.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 57 / 427
			Validity Status	Rev. No. B	

2.4 Western Australian and Northern Territory Legislation

The Petrel field is located in Australian Commonwealth waters adjacent to the Western Australian (WA) coast. The EMBA does not enter WA or NT waters.

Vessels supporting the petroleum activities will pass through either WA or NT waters while transiting to and from a port and will have to comply with a variety of WA legislation. Table 2-7 summarises legislation relevant to the petroleum activities.

Table 2-7: Summary of WA and NT legislation relevant to the petroleum activities

Legislation	Summary
WA	
<i>Biodiversity Conservation Act 2016</i>	The <i>Biodiversity Conservation Act 2016</i> came into effect on 3 December 2016 and replaced the <i>Wildlife Conservation Act 1950</i> . Relating to potential impacts to listed species: this Act provides for conserving and protecting Western Australian wildlife.
<i>Dangerous Goods Safety Act 2004</i>	Relating to general vessel operations: this Act provides for safely storing, handling, and transporting certain dangerous goods, including explosives, gases and flammable or combustible liquids. Licencing may be required, depending on the substances involved and the quantities stored or transported. These laws are administered by the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS).
<i>Environmental Protection Act 1986</i>	Relating to non-routine operations (potential oil spills) in areas under State jurisdiction: this Act provides for preventing, controlling, and abating pollution and environmental harm and for conserving, preserving, protecting, enhancing, and managing the environment.
Fish Resources Management Regulations 1995	Under Regulation 176 of the Fish Resources Management Regulations 1995, it is an offence to translocate live non-endemic fish to WA without permission. Under section 105 of the <i>Fish Resources Management Act 1994</i> , it is an offence to bring noxious fish into WA. Also, under Part 16A of the <i>Fish Resources Management Act 1994</i> , the Department has emergency powers to deal with incursions of invasive marine species (IMS), which include directing a person to perform necessary activities to prevent or control the spread of IMS, or to eradicate them in WA waters. If these activities are not undertaken, Eni may perform the activities and recover any costs incurred from the person initially directed to do so.
Marine (Certificates of Competency and Safety Manning) Regulations 1983	Marine Safety is responsible for administering national and internationally agreed competency standards; and for examining candidates for commercial Certificates of Competency as master, mate or engineer in WA vessels.
<i>Pollution of Waters by Oil and Noxious Substances Act 1987</i>	Relating to non-routine operations (potential oil spills) in State waters: this Act relates to protecting the sea and certain waters from pollution by oil and other noxious substances discharged from ships and places on land.
Prevention of Collisions at Sea Regulations 1983	Regulations largely comprise the Rules set out in the International Regulations for Preventing Collisions at Sea 1972 applicable in state and international waters.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 58 / 427
				Validity Status	Rev. No.	
				B		

<i>Western Australia Marine Act 1982</i>	Relating to vessel movements: an Act to regulate navigation and shipping.
<i>Western Australian Marine (Sea Dumping) Act 1981</i>	Relating to general vessel operations: an Act to provide for protecting the environment by regulating the dumping into the sea, and the incineration at sea, of wastes and other matter and the dumping into the sea of certain other objects, and for other purposes.
NT	
<i>Dangerous Goods Act 1998</i>	This Act provides for safely storing, handling and transporting certain dangerous goods (such as flammable, combustible liquids) in order to promote public safety and protect property and the environment.
<i>Environment Protection Act 2019</i>	This Act establishes the framework for assessing potential or anticipated environmental impacts of development. The object of the Act is to ensure matters affecting the environment to a significant extent are fully examined and taken into account in decisions by the NT Government.
Environment Protection (National Pollutant Inventory) Objective 2004	This is an objective under the Waste Management and Pollution Control Act that provides for compulsory reporting of air emissions by certain facilities, in accordance with the Commonwealth National Environment Protection (National Pollutant Inventory) Measure.
<i>Heritage Act 2011</i>	This Act established the NT Heritage Council and governs the protection of both natural and cultural heritage places within the NT jurisdiction.
<i>Northern Territory Aboriginal Sacred Sites Act 1989</i>	This Act facilitates the protection and registration of sacred sites, through procedures for avoiding sacred sites when developing and using land and through establishing an Authority for the purposes of the Act.
<i>Waste Management and Pollution Control Act 1998</i>	This Act provides for protecting the environment through encouraging effective waste management and pollution prevention measures, including licencing for certain levels of pollution discharges to air and water. The Act does not apply to wastes that are confined to the site on which they are generated but requires licencing and registration for wastes that are discharged offsite.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 59 / 427
			Validity Status	Rev. No. B	

3 DESCRIPTION OF THE ACTIVITY

Within the NT/RL1 permit, two wells (Petrel-3 and Petrel-4) have been identified as suspended since the 1980's, with wellheads remaining in-situ. The wells were suspended in accordance with the regulations at the time with barriers across and above the reservoir including the testing of the barriers. The reservoir is isolated in both wells and will not flow in their current condition.

To ensure that the condition of the seabed equipment on the wells remains unchanged and to plan for the decommissioning campaign, Eni proposes the following activities as part of the Petrel-3 and Petrel-4 decommissioning strategy:

- Annual general visual inspections (GVI) as part of the in-force Well Operations Management Plan (WOMP) until Petrel-3 and Petrel-4 are permanently plugged and abandoned (P&A). The inspections will be performed within the five-year WOMP period using a suitable ROV deployed from contracted vessels. Marine growth removal may also be undertaken on the wellhead equipment to facilitate the inspection and prepare for the decommissioning campaign;
- Geophysical and Geotechnical survey campaigns;
- Pre-decommissioning vessel campaign to prepare the wells for decommissioning. High-pressure cleaning of the wellheads to allow detailed inspection and preparation for decommissioning. Removal of the corrosion caps, wellhead 3D scan by camera or laser to ensure integrity and corrosion cap replacement;
- Decommissioning campaign, to permanently seal and abandon the Petrel-3 and Petrel-4 wells pursuant to an accepted Petrel-3 and Petrel-4 WOMP. Partial, complete and leave in-situ removal options are included; and
- Post-decommissioning As-left survey, to ensure all infrastructure is removed as per scope.

Since the actual timing of these activities will depend on a number of factors, including wellhead integrity investigations, site specific surveys, vessel and rig feasibility checks, vessel and rig availability and scheduling, weather conditions and consideration of neap tides and seasonal metocean operability, stakeholder consultation and regulatory approvals these activities will potentially occur in any season between 2025 and 2027.

3.1 Overview

3.1.1 Wells information

The closest wellhead to the shore is Petrel-3, which lies approximately 250km WSW of Darwin (NT) and 280km N from Wyndham, on the northern coast of WA, in water depths of approximately 95m. Table 3-1 and Table 3-2 outline the locations and other well information for the wells proposed for decommissioning. The petroleum activity inventory subject to this EP is limited to the two wells and their respective immediate wellheads.

The suspended wellheads protrude above the seafloor approximately 2-3m. Both of the suspended wells have four guideposts around the well. Figure 3-1 and Figure 3-2 show subsea images of Petrel-3 and Petrel-4 suspended wells, respectively.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 60 / 427
				Validity Status	Rev. No. B	

Figure 3-3 and Figure 3-4 show the well suspension diagrams and the barriers in place for Petrel-3 and Petrel-4 wells respectively (as per the in-force WOMP at the time of writing).



Figure 3-1: Petrel-3 suspended well

Table 3-1: Petrel-3 well information

Well Name	Petrel-3
Well Designation	Step-out Well
Permit	NT/RL1
Spud Date	28 th October 1981
Original Operator	Australian Aquitaine Petroleum Pty Ltd
Current Interest Holders	Eni Energy Bonaparte Pty Ltd, an affiliate of Eni Australia Ltd and owned by Eni International BV (57%), Santos Limited (24%), Bonaparte Gas and Oil Pty Ltd (19%)
Lat-MSL	-2.37m (Fugro 2010)
Tidal Range	0.00m to 4.21m (RPS Metocean 2010)
Water Depth	95m [Mean Sea Level (MSL)]
Geographic Surface Location	Datum: GDA94
	Lat: 12° 56' 2.071" S
	Long: 128° 34' 14.671" E
	Projection: MGA 94 UTM Zone 52
	Easting: 453,438 m E Northing: 8,570,134 m N
Well Depth (TD)	3970mMDRT (RKB Elevation on original well 30.48m)
Max BHT (°C)	Not reported

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 61 / 427
			Validity Status	Rev. No. B	

Max BHP	5524psi at 3907mMDRT (DST-1)
Well Status	Suspended gas producer
Other features aside from the wellhead	Drilling template or temporary guide base (TGB), made of a steel frame (1.5m high, weighing 5.3 tons) Permanent guide base (PGB), with 4 guideposts (~3m high, weighing 6.8 tons) Cement patio Potentially bags of cement or barite within the TGB



Figure 3-2: Petrel-4 suspended well

Table 3-2: Petrel-4 well information

Well Name	Petrel-4
Well Designation	Step-out Well
Permit	NT/RL1
Spud Date	20 th April 1988
Original Operator	Elf Aquitaine Exploration Australia Pty Ltd.
Current Interest Holders	Eni Energy Bonaparte Pty Ltd, an affiliate of Eni Australia Ltd and owned by Eni International BV (57%), Santos Limited (24%), Bonaparte Gas and Oil Pty Ltd (19%)
Lat-MSL	-2.37m (Fugro 2010)
Tidal Range	0.00m to 4.21m (RPS Metocean 2010)
Water Depth	95m (MSL)
Geographic Surface Location	Datum: GDA94
	Lat: 12° 53' 13.194" S

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 62 / 427
			Validity Status	Rev. No. B	

	Long: 128° 29' 45.557" E
	Projection: MGA 94 UTM Zone 52
	Easting: 445,319 m E
	Northing: 8,575,307 m N
Well Depth (TD)	3975m MDRT (RKB Elevation on original well 25m)
Max BHT (°C)	139° reported as maximum temperature in DST.
Max BHP	5125 psi at 3570m
Well Status	Suspended gas producer
Other features aside from the wellhead	Drilling template or temporary guide base (TGB), made of a steel frame (1.5m high, weighing 5.3 tons) Permanent guide base (PGB), with 4 guideposts (~3m high, weighing 6.8 tons) Cement patio Potentially bags of cement or barite within the TGB

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 63 / 427
				Validity Status	Rev. No.	
					B	

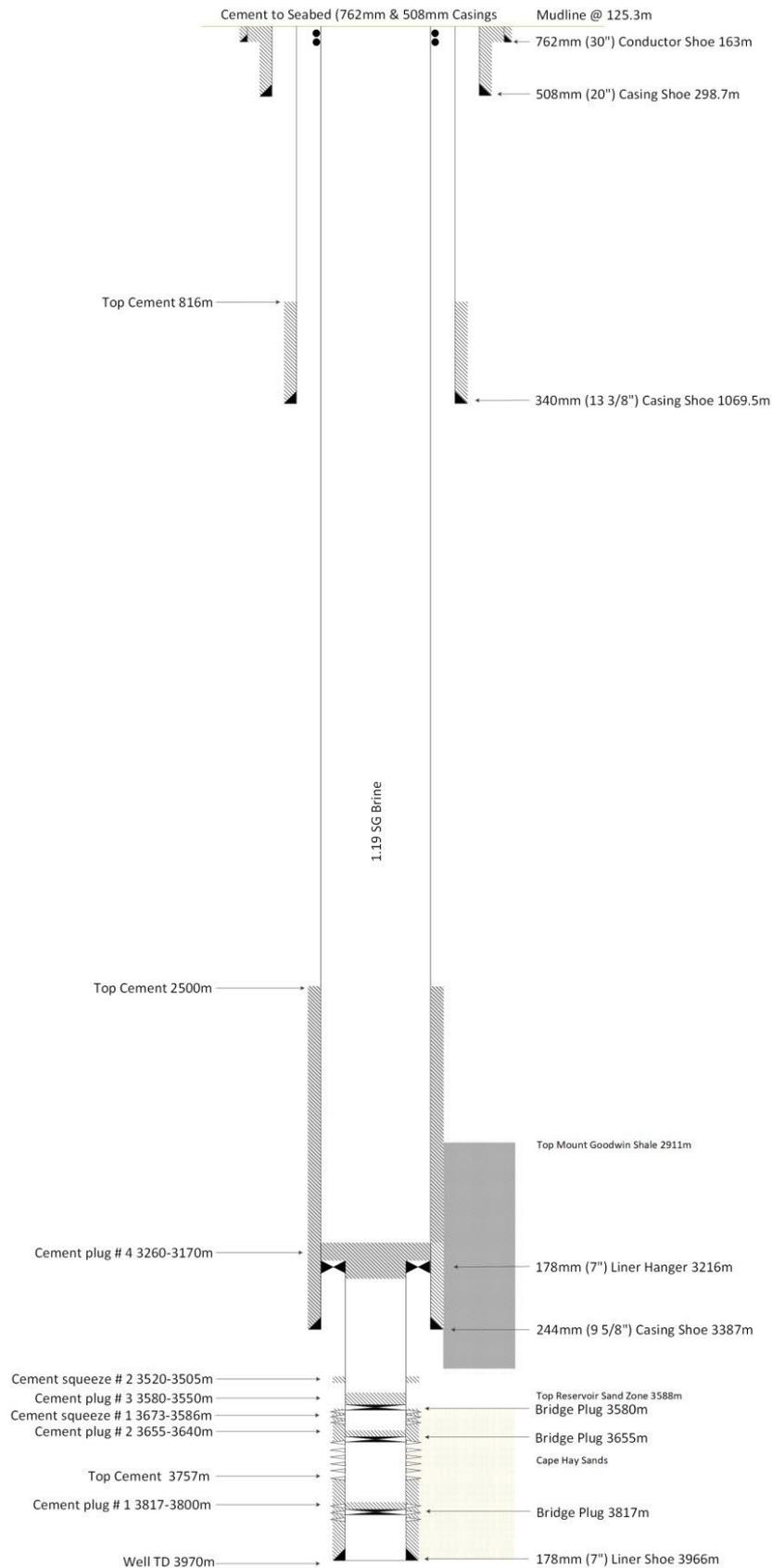


Figure 3-3: Petrel-3 Well Barrier Schematic

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 64 / 427
				Validity Status	Rev. No.	
					B	

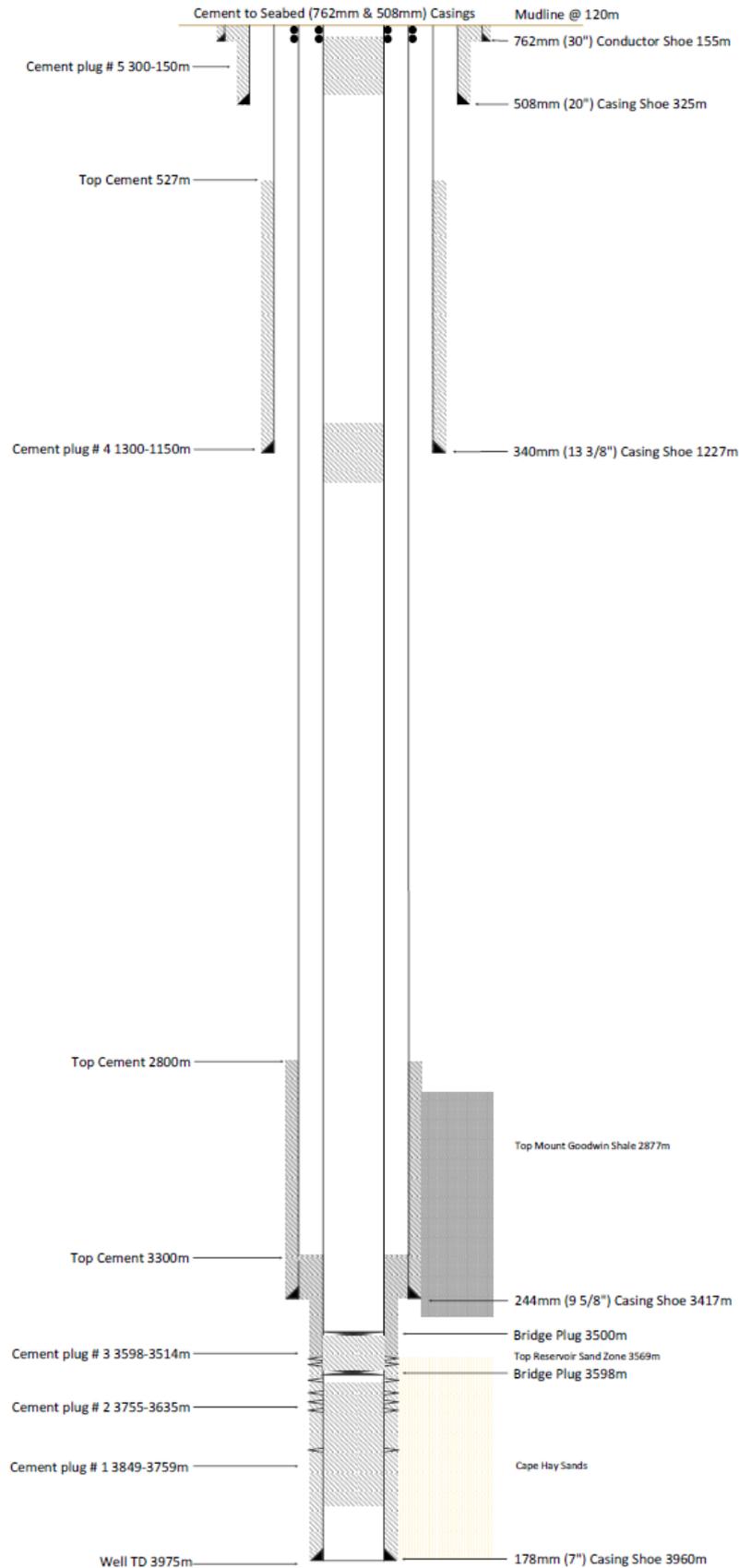


Figure 3-4: Petrel-4 Well Barrier Schematic

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 65 / 427
			Validity Status	Rev. No. B	

3.1.2 Operational Area

The Operational Area is a defined area within which all petroleum activities associated within this EP occur, and which allows impact assessment of those activities. It includes the extent of all planned activities within the EP and is defined as a 3km radius around the two wells and a 3km wide corridor between them (Figure 3-5).

The general transit of the MODU and vessels to and from the Operational Area is not considered a petroleum activity and is excluded from the scope of this EP. These activities will be undertaken in accordance with the *Navigation Act 2012* (Cth).

	Eni australia Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 66 / 427
			Validity Status	Rev. No.	
				B	

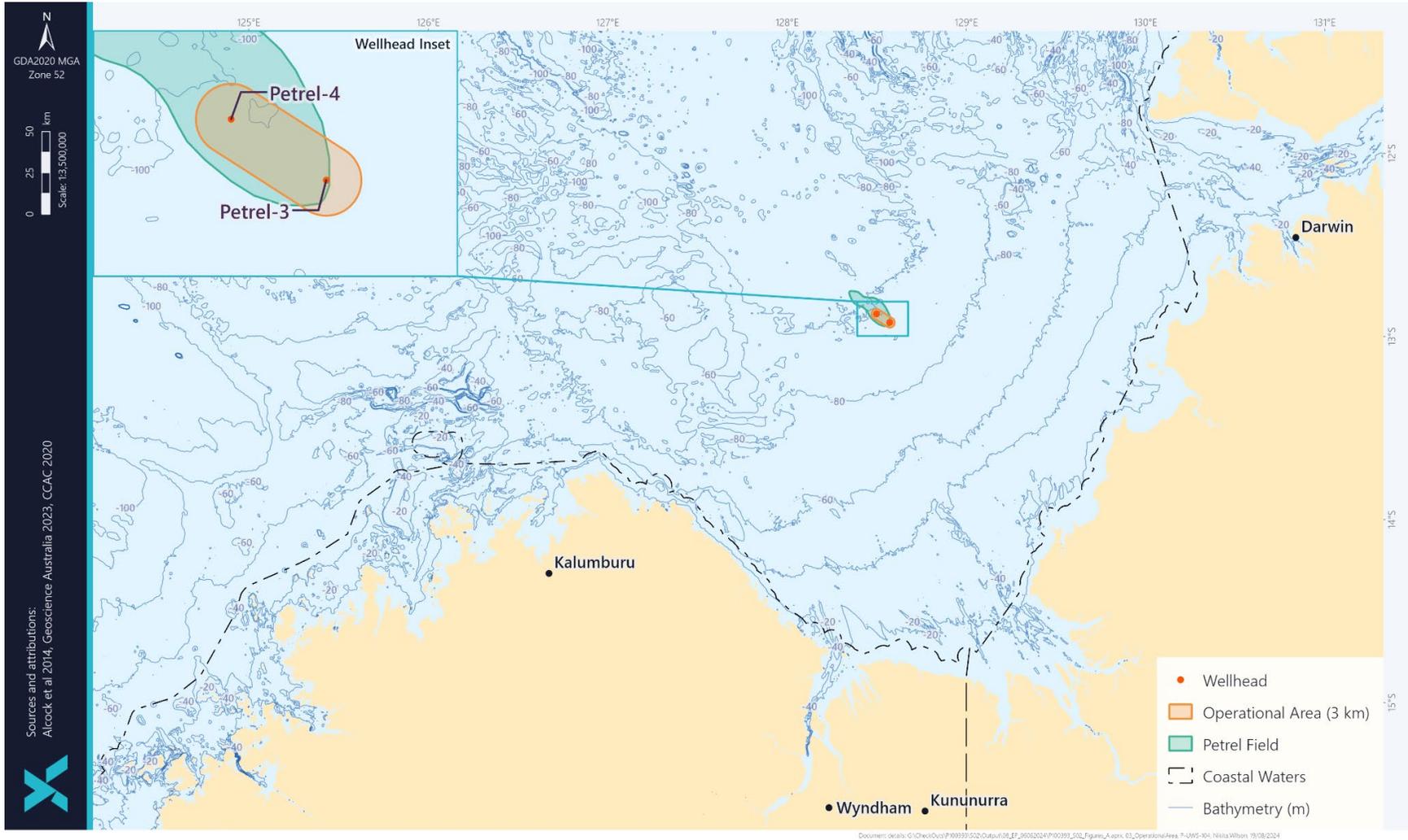


Figure 3-5: Petrel-3 and Petrel-4 Operational Area

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 67 / 427
			Validity Status	Rev. No.	
				B	

3.1.3 Timing and duration

Since the actual timing of the activity campaigns is dependent on tides (neap tide), vessel availability, and weather conditions, this EP has accounted for activities occurring in any season.

The petroleum activities covered under this EP are grouped into:

- Monitoring and pre-decommissioning activities;
- Decommissioning activities; and
- Post-decommissioning activities.

Table 3-3 provides a summary of these activities. The following sections will detail the activities proposed.

Table 3-3: Summary of the activities covered in this EP and duration

Monitoring and pre-decommissioning activities	Activities summary	Duration (both wellheads)
General Visual Inspection (GVI) survey campaign(s)	Annual GVI survey of the two suspended wells, including potential high-pressure cleaning of the well equipment to allow detailed inspection, as per in-force WOMP.	Up to 2 weeks. Frequency will be annual, with no more than 24 months between surveys.
Geotechnical and Geophysical survey campaign	Geophysical investigation to evaluate the sub-seabed conditions. Geotechnical survey to support a jack-up MODU.	Geophysical survey: up to 40 days. Geotechnical survey: up to 20 days.
Pre-decommissioning inspection	High-pressure cleaning of the wellhead. Removal of the corrosion cap. 3D external scan by camera or laser to ensure integrity. Corrosion cap replacement.	Up to 20 days.
Decommissioning activities	Activities summary	Duration (both wellheads)
Decommissioning campaign	Permanent P&A of the Petrel-3 and Petrel-4 wells.	Up to 60 days (~30 days per well). Intent is to do both wells in a single campaign but allow for a second campaign as contingency.
Post-decommissioning activities	Activities summary	Duration
As-left survey	GVI survey to demonstrate that the petroleum activities proposed have been completed and requirements have been met.	2 days per well. May be undertaken during the decommissioning campaign, following P&A.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 68 / 427
			Validity Status	Rev. No. B	

3.2 Monitoring and pre-decommissioning activities

3.2.1 GVI Survey Campaign

Eni will undertake a GVI survey of the two suspended wells in accordance with the in-force WOMP.

The visual monitoring is required to check the condition of seabed equipment left on the wells and confirm no loss of integrity. The monitoring will be undertaken using an ROV deployed from a support vessel. The survey will take up to 2 weeks.

Marine growth removal from the wellheads may be undertaken during the GVI survey. This involves high-pressure cleaning of the well equipment to allow detailed inspection in preparation for future decommissioning. The cleaning will use in situ saltwater using a high-pressure hose attachment on the ROV to remove marine growth. The water jetting will be limited to what is necessary to perform an effective inspection. Cleaning chemicals may also be used to remove marine growth (such as sulfamic acid, calcium wash and fluorescent dye).

3.2.2 Geophysical and Geotechnical survey campaign

A geophysical and geotechnical survey campaign will be required to identify sub-seabed features and hazards that may impact the exact positioning of the MODU. A geotechnical investigation is only required if a jack-up MODU will be utilised.

The geophysical elements of the surveys will be undertaken using a multi-purpose, survey vessel and are expected to last for approximately 20 days at each well location.

The geotechnical scopes may be undertaken by the same survey vessel (with reconfigured equipment) or potentially a separate survey vessel may be required in a separate campaign. The geotechnical scope is expected to take approximately 20 days to complete (10 days at each well location).

The GVI scope (Section 3.2.1) may be undertaken by the same geophysical and/or geotechnical survey vessels, capturing synergies and reduced overall vessel presence.

3.2.2.1 Geotechnical survey

Geotechnical data and soil samples will be acquired and sent to the laboratory to be analysed.

The proposed techniques for this investigation will include:

- Core hole sampling to acquire high quality soils for laboratory testing to inform the detailed engineering design in the field
- Piezo cone penetrometer testing (PCPT) to determine seabed strength and general ground stratigraphy.

A core hole is a type of borehole that is drilled to extract a cylindrical sample of rock or soil, known as a core. The process of core drilling involves using a diamond-tipped drill bit to cut a cylindrical section of rock or soil from the surrounding material. The core is then extracted from the hole and analysed in a laboratory to determine its physical and chemical properties. Up to 6 samples are typically collected at each well location, giving a total disturbance area of 2.4m² per well.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 69 / 427
				Validity Status	Rev. No. B	

PCPT involves the in-situ measurement of the resistance of ground to continuous penetration. This process involves lowering a frame to the seabed and pushing the PCPT unit into the sediment at a steady penetration rate. When the required penetration depth (6-30m) is reached, all equipment is withdrawn from the seabed. The PCPT frame is ~5m².

A small hole will remain in the seabed (~10cm diameter), which will eventually collapse and infill with the movement of seabed sediments.

3.2.2.2 Geophysical survey

The geophysical survey scope comprising of:

- Multibeam echo sounder (MBES)
- Side scan sonar (SSS)
- Sub-bottom profiling
- Magnetometer
- Ultra-short Baseline (USBL) Positioning System

MBES

Echo sounder surveys will enable the collection of bathymetry data and the correlation of depth information. This type of survey uses a sonar system to transmit short pulses of sound energy, analysing the return signal from the seafloor or other objects.

A multibeam echo sounder transmits at frequencies between 200kHz and 400kHz with pulse lengths from 10 to 500µs. Indicative sound output at the source is equipment dependent and may range from 163 to 190dB re 1µPa@1m.

Side-scan sonar

Use of side-scan sonar methods will enable Eni to identify seabed obstructions or features. This type of survey is a hydro-acoustic technique, comprising a set of transducers mounted on either side of a towed vehicle. The transducers produce high frequency pulses (either 120kHz or 410kHz) which reflect seabed features. Indicative sound output at source may range from 137 to 200dB re 1µPa@1m.

Sub-bottom profiler

Acoustic sub-bottom profiling systems are based on 'ping and chirp' type equipment, used to determine the physical properties of the sea floor and to image and characterize the geological formations below the sea floor.

This equipment is low frequency (1–16kHz) with an indicative sound output at source ranging from 142 to 200dB re 1µPa@1m.

Magnetometer

To check for the presence of any metal objects on or buried underneath the seabed, a magnetometer will be attached to either a hull mounted or towed on a cable behind the vessel. The magnetometer measures the earth's magnetic field and does not emit any sound pulses, therefore not presenting an environmental hazard or threat.

USBL

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 70 / 427
			Validity Status	Rev. No. B	

A complete USBL system consists of a transceiver, which is mounted on a pole under a vessel, and a transponder or responder on a towfish. A computer, or "topside unit", is used to calculate a position from the ranges and bearings measured by the transceiver.

An acoustic pulse is transmitted by the transceiver and detected by the subsea transponder, which replies with its own acoustic pulse. This return pulse is detected by the shipboard transceiver. The time from the transmission of the initial acoustic pulse until the reply is detected is measured by the USBL system and is converted into a range.

3.2.3 Pre-decommissioning inspection

A thorough inspection and assessment of the functional capability of the wellheads is needed to determine their ability to accept a MODU/vessel interface to enable safe well entry to assess and improve the downhole status.

The pre-decommissioning inspection will clean the wellheads and record various observations and measurements to assess the integrity status of the wellheads and inform MODU/vessel selection feasibility. The outcomes of this inspection will also inform final selection of the wellhead removal option, which is assessed in Section 3.6, however based on the current information the preferred option is assessed as being in-situ abandonment.

To remove the corrosion cap to evaluate and measure the internal profile of the wellhead prior to P&A, an ROV will first be deployed to clean the corrosion cap and wellhead of marine growth.

An ROV inspection survey conducted in 2021 identified significant marine growth on both wells' surface areas; therefore, high-pressure water jetting cleaning will be employed to clean the marine growth and allow detailed inspection and preparation for decommissioning. Mechanical cleaning may also be used (e.g., brushes, mechanical scraper). Cleaning chemicals may also be used to remove marine growth (such as sulfamic acid). The corrosion cap will be removed with the ROV and hydraulic system. Depending on the hydraulic system, some water-based hydraulic fluids may be discharged subsea (expected to be <1m³).

Once the corrosion cap is removed, seawater and biocide that were trapped underneath the corrosion cap will be released into the marine environment (expected to be <1m³).

After removing the corrosion cap, a 3D external scan of the wellheads will be undertaken by camera or laser. This activity will take up to 2 hours per well using an inspection-class ROV.

Once the 3D scan is completed, the ROV and hydraulic system will install a new corrosion cap. Biocide sticks and oxygen scavenger will be placed under the new corrosion cap. Depending on the hydraulic system, some water-based hydraulic fluid may be discharged subsea (<1m³).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 71 / 427
			Validity Status	Rev. No. B	

3.3 Decommissioning activities

3.3.1 MODU mobilisation and positioning

The MODU for the decommissioning campaign will either be a semisubmersible on dynamic positioning (DP), a DP-assisted moored semisubmersible, a conventionally moored semisubmersible without DP or a jack-up rig.

Semisubmersibles are a type of floating vessel that is supported primarily on large pontoon-like structures submerged below the sea surface. This type of MODU is positioned either by mooring using drag anchors (the moored option); or kept on location with DP using thrusters. A DP assisted moored semisubmersible only uses the DP to reduce strain on the mooring system during a poor weather event.

If a semisubmersible moored MODU is used, anchors may need to be pre-laid prior to the campaign. In this case, the anchors and associated mooring wires/chains are deployed to the seabed by two Anchor Handling Supply Vessels (AHSVs). For this option, 8-12 anchors will be launched, and mooring lines may drag along the seabed resulting in seabed disturbance. Mooring lines will extend from 1500m to 1800m from the well centre, with about 1000-1200m laying on the seabed. The anchor itself has a footprint of approximately 42m². The total direct seabed disturbance area from the MODU mooring system is estimated to be 1,944m² (assuming 12 mooring lines).

To accurately determine anchor positioning, transponders may be used if required. These devices provide GPS position and anchor orientation when interrogated acoustically. As they are attached directly to the anchor, their deployment and recovery coincide with the anchor installation process.

DP is used to help the MODU position in the correct location and will help the MODU to position in the exact location.

A jack-up rig is a type of mobile platform fitted with legs that are towed in the 'up' position. Once on location, the legs are extended down onto the seafloor, and the hull is then 'jacked-up' above the sea surface.

If the MODU is a jack-up, the 3 spud cans (on the bottom of the legs) will be lowered. These are expected to partially penetrate into the seabed (3-25m deep depending on soil properties). This creates a depression ~18m in diameter around each spud can, resulting in total area of ~750m² of temporary seabed disturbance at each well location.

3.3.2 Remove corrosion cap

Once the rig is positioned over the well, the corrosion cap running tool will be run down to the well and the corrosion cap will be engaged (with visuals and some guidance provided by the ROV). The corrosion cap will then be pulled from the wellhead.

Once the corrosion cap is removed, seawater and biocide that were trapped underneath the corrosion cap will be released into the marine environment (expected to be <1m³).

3.3.3 Establish secondary well control

Secondary well control is the backup system that activates when primary well control fails or is insufficient. It involves the use of mechanical barriers to seal off the wellbore and prevent the flow of formation fluids or gas. The main equipment for secondary well

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 72 / 427
				Validity Status	Rev. No. B	

control is the blowout preventer (BOP), which consists of several components, such as annular preventers, pipe rams, blind rams, and shear rams.

For the BOP installation from a semi-submersible, ROV-operated winches will be lowered with a crane and placed on the seabed. The winches are gravity-based and will be set out ~50m from the wellhead. Four winches will be used per well, and each winch is ~20.6m², giving a total footprint of ~ 83m² per well location.

If the clump weight style tether winch anchoring was not suitable for the seabed, pre-installed suction piles will be fixed by the Construction Support Vessel prior to the beginning of the decommissioning activities. This system is comprised by four suction cans, each one approximately 6m in diameter.

The use of the pre-installed suction pile will be determined by the geotechnical survey.

To latch the semi-submersible BOP, 2.5m³ of control fluid per well will be discharged to sea.

3.3.4 Drill out non-reservoir cement plugs (Petrel-4 only)

According to the in-force WOMP, Petrel-4 has two non-reservoir cement plugs that need to be drilled out to access the reservoir plug. The drill pipe and drill bit will be run from the MODU, following standard procedures for equipment setup and lowering the drill string into the wellbore.

Next, the well will be displaced with a viscous Water Based Mud (WBM) drilling fluid. This is a closed-circuit system with no planned discharges expected. No Synthetic Based Mud (SBM) will be used.

Non-reservoir cement plugs will be drilled out and the fluids and cement fragments (cement debris) will undergo treatment onboard the MODU using shale shakers. The treated fluids and cement debris will be discharged to the sea surface, with an estimated volume of 6m³. No hydrocarbons are expected in this discharge.

According to the in-force WOMP, the wells were displaced with an inhibited water-based drilling brine solution (WBM) after setting the final suspension plug in the 1980's. This brine solution will be treated over shale shakers onboard the MODU. The treated fluid will then be discharged to the sea surface, expected to be ~200m³ of fluid for both wells (100m³ per well).

3.3.5 Well integrity evaluation

The next step involves running a wireline logging tool from the MODU into the well to assess the quality of the cement behind the casing. After completion of the logging process, the obtained results will be analysed, and further actions will be decided.

Upon determining if the condition of the cement is inadequate, the next step will be guaranteeing the well integrity. To reinforce the bond, additional cement will be pumped into the annulus and approximately 20m³ of excess cement will be discharged to the seabed. Additionally, 8m³ of cement spacers will be used to assist with plug operations. The method to place the additional cement will be via perforations or section milling the casing (milling a circumferential hole in the casing).

Milling is typically performed at a controlled rate to enable metal swarf (metal chips) to be removed effectively from the milling site to minimise the risk of 'birds nesting' of

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 73 / 427
				Validity Status	Rev. No. B	

metal swarf, which may block fluid returns and jam equipment. Milling tools may become worn during milling operations and could require tripping for new/redressing about every 30 to 50m. As a result, the rate of milling is slower than normal drilling operations.

As the metal swarf within the milling fluids is hard and sharp, the fluids from the well will be passed through specific swarf handling equipment, which generally include magnets, that liberate metal from the fluid before being processed on the shale shakers. The milling fluids, including up to an additional 1.5m³ of swarf, 3m³ of drilled cement and 3.5m³ of formation rock, will be discharged overboard per 100m interval if milling is required. As a result of restricted milling speeds, the rate of swarf and cement will be generated over several days.

3.3.6 Set cement plug and permanent isolation of the reservoir

If the assessment of the annulus cement is considered satisfactory, the subsequent step involves setting new cement plugs inside the casing to secure the wellbore.

Prior to commencing the cementing operations, the cementing unit undergoes thorough testing to ensure its functionality and reliability. This testing process typically results in a discharge of ~2.4 to 8m³ of cement slurry to the sea, per well.

Upon completion of each cementing activity, the cementing head and blending tanks are cleaned, resulting in the release of less than 1m³ of cement washings to the sea. Additionally, as part of the process, less than 160m³ WBM will be displaced from the well to the MODU and subsequently discharged to the sea surface.

Towards the conclusion of the decommissioning operations, any excess of WBM, estimated at 500m³ per well, will be discharged at the sea surface. Furthermore, any excess of inhibited seawater (containing additives such as brines, seawater, hi-vis pills, water-based hydraulic fluid, biocide, oxygen scavenger and corrosion inhibitor) will also be discharged, typically around 25m³ per well.

3.3.7 Cut and recover casing

To facilitate setting a cement plug above permeable shallow sands the innermost casing(s) in the well may need to be removed. This is performed by cutting the casing with a casing cutting tool. The tool will perform the cut inside the well and no additional noise is expected from this operation. The casing cutting will take approximately 10 minutes to be completed. During the casing retrieval, the casing hanger seal is broken, and a small volume of gas might be released, approximately 1m³, that will be controlled through the rig's BOP and choke manifold.

This procedure may be executed once for Petrel-3 and twice for Petrel-4, as the latter has an additional casing that requires removal. Each instance will follow the same controlled release process through the choke manifold to manage any gas emissions.

The subsequent step involves displacing the WBM from the well by introducing inhibited seawater through the MODU, as described in Section 3.3.4 and setting new cement plugs, as described in Section 3.3.6.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 74 / 427
			Validity Status	Rev. No. B	

3.3.8 Recovery of secondary well control

After the P&A completion, the next step will be the recovery of the secondary well control system by unlatching the BOP and bringing it to the surface. During this process, approximately 2.5m³ of control fluid per well will be released to the sea.

Following the release of the control fluid, the BOP will be retrieved to the MODU.

Lifting equipment will be attached to the 4 winches, and they will be retrieved to the MODU. It is anticipated that there will be minor seabed disturbance as the winches are lifted, however, dredging or the use of Mass Flow Excavation is not expected.

3.3.9 Wellhead removal alternatives

Eni will undertake the pre-decommissioning inspection (Section 3.2.3) to assess wellhead integrity and then identify the appropriate MODU type. The outcomes of this inspection will inform final selection of the wellhead removal option, however based on the current information the preferred option is assessed as being in-situ abandonment. This assessment process is described in Section 3.6.

If full or partial removal are selected, these options are described below.

If wellhead removal is required, two options are being considered: full (Figure 3-6) and partial removal (Figure 3-7). Both options are described in the following sections.

3.3.9.1 Full removal: wellhead, TGB, PGB and guideposts recovery

The wellhead full removal can be performed using internal or external cutting options. Both methods are described below.

Internal Cutting

If the cutting is performed internally, the cutting tool is deployed to cut the casing, utilising seawater as a pumping fluid. During this process, its anticipated that some fluid trapped in the annulus will be discharged below or at the seabed surface. The content is expected to be the old water and biocide, likely the same as below the corrosion cap (see Section 3.3.2).

The internal cut will be made below or at the mudline, with cutting material discharged at the cut point below the seabed. A plume of debris, aerated water and sediment will surround the wellhead as it is cut and retrieved. No external discharge of swarf is expected. Some noise from the cutting tool is expected during this process, which is estimated to take 10 to 14 hours per well.

The Permanent Guide Base (PGB) and guideposts are attached to the wellhead, and will be retrieved together. However, as the Temporary Guide Base (TGB) may be corroded, there is a risk that it could separate during the lift. If this occurs, the TGB will likely be retrieved using a subsea basket, which will be placed on the seabed. If used, the basket has a footprint of 30m².

External cutting

The wellhead will be cut at the mudline with a diamond wire saw for this option. The diamond wire saw will generate underwater noise emissions (161.4dB re 1µPa) for

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 75 / 427
				Validity Status	Rev. No. B	

approximately 36 hours per wellhead. Swarf debris is expected to settle on the seabed near the wellhead.

Some excavation may be required around the wellhead to expose it and to allow the cutting tool to latch on. This will generate some minor localised seabed disturbance.

The TGB will be picked up with slings, placed in a basket and retrieved to the surface. The basket will be placed on the seabed, with a footprint of 30m². During an ROV survey in 2021 – the TGB was noted to be on an angle of approximately 40 degrees.

During the original TGB installation, bags of cement or barite may have been placed within the structure to help weigh it down. There is potential these bags may break apart during the TGB recovery.

Removing the cement patio is not proposed under the activities performed in this EP. According to previous wellhead surveys, this item is buried, and the removal would create additional seabed disturbance (Figure 3-6).

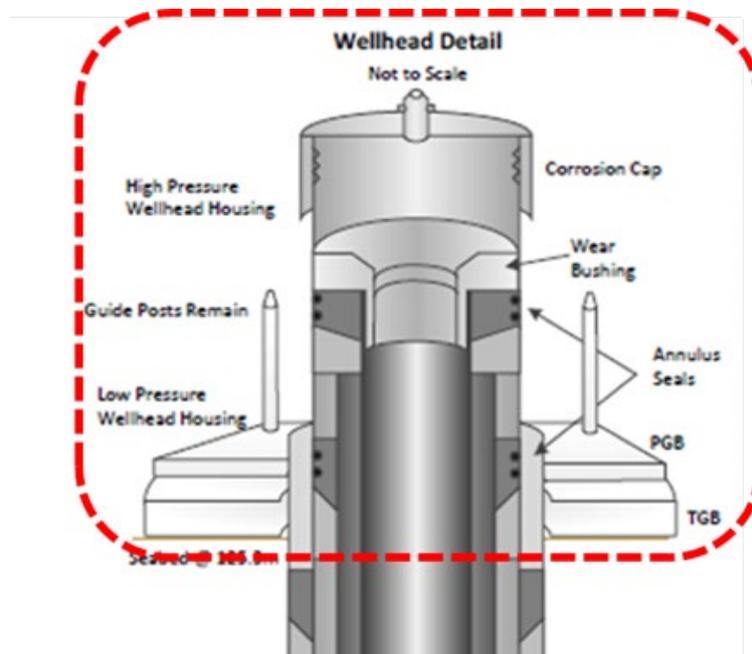


Figure 3-6: Full removal option - all items highlighted in red will be removed

3.3.9.2 Partial removal: TGB to remain in situ

As the TGB may be corroded, there is a risk of the infrastructure falling apart during the removal operations. Therefore, one of the options assessed is to leave the TGB in situ, recovering the PGB, the wellhead and the guideposts.

For this option, the internal cut will be made below or at the mudline, with cutting material discharged at the cut point below the seabed. A plume of debris, aerated water and sediment will surround the wellhead as it is cut and retrieved. No external discharge of swarf is expected. Some noise from the cutting tool is expected during this process, which is estimated to take 10 to 14 hours per well. The PGB and guideposts are attached to the wellhead and would be retrieved together; and the TGB would remain in situ (Figure 3-7).

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 76 / 427
				Validity Status	Rev. No. B	

If any cement or barite bags were used as ballast during installation, these will be removed if they are accessible, have visible integrity and it is deemed safe to do so. In this case, they will be removed via ROV and a subsea basket. Bags that are not deemed safe to remove will be left in-situ. The TGB and any cement or barite bags left in-situ would degrade over a long time period.

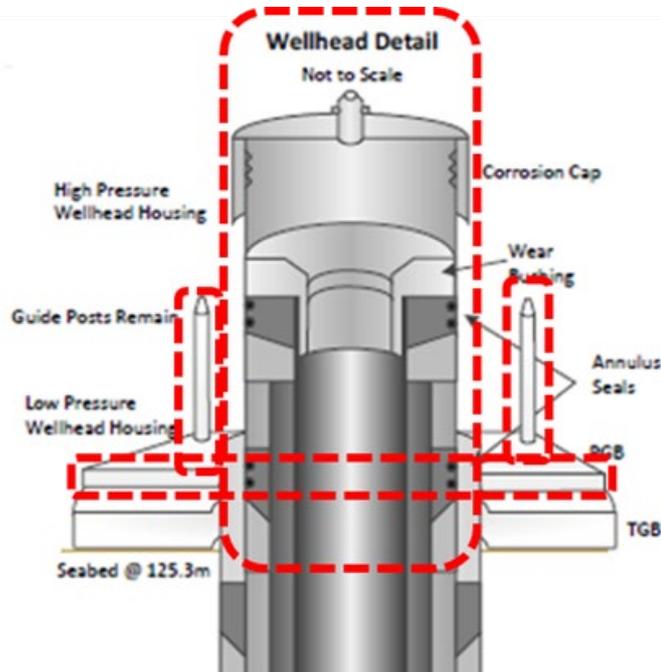
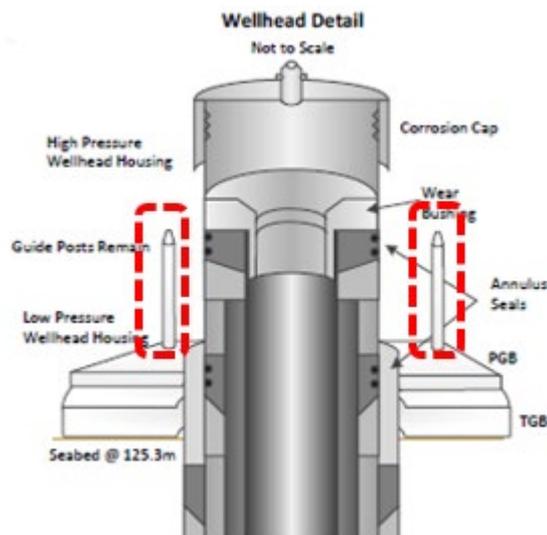


Figure 3-7: Partial removal option - all items highlighted in red will be removed

3.3.9.3 Leave in-situ

If the wellhead is left in situ, the guideposts would be cut and retrieved (Figure 3-8). The wellhead, PGB and TGB would remain in-situ.



 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 77 / 427
			Validity Status	Rev. No. B	

Figure 3-8: Leave in-situ option - all items highlighted in red will be removed

3.3.10 Demobilisation of MODU

Upon completion of the decommissioning scope at each well, the support vessels will commence the recovery of the anchors from the seabed and back to the MODU. Anchor recovery is covered in a mooring and demobilisation plan and considers the risk of collision with any subsea infrastructure remaining.

Pre-laid anchors may have been placed on the seabed prior to MODU arrival, and where used, these pre-laid anchors would be released and recovered by the support vessels at the end of the decommissioning campaign.

3.4 Post-decommissioning activities

3.4.1 As-left survey

An 'as left' ROV survey will be conducted. This could be undertaken in a separate campaign after the decommissioning campaign, and would take ~2 days; or could be undertaken at the end of the decommissioning campaign, following P&A.

A visual survey of the seabed near the MODU will be completed by an ROV to document seabed state. This will be undertaken by camera, similar to the wellhead inspection survey described in Section 3.2.1.

3.5 Support Operations

3.5.1 MODU Operations

Eni will employ a MODU for the decommissioning activities. The options considered are described below:

- Moored MODU (or DP-assisted moored MODU): The MODU is towed into position by AHSVs and moored to the seabed with anchors. Approximately 8-12 anchors are required, which are tethered to the MODU with mooring lines. The total estimated footprint is ~1,944m² per well location (assuming 12 mooring lines);
- DP MODU: The MODU uses dynamic positioning (DP) to hold itself in position. This option may not be feasible due to the Petrel field water depth, as the operating depth of DP MODUs is generally limited to deeper waters;
- Jack-up MODU: The MODU is towed into position and legs are lowered to the seabed, jacking up the MODU hull above sea level. Typically, 3 legs are used, each with an estimated footprint of ~750m² per well location; and
- Light well intervention vessel (LWIV): The LWIV uses DP to hold itself in position.

Non-decommissioning activities occurring on the MODU will include:

- Bunkering and bulk transfer of fuel, chemicals and supplies
- Transferring equipment and waste to supply vessels
- Discharges of:
 - sewage, greywater and food waste

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 78 / 427
			Validity Status	Rev. No. B	

- cooling water and reverse osmosis brine
- deck drainage and bilge
- atmospheric emissions
- Helicopter operations.

An estimated maximum of 140 personnel on board (POB) is expected on the MODU, depending on which MODU option is selected.

There is no formal Petroleum Safety Zone around the MODU, however exclusion and cautionary zones will be in place during activities.

3.5.2 Vessel Operations

Different vessel capabilities are required for the different campaigns if performed separately, including:

- Construction support vessel (CSV);
- Multipurpose survey vessel (geophysical and geotechnical survey);
- Small utility vessel (GVI inspection; as-left survey); and
- Anchor handling support vessel (AHSV).

Where vessel synergies are realised, lighter scopes may be performed with larger vessels (e.g., GVI during the G&G survey).

The activities prior to the decommissioning campaign require only one vessel to be mobilised at a time to undertake the campaigns. Vessels are likely to mobilise out of Darwin Harbour.

All vessels will be fuelled by marine diesel oil (MDO). Vessels may be refuelled in the Operational Area or within the nearest suitable harbour (likely Darwin).

During the decommissioning campaign, support vessels will bunker to the MODU.

Vessels transiting to and from the operational area are not included in the scope of this EP; and will operate under the Commonwealth *Navigation Act 2012* and are subject to existing Australian Maritime Law.

Table 3-4 presents a summary of type of vessel, campaign, and Persons on Board (POB).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 79 / 427
			Validity Status	Rev. No. B	

Table 3-4: Vessel type, campaign, and POB

Vessel	Purpose/Campaign	Approx POB
Small utility vessel	GVI survey campaign - wellhead inspection As-left survey campaign	15
Multipurpose survey vessel	Geophysical and Geotechnical survey campaign - samples collection	30
Construction support vessel	Pre-decommissioning vessel campaign - corrosion cap removal and wellhead inspection	30 - 50
AHSV	Decommissioning campaign - support operations Total of 3 AHSVs. Two will be used to tow and position the MODU and act as guard vessels. The third vessel is to re-supply.	42

Activities associated with these vessels include:

- Supporting MODU positioning;
- Transfer of equipment and supplies to and from the MODU or LWIV;
- Bunkering and bulk transfer of fuel, chemicals and supplies to the MODU or LWIV;
- Collecting and potentially treating waste from the MODU or LWIV;
- Discharges of:
 - sewage, greywater and food waste
 - cooling water and brine
 - deck drainage and bilge water
 - atmospheric emissions
- Assisting in emergency response situations; and
- Monitoring the 500m safety exclusion zone, if applicable.

Support vessels will not anchor in the Operational Area.

Vessels transiting to and from the operational area are not included in the scope of this EP; and will operate under the Commonwealth *Navigation Act 2012* and are subject to existing Australian Maritime Law.

3.5.3 ROV Operations

ROV operations are proposed to support the monitoring and pre-decommissioning campaigns and the decommissioning campaign. ROVs are unoccupied, underwater vehicles that are tethered to a support vessel. ROVs may be fitted with various equipment, including a video camera, lights, a manipulator or cutting arm, instruments and high-pressure cleaning equipment to undertake marine growth removal.

The ROV will be deployed and operated from support vessels and are not expected to 'wet park' on the seabed.

ROVs will be used for a variety of activities, including:

- Wellhead inspections (GVI);
- Wellhead and corrosion cap cleaning;

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 80 / 427
			Validity Status	Rev. No. B	

- Installation, functioning and retrieval of decommissioning and well evaluation equipment (e.g. guiding tooling into the wellhead);
- Monitoring of decommissioning operations (e.g. cutting of the wellhead); and
- Recovery of equipment.

3.5.4 Helicopter Operations

Helicopters will be used for crew change from the MODU during the decommissioning campaign only. The frequency of flights may be once per day, likely from Darwin. Refuelling helicopters offshore is not planned.

Helicopter operations are not required for the pre-decommissioning vessel campaigns.

3.6 Wellhead Removal Options Assessment

3.6.1 Overview

Section 572(3) of the OPGGS Act states that

"a titleholder must remove from the title area all structures that are, and all equipment and other property that is, neither used nor to be used in connection with the operations in which the titleholder is or will be engaged and that are authorised by the permit, lease, licence or authority."

DISER (2022) states that the base case is complete removal of all equipment and property. Options other than complete removal may be considered if the titleholder can demonstrate that the alternative decommissioning approach delivers equal or better environmental and safety outcomes compared to complete removal, and that the approach complies with all other requirements (DISER, 2022).

Section 572 Maintenance and Removal of Property Policy (NOPSEMA, 2022) states that:

"an EP must demonstrate that the alternative arrangement proposed delivers environmental performance outcomes that ensure that environmental impacts and risks will be reduced to ALARP, be of an acceptable level and are carried out in a manner consistent with the principles of ecologically sustainable development"

To inform the scope of the petroleum activity for this EP, Eni conducted an options assessment to evaluate wellhead decommissioning options, to evaluate each decommissioning option as per the Decommissioning Guidelines (DISER, 2022), considering environmental, technical feasibility, social, economic and safety criteria.

Eni will undertake the pre-abandonment inspection (Section 3.2.3) to assess well integrity and then identify the appropriate MODU type. The outcomes of this inspection will inform final selection of the wellhead removal option, however based on the current information the preferred option is identified below.

Wells will be permanently abandoned, regardless of wellhead removal option selected.

Stakeholders were provided information regarding the potential options (for information regarding consultation refer Section 5).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 81 / 427
			Validity Status	Rev. No. B	

Section 3.6.2 describes the wellhead removal options assessment process and the credible options to determine Eni's preferred option for the Petrel-3 and Petrel-4 wellheads.

3.6.2 Process

The process used to conduct the decommissioning options assessment for Petrel-3 and Petrel-4 wellheads comprised the following steps:

1. Identify credible decommissioning options;
2. Define suitable environmental, technical feasibility, social, economic and safety criteria and ratings; and
3. Rank the credible options against defined criteria.

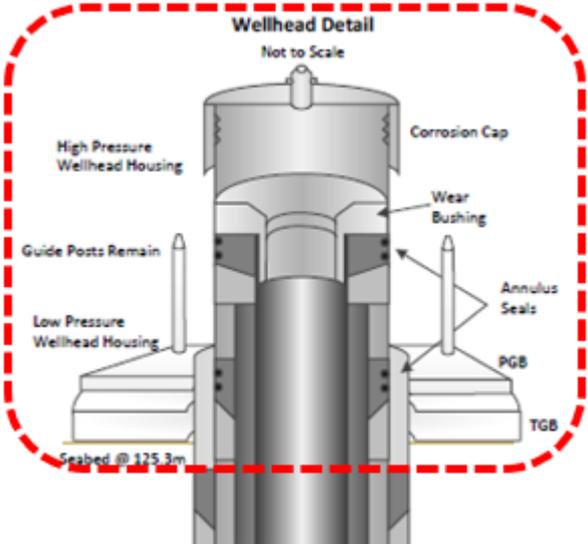
3.6.2.1 Decommissioning Options

The Petrel-3 and Petrel-4 wellheads are made of steel, are ~1m in diameter and protrude ~3m above the seabed. The wells were spudded in 1981 and 1988 respectively. They have been visually inspected multiple times by previous titleholders, and there is a limited understanding of their status and integrity.

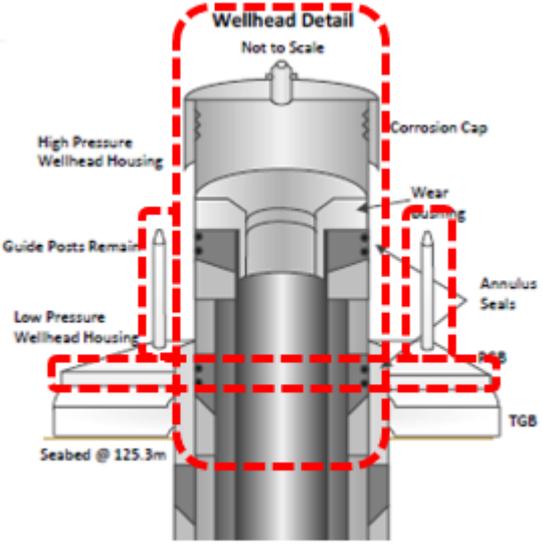
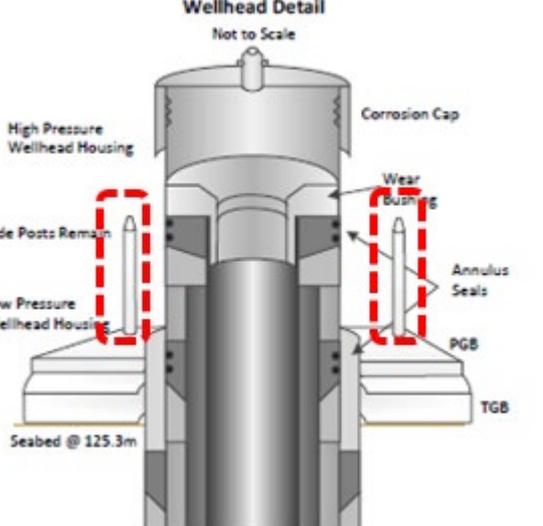
The screening assessment considered the credible wellhead removal options (Table 3-5). All items highlighted in red in Table 3-5 are removed during decommissioning activities.

Note that regardless of the option selected, both wells will be permanently abandoned as per Section 3.3.6.

Table 3-5 Wellhead removal options

Wellhead removal options	Description	Diagram
Full Removal	<p>The wellhead and all associated items would be retrieved.</p> <p>The wellhead would be cut at or below the mudline; by either internal cutting or external cutting (Section 3.3.9.1).</p>	 <p>The diagram, titled 'Wellhead Detail Not to Scale', shows a cross-section of a wellhead assembly. At the top is a 'Corrosion Cap'. Below it is the 'High Pressure Wellhead Housing', which contains a 'Wear Bushing'. The 'High Pressure Wellhead Housing' is connected to the 'Low Pressure Wellhead Housing'. 'Annulus Seals' are located between the two housings. Below the low pressure housing are 'PGB' (Pressure Guarding Bush) and 'TGB' (Tether Guard Bush) components. The entire wellhead assembly is situated above the 'Seabed @ 125.3m'. A red dashed line encloses the wellhead assembly, indicating the items to be removed.</p>

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 82 / 427
			Validity Status	Rev. No. B	

Wellhead removal options	Description	Diagram
Partial removal	<p>The wellhead and PGB will be removed, along with the guideposts (Section 3.3.9.2).</p> <p>The TGB will remain in situ. If any bags of cement or barite remain in the TGB, these would also remain in-situ.</p>	
Leave wellhead in-situ	<p>The wellheads have been in place since the 1980s.</p> <p>The pre-decommissioning and decommissioning campaigns would still be undertaken.</p> <p>If wellhead is left in situ, the guideposts would be cut and retrieved.</p> <p>The wellhead, PGB and TGB would remain in-situ.</p>	

3.6.3 Assessment Criteria and Ranking Details

Table 3-6 provides the criteria used for the options assessment; and Table 3-7 provides the ranking description.

Table 3-6 Assessment Criteria

Criteria		Description
Environmental	Water quality and sediment quality	<ul style="list-style-type: none"> Assessment of water and sediment quality.
	Ecological services	<ul style="list-style-type: none"> Assessment of biodiversity and habitat changes due to the physical presence of property, and seabed disturbance because of the petroleum activity.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 83 / 427
				Validity Status	Rev. No.	
					B	

Criteria		Description
	Emissions and discharges	<ul style="list-style-type: none"> Emissions such as light, noise, atmospheric and marine discharges.
	Waste	<ul style="list-style-type: none"> Volume and type of waste associated with offshore operations (e.g. landfill, recyclables).
Technical criteria	Engineering and execution complexity	<ul style="list-style-type: none"> The extent to which the option requires the use of proven technology. The ability to recover from unplanned excursions and complete the planned option.
Health and Safety	Risk to personnel (offshore and onshore)	<ul style="list-style-type: none"> Health and safety risks to company-related personnel both onshore (e.g. logistics) and offshore.
	Residual risk to other marine users	<ul style="list-style-type: none"> Health and safety risks to marine users such as commercial vessels, fishers and members of the public.
Social	Effect on commercial fisheries	<ul style="list-style-type: none"> Displacing commercial fisheries or affecting their catch.
	Cultural heritage	<ul style="list-style-type: none"> Assessment of impact to cultural heritage values
	Socioeconomic effects	<ul style="list-style-type: none"> Effects on local communities, recreational users, commercial activities.
Economic	Commercial	<ul style="list-style-type: none"> Capital expenditure and operating expenditure

Table 3-7 Qualitative ranking

Ranking	Description
	Least preferred option
	Neutral option
	Most preferred option

3.6.4 Options Evaluation

A workshop was held to evaluate the wellhead removal options for the Petrel-3 and Petrel-4 wellheads, to rank each option against the criteria identified in Table 3-6. Table 3-8 provides a summary of this assessment.

Table 3-8 Options assessment

Criteria	Sub-criteria	Wellhead Removal Option					
		Full removal		Partial removal		Leave in-situ	
		Justification	Ranking	Justification	Ranking	Justification	Ranking
Environment	Water quality and sediment quality	<p>During the cutting and retrieval process, a plume of debris, aerated water, sediment, and swarf will surround the wellhead. The internal cut will occur below or at the mudline and cutting material will be discharged at the cut point (below the seabed).</p> <p>No external discharge of swarf is anticipated, and seabed excavation is unnecessary.</p> <p>Furthermore, there will be the release of fluid within the annulus, consisting of aged seawater remnants from prior well plugging activities.</p> <p>Upon recovery of the TGB (Temporary Guide Base), the base and potentially contained bags of barite/cement serving as ballast may rupture, as the compartments are not sealed. The lifting process of the TGB could also displace the cement patio, potentially causing sediment disturbance and turbidity within a 2-3m radius. Additionally, the cement patio may break and descend back onto the seabed.</p>	Neutral	<p>During the cutting and retrieval process, a plume of debris, aerated water, sediment, and swarf will surround the wellhead. The internal cut will occur below or at the mudline and cutting material will be discharged at the cut point (below the seabed).</p> <p>No external discharge of swarf is anticipated, and seabed excavation is unnecessary.</p> <p>Furthermore, there will be the release of fluid within the annulus, consisting of aged seawater remnants from prior well plugging activities.</p> <p>The TGB being left in situ means any remaining bags of barite/cement serving as ballast would not be at risk of breaking open. However, over time, if left indefinitely, the TGB will degrade and release its contents. Both guide bases would have been painted white, but information on specific components, including epoxies, is currently unavailable.</p>	Neutral	<p>Leaving the wellhead in situ poses the risk of gradual degradation over time, potentially releasing corrosion materials into the marine environment.</p> <p>The exact composition of the Petrel-3 and Petrel-4 wellheads is unknown; however, wellheads of this era are known to be made of steel, including the Tern-1 (1971) and Frigate-1 (1978) wellheads located approximately 35km and 70km from Petrel-4 respectively.</p> <p>It's important to note that the wellhead, primarily composed of low alloy steel, contains iron as its primary component (98%). Iron, while toxic to marine organisms at high concentrations, is considered relatively benign at the levels typically released from steel degradation. No other materials are known, or have been identified, to be associated with the wellhead composition, for example residual surface coatings or plastic components.</p> <p>All iron oxides are included on the OSPAR PLONOR list (Substances Used and Discharged Offshore which Are Considered to Pose Little or No Risk to the Environment), indicating minimal environmental risk.</p> <p>The TGB being left in situ means any remaining bags within it would not be at risk of breaking open. However, over time, if left indefinitely, the TGB will degrade and release its contents. Both guide bases would have been painted white, but information on specific components, including epoxies, is currently unavailable.</p> <p>Both Petrel-3 and Petrel-4 were tested but were never produced. Therefore, no NORMs or Hg or residual contaminants are expected.</p>	Most preferred
	Ecological services	<p>No ongoing physical presence, apart from the cement patio, and no external discharge of swarf is anticipated.</p> <p>Seabed sediment disturbance will occur during the lifting of the cement patio and TGB, resulting in a disturbance footprint of ~30m². The footprint will be small and of a temporary nature.</p>	Most preferred	<p>No ongoing physical presence, apart from the cement patio and TGB, and no external discharge of swarf is anticipated.</p> <p>Seabed sediment disturbance will not occur as much on this option due to TGB and cement patio being left in situ.</p>	Most preferred	<p>Leaving the wellhead and guide bases in situ presents an opportunity to provide continued habitat for marine life around the wellhead structure, potentially offering environmental benefits. However, the local impact would likely be immaterial given the small size of the wellhead (1m wide, ~3m above the seabed).</p> <p>The decision involves leaving the wellhead and guide bases intact while removing the posts, which does not pose a significant risk as the structures left are not high-profile obstacles. Moreover, the wellhead has been in place for 40 years without any reported incidents.</p> <p>Although some marine growth will be removed, the area is characterized by low fishing intensity and lacks trawling activity, partly due to the water depth.</p>	Neutral
	Emissions	<p>Anticipated noise from the cutting tool is expected during the 10-14 hours of operation per well. However, cutting tool noise remains negligible in comparison to dynamic positioning (DP) activities.</p>	Neutral	<p>Anticipated noise from the cutting tool is expected during the 10-14 hours of operation per well. However, cutting tool noise remains negligible in comparison to dynamic positioning (DP) activities.</p>	Neutral	<p>The preferred option of leaving the equipment in situ is advantageous as it would generate less emissions during the decommissioning process.</p>	Most preferred

Criteria	Sub-criteria	Wellhead Removal Option					
		Full removal		Partial removal		Leave in-situ	
		Justification	Ranking	Justification	Ranking	Justification	Ranking
		<p>The campaign will be extended by a few days to accommodate cutting and retrieval tasks, as well as the use of baskets. Consequently, all emissions and discharges associated with the MODU and support vessels will also be prolonged.</p> <p>Further greenhouse gas emissions would be produced by onshore vehicles responsible for transporting the equipment to an appropriate waste facility.</p>		<p>The campaign will be extended by a few days to accommodate cutting and retrieval tasks, as well as the use of baskets. Consequently, all emissions and discharges associated with the MODU and support vessels will also be prolonged.</p> <p>Further greenhouse gas emissions would be produced by onshore vehicles responsible for transporting the equipment to an appropriate waste facility.</p>			
	Waste	<p>The material primarily consists of recyclable steel, and no contaminants such as mercury (Hg), NORMs, and hydrocarbons are expected as the wells were never produced.</p> <p>The waste volume is minimal, comprising approximately two sets of ~3m wellheads, guide bases, and cement patios.</p> <p>Recycling would require minimal processing energy, predominantly for cleaning marine growth.</p>	Neutral	<p>The material primarily consists of recyclable steel, and no contaminants such as mercury (Hg), NORMs, and hydrocarbons are expected as the wells were never produced.</p> <p>The waste volume is minimal, comprising approximately two sets of ~3m wellheads, guideposts and PGB.</p> <p>Recycling would require minimal processing energy, predominantly for cleaning marine growth.</p> <p>The main difference between partial removal and full removal is in the volume of concrete coming back to shore, which is considered minimal.</p>	Neutral	<p>Leaving the wellhead in situ is the preferred option as there would be no waste generated, except for the guideposts, which are essentially steel poles and, therefore, recyclable.</p> <p>This approach minimizes the environmental footprint associated with waste disposal onshore.</p>	Most preferred
Social	Effect on commercial fisheries	<p>With no continuous physical presence, except for the cement patio, a few additional days will be added to the campaign for complete removal, encompassing cutting and retrieval processes.</p> <p>During consultation, DPIRD advised that given the uncertainty of the overall integrity of the structures drilled in the 1980s, they request Eni considers risks associated with any partial removal options carefully, including in relation to the future risk of any structures or equipment left behind in the environment (Section 5). These impacts and risks are evaluated in this options assessment process.</p>	Neutral	<p>The PGB and cement patio will remain in place, a few additional days will still be added to the campaign for partial removal, encompassing cutting and retrieval processes. It is noted this additional time would be less than the time required for full removal.</p> <p>During consultation, DPIRD advised that given the uncertainty of the overall integrity of the structures drilled in the 1980s, they request Eni considers risks associated with any partial removal options carefully, including in relation to the future risk of any structures or equipment left behind in the environment (Section 5). These impacts and risks are evaluated in this options assessment process.</p>	Neutral	<p>Leaving the wellhead and guide bases in situ intact while removing the posts does not pose risks to commercial fisheries. as the structures left are not high-profile obstacles (~3m in height). Moreover, the wellhead has been in place for 40 years without any reported incidents.</p> <p>Commercial fisheries considered active that overlap the Operational Area are (Section 4.6.1):</p> <ul style="list-style-type: none"> • NT Aquarium: hand-held equipment - 1 licence • NT Demersal Fish: line and fish-trap gear area - 3 licences • NT Offshore Net and Line Fishery: demersal/pelagic long lines - 1 licence • NT Spanish Mackerel Fishery: troll/floating hand lines - 1 licence • Note fishing tour operators are permitted to fish in Territory waters, and do not have management areas. 1 licence. • WA Open Access in the North Coast Fishery - 6 vessels. <p>All fisheries overlapping the Operational Area have low fishing effort and are unlikely to interact with the Petrel-3 and Petrel-4 wellheads.</p> <p>The Commonwealth Northern Prawn Fishery (NPF) is a trawl fishery and management areas overlap with the Operational Area; however, the Operational Area does not fall within any fishing intensity area (Butler et al., 2023). None of the Northern-Territory-managed fisheries use bottom trawling as fishing method, which excludes the snagging risk.</p> <p>Engagement with the NPF confirmed there is no fishing effort in the immediate vicinity of the wellheads, and no concerns were raised by NPF or the Western Australian Fisheries Industry</p>	Neutral

Criteria	Sub-criteria	Wellhead Removal Option					
		Full removal		Partial removal		Leave in-situ	
		Justification	Ranking	Justification	Ranking	Justification	Ranking
						<p>Council (WAFIC) regarding the physical presence of the wellheads if left in-situ (Section 5).</p> <p>During consultation, DPIRD advised that given the uncertainty of the overall integrity of the structures drilled in the 1980s, they request Eni considers risks associated with any partial removal options carefully, including in relation to the future risk of any structures or equipment left behind in the environment (Section 5). These impacts and risks are evaluated in this options assessment process.</p>	
	Cultural heritage	<p>The activity will last only a few additional days.</p> <p>No concerns were raised by any First Nations relevant person during consultation about the decommissioning activity or removal options.</p>	Neutral	<p>The activity will last only a few additional days.</p> <p>No concerns were raised by any First Nations relevant person during consultation about the decommissioning activity or removal options.</p>	Neutral	<p>The wellheads have been in place for 40 years and no issues or concerns have been reported to date.</p> <p>No concerns were raised by any First Nations relevant person during consultation about the decommissioning activity or removal options.</p>	Neutral
	Other socio-economic effects	<p>Given the remote offshore location of the wellhead and the water depth, no socio-economic concerns have been identified.</p>	Neutral	<p>Given the remote offshore location of the wellhead and the water depth, no socio-economic concerns have been identified.</p>	Neutral	<p>Given the remote offshore location of the wellhead and the water depth, no socio-economic concerns have been identified.</p> <p>During consultation, the Wilderness Society advised that they object to anything other than complete removal of the wellheads (Section 5). Eni confirmed that a pre-decommissioning inspection needs to be conducted to assess the integrity of the structures and come to a final decision on the end state of the infrastructure; and that the options will be evaluated considering impacts to the environment, cultural heritage and other marine users; and as per regulatory requirements. These impacts and risks are evaluated in this options assessment process.</p>	Neutral

Criteria	Sub-criteria	Wellhead Removal Option					
		Full removal		Partial removal		Leave in-situ	
		Justification	Ranking	Justification	Ranking	Justification	Ranking
Technical feasibility	Engineering and execution complexity	<p>The internal cut will occur approximately at or below the mudline, with cutting material discharged at the cut point below the seabed.</p> <p>Potential bags of cement or barite may be within the TGB. Additionally, a minor debris field near the well locations, including items such as a small ladder, slings, and hoses, was observed during the ROV survey.</p> <p>Five campaigns would be necessary to P&A the wells and remove the wellheads: one for marine growth removal and wellhead inspection, two for seabed investigation (geophysical and geotechnical, with the latter required if using a jack-up rig), one pre-decommissioning, and one for P&A.</p> <p>An option is to lift the TGB/patio separately via vessel, although lifting the TGB poses technical challenges. The PGB is attached to the wellhead itself. TGBs were initially designed to be retrieved in the short term.</p> <p>While there are no new technologies involved, the cutting and removal of wellheads are routine activities in the industry. The technical challenge lies in the retrieval process. The equipment itself is relatively small, but the challenge arises from the age and integrity of the equipment when lifted.</p> <p>Integrity concerns and age of infrastructure recovery challenges result in the full removal of this equipment becoming challenging.</p>	Neutral	<p>The internal cut will occur approximately at or below the mudline, with cutting material discharged at the cut point below the seabed.</p> <p>Potential bags of cement or barite may be within the TGB, however in this option these would remain in situ. Additionally, a minor debris field near the well locations, including items such as a small ladder, slings, and hoses, was observed during the ROV survey.</p> <p>Five campaigns would be necessary to P&A the wells and remove the wellheads: one for marine growth removal and wellhead inspection, two for seabed investigation (geophysical and geotechnical, with the latter required if using a jack-up rig), one pre-decommissioning, and one for P&A.</p> <p>While there are no new technologies involved, the cutting and removal of wellheads are routine activities in the industry. The technical challenge lies in the retrieval process. The equipment itself is relatively small, but the challenge arises from the age and integrity of the equipment when lifted.</p> <p>This is considered a business-as-usual activity, with no significant changes in complexity or duration.</p>	Neutral	<p>Leave in-situ poses no technical risk, however the number of campaigns will remain the same as partial and full removal.</p> <p>Five campaigns may be necessary to P&A the wells: one for marine growth removal and wellhead inspection, two for seabed investigation (geophysical and geotechnical, with the latter required if using a jack-up rig), one pre-decommissioning, and one for P&A.</p> <p>Repurposing the wells as monitoring wells may also be considered therefore retaining the wellheads in place would facilitate future initiatives, including Carbon Capture and Storage (CCS).</p>	Most preferred
	Risk to personnel (offshore and onshore)	<p>Retrieving equipment and handling, transporting, and offloading it at the port or recycling facility introduces safety risks due to potential integrity issues resulting from prolonged immersion in water. There is a possibility that equipment may break apart during lifts, increasing safety concerns.</p> <p>Regarding the use of a basket for lifting, while it offers more safety as lifting points cannot be certified, its implementation is not confirmed and depends on further assessment of the wellhead's integrity. Eni has utilized baskets in the past, considering it a business-as-usual practice.</p> <p>Opting for wellhead removal would extend the exposure hours of offshore operations by a few days.</p>	Neutral	<p>Retrieving equipment and handling, transporting, and offloading it at the port or recycling facility introduces safety risks due to potential integrity issues resulting from prolonged immersion in water. There is a possibility that equipment may break apart during lifts, increasing safety concerns.</p> <p>Regarding the use of a basket for lifting, while it offers more safety as lifting points cannot be certified, its implementation is not confirmed and depends on further assessment of the wellhead's integrity. Eni has utilized baskets in the past, considering it a business-as-usual practice.</p> <p>Opting for partial removal would extend the exposure hours of offshore operations by a few days.</p>	Neutral	No additional health and safety risks in addition to the risks identified for decommissioning activities.	Most preferred
Health & Safety	Residual risk to other marine users	<p>There is minimal activity by other marine users in the Operational Area, confirmed by consultation (Section 5).</p> <p>Assume no ongoing risk to other marine users.</p>	Most preferred	<p>There is minimal activity by other marine users in the Operational Area, confirmed by consultation (Section 5).</p> <p>Assume no ongoing risk to other marine users.</p>	Most preferred	<p>There is minimal activity by other marine users in the Operational Area, confirmed by consultation (Section 5).</p> <p>At present there is a low fishing effort, and it is far from shore and too deep for recreational purposes. Engagement with the NPFI confirmed there is no fishing effort by the Northern Prawn Fishery (NPF) in the immediate vicinity of the wellheads and no</p>	Neutral

Criteria	Sub-criteria	Wellhead Removal Option					
		Full removal		Partial removal		Leave in-situ	
		Justification	Ranking	Justification	Ranking	Justification	Ranking
						<p>concerns were raised regarding the physical presence of the wellheads (Section 5).</p> <p>The wellheads have been in situ for 40 years and are marked on navigational charts.</p> <p>There are no CCS permits overlapping WA-6-R or NT/RL1 (P3 and P4). However, WA-548-P (Eni) overlaps both G-7-AP (INPEX) and G-11-AP (Santos) - refer to Section 4.6.5.</p> <p>Eni may undertake future development of the Petrel field.</p>	
Economic	Financial cost	<p>Couple of extra days for cutting/retrieval.</p> <p>The extension of a couple of extra days for cutting and retrieval operations, along with the requirement for additional equipment such as cutting tools, MODU (Mobile Offshore Drilling Unit) and vessels, and potentially a basket system, will result in additional costs. Assuming a rig cost of \$800,000 per day, the additional cost for both wells would amount to ~\$4 million in total.</p> <p>Additionally, there will be costs associated with the transport, recycling, and processing of the retrieved equipment.</p> <p>Regarding the risk of NOPSEMA not being satisfied with the decommissioning process, there is indeed a credible risk. If NOPSEMA determines that further remediation on the well is required, it could necessitate an additional MODU campaign, incurring a significant additional cost. This scenario highlights the importance of ensuring compliance with regulatory requirements and thorough execution of decommissioning procedures to mitigate such risks. It is however noted this risk exists in every option.</p>	Least preferred	<p>Couple of extra days for cutting/retrieval.</p> <p>The extension of a couple of extra days for cutting and retrieval operations, along with the requirement for additional equipment such as cutting tools, MODU and vessels, and potentially a basket system, will result in additional costs. Assuming a rig cost of \$800,000 per day, the additional cost for both wells would amount to ~\$4 million in total.</p> <p>Additionally, there will be costs associated with the transport, recycling, and processing of the retrieved equipment.</p> <p>Regarding the risk of NOPSEMA not being satisfied with the decommissioning process, there is indeed a credible risk. If NOPSEMA determines that further remediation on the well is required, it could necessitate an additional MODU campaign, incurring a significant additional cost. This scenario highlights the importance of ensuring compliance with regulatory requirements and thorough execution of decommissioning procedures to mitigate such risks. It is however noted this risk exists in every option.</p>	Least preferred	<p>The chosen option incurs no additional cost. However, if ongoing surveys are mandated, there will be supplementary expenses associated with these activities.</p> <p>Regarding the risk of NOPSEMA not being satisfied with the decommissioning process, there is indeed a credible risk. If NOPSEMA determines that further remediation on the well is required, it could necessitate an additional MODU campaign, incurring a significant additional cost. This scenario highlights the importance of ensuring compliance with regulatory requirements and thorough execution of decommissioning procedures to mitigate such risks.</p> <p>There's a credible risk if NOPSEMA is not satisfied with the decommissioning process or if future regulatory changes or opposition arise. In such scenarios, Eni might be compelled to return to the well site for wellhead removal or further remediation, incurring higher costs, including those associated with an additional MODU campaign. It is however noted this risk exists in every option.</p> <p>There is a potential requirement to develop a Sea Dumping Permit, which would involve costs for development and assessment.</p>	Most preferred

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 89 / 427
			Validity Status	Rev. No. B	

3.6.5 Recommendations

The pre-decommissioning inspection will clean the wellheads and record various observations and measurements to assess the integrity status of the wellheads and inform MODU/vessel selection feasibility. The outcomes of this inspection will also inform final selection of the wellhead removal option, which is assessed in Section 3.6.4, however based on the current information the preferred option is assessed as being in-situ abandonment.

The wellhead decommissioning options assessment identifies the leave in-situ option as the most preferred option. The leave in-situ option was ranked 'most preferred' for 6 of the 11 sub-criteria including water quality and sediment quality, emissions, waste, engineering and execution complexity, risk to personnel and financial cost. The full and partial removal options was ranked 'most preferred' for only two of the 11 sub-criteria for ecological services, and residual risk to other marine users. The full and partial removal options were ranked 'least preferred' for financial cost. The leave in-situ option had no rankings of 'least preferred' for any sub-criteria.

On this basis, the leave in-situ option is the preferred option overall. The wellhead decommissioning options assessment demonstrates that the leave in-situ option provides a better environmental, technically feasible, safe and economic outcome compared to the other options. However, the final decision on removal option can only be made following the pre-decommissioning inspection.

For the purposes of impact assessment in this EP, all options (full removal, partial removal and leave in-situ) have been assessed in Sections 7 and 8, with the worst-case option identified and assessed for each aspect where relevant.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 90 / 427
			Validity Status	Rev. No. B	

4 DESCRIPTION OF THE ENVIRONMENT

This section summarises the key physical, biological, socio-economic and cultural characteristics of the existing environment that may be affected (EMBA) by the activity, both from planned and unplanned events associated with the Petrel-3 and Petrel-4 petroleum activities. The EMBA by the petroleum activity within the scope of this EP has been defined as an area where a change to environmental receptors may potentially occur as a result of planned activities or unplanned events (Section 4.1).

The purpose of this section is to address the requirements of OPGGS(E) Sections 21(2) and 21(3) by describing the existing environment, including values and sensitivities that may be affected by both planned activities and unplanned events.

The description of the environment applies to two spatial areas:

1. the Operational Area (as defined in Section 3.1.2); and
2. the Environment that May Be Affected (EMBA) or low exposure zone (as defined in Section 4.1).

A third area is referenced in this EP. The zone of potential impact (ZPI) or moderate exposure zone (as defined below) is smaller than the EMBA and may be representative of an area of biological impact from hydrocarbons (refer Section 8.6 for more information).

The DCCEEW Protected Matters Search Tool (PMST) was used to identify MNES listed under the EPBC Act in the Operational Area and EMBA (Appendix B: Environmental Values and Sensitivities). This section is informed by this search.

4.1 Determination of the Environment that May be Affected

Stochastic hydrocarbon dispersion and fate modelling has been performed on the worst-case credible hydrocarbon releases from the petroleum activities (MDO spill of 300m³). The EMBA (Figure 4-1) encompasses the outermost boundary of the worst-case spatial extent of the credible hydrocarbon release scenarios, based on the hydrocarbon low exposure values presented in Table 4-1 (NOPSEMA, 2019).

Table 4-1: Summary of environmental hydrocarbon thresholds applied to the environment that may be affected and zone of potential impact

Zone	Surface hydrocarbon (g/m ²)	Entrained hydrocarbon (ppb)	Dissolved aromatic hydrocarbon (ppb)	Shoreline contact hydrocarbon (g/m ²)
EMBA (low exposure)	1	10	6	10
ZPI (moderate exposure)	10	100	50	10
High exposure area	50	-	400	1000

Stochastic modelling compensates for the uncertainty associated with any single hydrocarbon spill event, such that risk assessment and spill response planning are more robust and conservative by covering a wide range of possible scenarios. The footprint of an actual spill event is more accurately represented by only one of the simulations from the stochastic modelling, resulting in a much smaller spatial footprint.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 91 / 427
			Validity Status	Rev. No.	
				B	

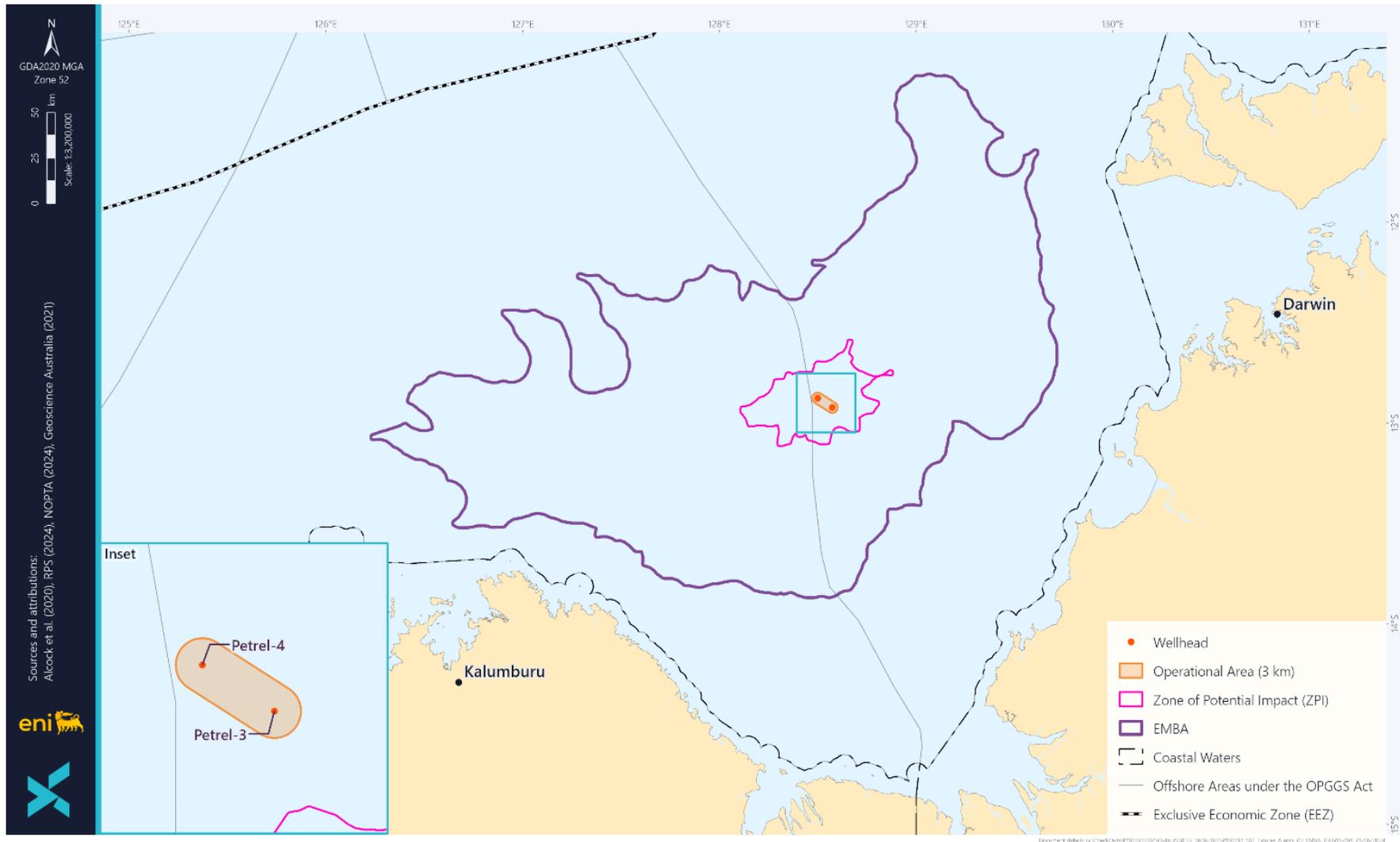


Figure 4-1: The environment that may be affected (EMBA) and the zone of potential impact (ZPI)

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 92 / 427
			Validity Status	Rev. No. B	

4.2 Particularly Relevant Values and Sensitivities of the Environment

This section summarises environmental values and sensitivities, including physical, biological, social, economic and cultural features within the marine and coastal environment that is relevant to the Operational Area and EMBA.

Table 4-2 and Table 4-3 summarise the MNES (EPBC Act) identified as potentially occurring within the Operational Area and EMBA, respectively, as determined by the PMST results (Appendix B: Environmental Values and Sensitivities).

Additional information about identified MNES is provided throughout this section and in Appendix B: Environmental Values and Sensitivities.

Table 4-2: Summary of matters of national environmental significance within the Operational Area

MNES	Number	Relevant section
World Heritage Properties	0	N/A
National Heritage Places	0	N/A
Wetlands of International Importance (Ramsar)	0	N/A
Commonwealth Marine Areas	0	N/A
Listed Threatened Ecological Communities	0	N/A
Listed Threatened Species	21	Section 4.4.3
Listed Migratory Species ¹	34	Section 4.4.3

Note 1: The EPBC Act categorise migratory and threatened species independently; therefore, migratory species can also be threatened.

Table 4-3: Summary of matters of national environmental significance within the environment that may be affected

MNES	Number	Relevant section
World Heritage Properties	0	N/A
National Heritage Places	0	N/A
Wetlands of International Importance (Ramsar)	0	N/A
Commonwealth Marine Areas	0	N/A
Listed Threatened Ecological Communities	0	N/A
Listed Threatened Species ¹	24	Section 4.4.3
Listed Migratory Species ^{1 2}	39	Section 4.4.3

Note 1: Terrestrial species (such as terrestrial mammals, reptiles, and bird species) that appear in the PMST results of the EMBA and do not have habitats along shorelines are not relevant to the Petrel-3 and Petrel-4 petroleum activities impacts and risks and have, therefore, not been included in these numbers.

Note 2: The EPBC Act categorise migratory and threatened species independently; therefore, migratory species can also be threatened.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 93 / 427
			Validity Status	Rev. No. B	

4.3 Physical Environment

4.3.1 Bioregions

The Petrel-3 and Petrel-4 Operational Area is within the Joseph Bonaparte Gulf (JBG), which lies over the Sahul Shelf in the Timor Sea from west of Bathurst Island to the eastern boundary of the North-west Marine Region. The JBG is characterised by complex geomorphology, including:

- coastal, shelf and basin features in the JBG;
- dissected banks, shoals, valleys, and terraces on the Van Diemen Rise; and
- deeper areas on the shelf slope to the north of the Van Diemen Rise.

The JBG is an area of soft substrate expanses with localised rocky outcrops, gravel deposits and raised features. Some areas contain high densities of pockmarks and sand waves, and calcarenite subcrops occur in the far northwest in an 11km wide palaeo channel. Benthic communities are exposed to strong tidal currents, high turbidity, and substantial sediment mobility, with disturbance decreasing offshore. The Operational Area is located in the upper (outer) reaches of the JBG, in an area of relatively flat, featureless seabed. Sediments are predominantly very soft, grey-green, gravelly sand clays (Woodside, 2004).

The Bonaparte Basin, which dominates the western portion of the JBG system, was formed between 15,000 to 13,000 years ago after rapid sea level rise inundated most of the Sahul Shelf, creating fully open marine conditions within the area known as the Bonaparte Depression. During the late quaternary, the environment of the Bonaparte Depression varied with fluctuating sea levels and climatic conditions, from an estuarine embayment to a shallow, freshwater lake. Extensive palaeo-river channels, some up to 150km long, 5km wide and 240m deep, connect the present-day basin to the old shoreline at the edge of the shelf (Heyward et al., 1997).

The JBG has been included in several continent-scale habitat classifications. The most recent being the Commonwealth bioregionalisation (IMCRA 4.0) which places most of the JBG into a single provincial bioregion the Northwest Shelf Transition. IMCRA further classifies Australia's marine regions into smaller meso scale bioregions, five of which overlap the JBG.

Northwest Shelf Transition

The Northwest Shelf Transition, which crosses both the NWMR and NMR, is characterised by the following biophysical features (DSEWPaC, 2012d):

- Located mostly on the continental shelf, with some small areas extending onto the continental slope;
- Water depths range between 0-330m, with the majority of the bioregion occurring in depths of 10-100m;
- The Indonesian Throughflow (ITF) is the dominant oceanographic feature and dominates the majority of the water column;
- The strength of the ITF and its influence in the bioregion varies seasonally in association with the North-west Monsoon;
- Contains a variety of geomorphic features, including terraces, plateaus, sand banks, canyons and reefs; and

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 94 / 427
				Validity Status	Rev. No. B	

- The biological communities of the North-west Shelf Transition are typical of Indo-west Pacific tropical flora and fauna and occur across a range of soft-bottom and harder substrate habitats.

Northern Shelf Province

The Northern Shelf Province contains submerged patch or barrier reefs in areas with approximately 30-50 m depth of water, these mainly occur around the margin of the Gulf of Carpentaria (which lies outside the combined EMBA) (DSEWPaC, 2012e). The majority of the province is relatively featureless with sandy and muddy sediments and this is expected to be the case for the small portion of the EMBA that overlaps the Northern Shelf Province.

The seabed and benthic habitats relevant to the Operational Area and EMBA are further described in Section 4.3.6.

4.3.2 Hydrography and oceanography

The oceanographic environment of the Joseph Bonaparte Gulf region is dominated by diurnal and semi-diurnal tides featuring some of the largest tidal energies observed anywhere in the world, with tidal sea level ranges exceeding 8 m along the western side of the Gulf during the spring tide (CSIRO, 2005). There is a well-defined spring-neap lunar cycle, with spring tides occurring two days after the new and full moon.

The average and maximum current speeds were 0.34 m/s and 1.26 m/s, respectively. During all seasons the dominant current directions were along the northwest-southeast axis as a result of the influence of the ebb and flood tide dynamics in the region (RPS, 2023).

Mean monthly surface temperatures in the Joseph Bonaparte Gulf region vary between about 26°C between July and August and 30°C during December (RPS, 2023).

The water column is well mixed all year round with respect to temperature, due to the large tidal range and strength of currents.

Baseline surveys carried out in 2010 and 2011 showed that seawater temperature was consistent across the area. Temperature gradients throughout the water column did not display a thermocline, instead a vertical gradient in seawater temperature was observed across in which temperature decreased progressively from the surface to the bottom ranging from 32.08°C to 25.3°C. Temperature was around 2°C greater in the second survey, attributed by the warmer and calmer conditions at the end of summer, when survey two was completed (ERM, 2011).

4.3.3 Bathymetry and seabed morphology

The majority of the Northwest Shelf Transition is located on the continental shelf, with only a small area extending onto the continental slope. This bioregion is characterised by complex geomorphology, including:

- Shelves, such as the Sahul Shelf and Arafura Shelf;
- Shoals, such as Flinders–Evans Shoals;
- Banks, such as Van Diemen Rise;
- Terraces;
- Basins, such as the Bonaparte Basin; and

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 95 / 427
				Validity Status	Rev. No. B	

- Valleys, such as the Bonaparte Depression and Malita Shelf Valley, which provides a significant connection between the Joseph Bonaparte Gulf and the Timor Trough.

Areas of patch, fringing and rocky reefs are found closer to the coast (DEWHA, 2008). The bioregion contains 90% of the Region's carbonate banks/shoals (Baker et al., 2008). Carbonate banks and shoals occur predominantly in the Joseph Bonaparte Gulf, and consist of a hard substrate with flat tops and steep sides that rise from water depths of 150–300m (Baker et al., 2008).

The Petrel field is located on one of the prominent geomorphic features of the bioregion, the Sahul Shelf (Baker et al., 2008).

The seabed across the Petrel field is generally smooth, with numerous isolated pockmarks up to 25m diameter and 0.5m deep, and several clusters of smaller, shallow pockmarks scattered across the site. A network of shallow channels meanders through the site. In the south-east there is a prominent central channel approximately 400m wide and 3m deep. This channel divides into a network of narrower channels between 100m and 300m wide and up to 1m deep (Fugro 2010).

The distribution of seabed sediments in the Joseph Bonaparte Gulf and contained within the Sahul Shelf reflect the present-day oceanographic condition and display a distinct seaward fining pattern (Baker et al., 2008). Seabed sediments are predominantly carbonate sands mostly transported by strong tidal currents and seasonal cyclones (van Andel and Veever 1967). Terrigenous sediments reach the Sahul Shelf from large river systems (e.g., Victoria River System) (Baker et al., 2008).

4.3.4 Water quality

Surface seawater salinities in the tropics are generally 34–35ppt and vary little between seasons (Middleton, 1995 in Shell 2009). Modelled seawater salinity profiles indicated that there is little variation in salinity through the water column, ranging between 33.7ppt (August) and 35.4ppt (March) (RPS, 2023). This is supported by field data showing that salinity and specific conductivity were similar across the Petrel field and along the pipeline route, and found to slightly increase with depth (ERM, 2011). There is a small variation in salinity and specific conductivity between seasonal surveys with a slight increase in both parameters in the dry season (ERM, 2011).

Dissolved oxygen (DO) concentration ranged from a minimum of 3.64mg/L (49.8%) near the seabed to 7.80mg/L (117.2%) at the sea surface. DO was found to decrease with depth consistently across all fields. Such variation is often linked to higher photosynthetic activity at the seawater surface and wave and wind generated mixing. These values are typical of unpolluted seawater (ERM, 2011).

Total suspended solids (TSS) were largely not detected across the area during the time of sampling. The samples that did report detections, had concentrations marginally above the laboratory LOR of 5mg/L with no differences observed between surface and bottom measurements. These data represent relatively low suspended solid values as would be expected for offshore waters in the region (ERM, 2011).

Surveys completed in 2010 and 2011 showed that water quality in the Petrel field is relatively pristine with results typical of nutrient poor (oligotrophic) offshore northern Australian waters (ERM, 2011):

- Total petroleum hydrocarbons, BTEX (benzene, toluene, ethylbenzene, and xylenes) and polyaromatic hydrocarbons (PAH) were not detected in any samples from across all fields.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 96 / 427
				Validity Status	Rev. No. B	

- There was no major spatial variation evident among fields, or difference in metal concentration between the surface and bottom measurements. Concentration of the metals analysed were all below their respective trigger values as defined by the Australian and New Zealand Environment Conservation Council (ANZECC, 2000).
- The concentration of radionuclides (radium 226 and 228) was relatively uniform and low across all fields and depths with concentrations either below or marginally above the limit of reporting (LOR) of 0.03 Bq/L.
- The concentration of nutrients (nitrogen and phosphorous) were similar and low across all fields and depths with mean nitrate + nitrite as N, TKN, and phosphorous concentrations either being below or only slightly above the laboratory LOR.
- Chlorophyll was not detected in any samples from across all fields with all samples reporting concentrations below the laboratory LOR.
- Dissolved oxygen decreases very steadily with increasing water depth through the water column.

4.3.5 Air quality

There is currently no air quality data recorded within the vicinity of the Operational Area. However, given the distance from land, air quality is expected to be relatively high. Potential sources of air pollution associated with anthropogenic influences are expected to be emissions generated by shipping, and oil and gas activities, and therefore considered to be localised in relation to the regional setting.

4.3.6 Benthic habitats and communities

Sediments of the Bonaparte Gulf are dominated by biogenic gravels and sands, grading to muds offshore (Galaiduk et al 2018).

Previous benthic habitat surveys indicated that the soft sediment seabed is comprised primarily of sand, coarse shell fragment and silt. Sediments in the Petrel field were dominated by sand with similar gravel, silt and clay proportions (ERM, 2011). Benthic habitats are defined as subtidal habitats that occur below the lowest astronomical tide and are driven by light availability. Unvegetated soft sediments are a widespread habitat in both intertidal and subtidal areas, particularly in areas beyond the photic zone. The biodiversity and productivity can vary depending upon depth, light, temperature and the type of sediment present (Brewer et al. 2007).

Concentrations of analytes including metals, nutrients, TOC, and radionuclides co-varied with the particle size distribution data (ERM, 2011). The results from sediment quality sampling are summarised below:

- Low concentrations of metals were generally reported across the Petrel field. The mean concentration of all metals exhibited concentrations below the trigger values defined in the ANZECC guidelines (ANZECC, 2000). The mean concentration of metals at Petrel was relatively uniform.
- The mean concentration of nitrate and nitrite as nitrogen was similar across the fields. A high level of variability was evident within each field for TKN and TP as expressed by the high standard deviations.
- Petrel had similar TOC concentrations with mean concentrations of 0.25% wt \pm 0.07 and 0.23% \pm 0.05.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 97 / 427
			Validity Status	Rev. No. B	

- TPH, BTEX, PAH and tributyltin were not detected in any sample across the fields with all records below the laboratory LOR.

4.3.7 Existing Infrastructure

A full field site survey was undertaken in 2010 when the Petrel field was under the operatorship of Santos. This site survey was undertaken to confirm the bathymetry, shallow geological profiles, confirm the location of existing wells and the location of any debris within the field location (Fugro Survey, 2013; Tamboritha Survey, 2021).

The existing Petrel-1, 1A, 2, 5 and 6 abandoned wells and the suspended wells Petrel-3 and Petrel-4 were all identified inside the survey area.

This survey identified a debris field in the vicinity of the wells (concentrated around Petrel-1 and 1A). It was not clear what this debris was but it was not considered to possess any threat to the surrounding wells (Fugro Survey, 2013). Proximity of the debris found during the 2010 survey to the wells under this EP is shown in Table 4-4, and proximity to the shipwreck (the Sedco Helen).

Table 4-4: Debris Field Summary (Fugro Survey, 2013 & Tamboritha Survey, 2021)

Item	Distance from Petrel-3 (km)	Distance from Petrel-4 (km)
Debris (riser at Petrel-1)	15.9	7.3
Debris (riser at Petrel-1)	15.9	7.3
Debris (small item)	17.1	8.3
Debris (near Petrel-3) *	0.1	9.6
Debris (metal pad-eye)	0.1	9.6
Debris (near Petrel-6)	19.3	10.5
Debris (wire rope or similar)	15.0	6.2
Debris (near <i>Sedco Helen</i>)	15.0	6.4
Wreck of the <i>Sedco Helen</i>	15.1	6.4

*Bulk transfer hose or similar

4.4 Ecological Environment

4.4.1 Plankton

Plankton species, including both phytoplankton and zooplankton, are a key component in oceanic food chains. Scientists classify plankton in several ways, including by size, type, and how long they spend drifting. But the most basic categories divide plankton into two groups: phytoplankton (plants) and zooplankton (animals).

Phytoplankton are autotrophic planktonic organisms living within the photic zone; and are the start of the food chain in the ocean (McClatchie et al., 2006). Phytoplankton are dependent on oceanographic processes (e.g. currents and vertical mixing), that supply nutrients needed for photosynthesis. Thus, phytoplankton biomass is typically variable (spatially and temporally), but greatest in areas of upwelling, or in shallow waters where nutrient levels are high.

Phytoplankton assemblages recorded across the Petrel field was characteristic of offshore tropical waters. Phytoplankton assemblages were dominated by the cyanobacteria during the

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 98 / 427
				Validity Status	Rev. No. B	

2010 wet season survey, which comprised 99.7% of identified algal cells. During 2011 dry season survey, the phytoplankton assemblage was largely dominated by the diatoms (Bacillariophyceae) (ERM, 2011).

Zooplankton is the faunal component of plankton, comprised of small protozoa, crustaceans (e.g. krill) and the eggs and larvae from larger animals. Zooplankton includes species that drift with the currents and also those that are motile.

Sampling indicated that larval fishes during both seasons were found to be dominated by the Serranidae (Cods) and Lutjanidae (Snappers), both of which are species of interest targeted by commercial fisheries in the region. Larval fish density also varied seasonally with the 2011 dry season recording highest densities of larval fishes in the zooplankton. This seasonal effect is consistent with the notion of an extended spawning season (and possibly planktonic larval duration) of the reef species dominating the larval fish assemblage in the study area at this time.

Zooplankton sampling indicated that copepods represented the most dominant group within the macro-zooplankton assemblage in both the 2010 wet season and 2011 dry season. The density of these macro-zooplankton varied significantly among seasons, with an overall greater density of these animals recorded during 2010 wet season. The greater density of macro-zooplankton may be indicative of higher primary productivity in the summer months fuelling population increases of the zooplankton (secondary productivity) at this time. Overall zooplankton density varied at the level of the assemblage with statistically distinct assemblages found within both the 2010 wet season and 2011 dry season.

4.4.2 Marine invertebrates

Marine invertebrates comprise a variety of different organisms that can live in either the benthic or pelagic zone (Brewer et al. 2007). The most common marine invertebrates include:

- Sponges;
- Cnidarians (e.g. hydroids, anemones, jellyfish);
- Marine worms;
- Arthropods (e.g. krill, prawn, crabs, lobster);
- Molluscs (e.g. nudibranch, sea slugs, mussels, oysters, squid, octopus);
- Echinoderms (e.g. sea stars, sea urchins, sea cucumbers);
- Hemichordates (e.g. acorn worms); and
- Lophophorates (e.g. bryozoans).

Commercially important invertebrates for fisheries include prawn species (see Section 4.5).

The benthic habitat within the EMBA is soft sediment comprised primarily of sand, coarse shell fragment and silt. It is covered by featureless, sandy seabed which is sparsely covered by sessile organisms dominated by filter-feeding gorgonians, sponges, echinoderms and molluscs (ERM, 2011). Carbonate bank substrates associated with the carbonate bank and terrace system of the Sahul Shelf KEF, carbonate bank and terrace system of the Van Diemen Rise KEF, and pinnacles of the Bonaparte basin KEF support more diverse sessile benthos such as hard and soft corals, encrusting sponges, macroalgae and gorgonians (Brewer et al. 2007). A benthic habitat survey conducted in November 2011 recorded benthic infauna assemblages across the Petrel field similar to the results of other studies in the bio-region in terms of the species, diversity and biomass (ERM, 2011; Jones and Morgan, 1994). Infauna

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 99 / 427
				Validity Status	Rev. No. B	

is documented to occur in coastal waters to depths of approximately 200m, and are widely distributed through subtropical and tropical waters of Western Australia (ERM, 2011; Jones and Morgan 1994).

A total of 18 benthic habitat sites were sampled in November 2011 with depths ranging from 85-99m. Benthic habitat mapping found that generally the seabed composition was similar to other studies conducted within the Bonaparte Gulf, with sparse sessile benthos except for an unidentified white colonial organism (presently recorded as a hydrozoa) across all sampled fields (ERM, 2011). Estimated percentage cover was low for octocorals and sponges (~2% for each) while the unidentified hydroid comprised between 11-30% at all sites. In soft sediment benthic habitats, infauna represented the predominant seabed biota as there was limited hard substrates available for sessile epibenthic fauna to attach to. Polychaete worms occurring within the top centimetres of the soft substrate were the dominant infauna communities and are an important component of the benthic community serving as a food source for demersal fish (ERM, 2011).

There are no protected invertebrates listed in the PMST search.

4.4.3 Threatened and Migratory Fauna

A search of the EPBC PMST was undertaken using areas that covered the full extent of the Operational Area and EMBA, respectively, to identify MNES under the EPBC Act (DCCEEW, 2024). Full PMST Reports for the Operational Area and EMBA are included in Appendix B: Environmental Values and Sensitivities. The PMST results identified 21 marine fauna species listed as 'threatened', 34 marine fauna species listed as 'migratory', and 17 listed as 'marine' within the Operational Area. In the ZPI, there were 21 marine fauna species listed as 'threatened', 35 marine fauna species listed as 'migratory', and 64 listed as 'marine' within the EMBA. In the EMBA, there were 24 marine fauna species listed as 'threatened', 39 marine fauna species listed as 'migratory', and 74 listed as 'marine' within the EMBA (Table 4-5). All species listed as 'threatened' under the EPBC Act are also 'Protected' under State legislation under the *Biodiversity Conservation Act 2016*.

An examination of the species profile and threats database (DCCEEW, 2024) showed some threatened species were not expected to occur in significant numbers in the marine and coastal environments (within the EMBA) due to their terrestrial distributions. Terrestrial species (such as terrestrial mammals, reptiles and bird species) that appear in the PMST of the EMBA and do not have habitats along shorelines are not relevant to the petroleum activities and have been excluded from Table 4-5.

Species with designated BIAs and Habitat Critical to their Survival (Habitat Critical) overlapping the EMBA and Operational Area have been identified in Section 4.4.4 and Section 4.4.4.1, respectively.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 100 / 427
			Validity Status	Rev. No.	
				B	

Table 4-5: Commonwealth listed threatened and migratory species within the Operational Area, ZPI and EMBA

Scientific Name	Common Name	Threatened Status	Migratory Category	Listed Marine Species	Presence in OA	Presence in ZPI	Presence in EMBA
Birds							
<i>Anous stolidus</i>	Common noddy	N/A	Migratory Marine Birds	Listed	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Actitis hypoleucos</i>	Common sandpiper	N/A	Migratory Wetlands Species	Listed	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Calidris ferruginea</i>	Curlew sandpiper	Critically Endangered	Migratory Wetlands Species	Listed	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Numenius madagascariensis</i>	Eastern curlew, far eastern curlew	Critically Endangered	Migratory Wetlands Species	Listed	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Fregata minor</i>	Great frigatebird, greater frigatebird	N/A	Migratory Marine Birds	Listed	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat likely to occur within area
<i>Thalasseus bengalensis</i>	Lesser crested tern	N/A	N/A	Listed	N/A	N/A	Breeding known to occur within area
<i>Fregata ariel</i>	Lesser frigatebird, least frigatebird	N/A	Migratory Marine Birds	Listed	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
<i>Calidris melanotos</i>	Pectoral sandpiper	N/A	Migratory Wetlands Species	Listed	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 101 / 427
				Validity Status	Rev. No.	
					B	

Scientific Name	Common Name	Threatened Status	Migratory Category	Listed Marine Species	Presence in OA	Presence in ZPI	Presence in EMBA
<i>Calidris canutus</i>	Red knot, knot	Vulnerable	Migratory Wetlands Species	Listed	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Phaethon rubricauda westralis</i>	Red-tailed tropicbird (Indian Ocean), Indian Ocean red-tailed tropicbird	Endangered	N/A	N/A	Species or species habitat may occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
<i>Calidris acuminata</i>	Sharp-tailed sandpiper	Vulnerable	Migratory Wetlands Species	Listed	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Calonectris leucomelas</i>	Streaked shearwater	N/A	Migratory Marine Birds	Listed	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat known to occur within area
<i>Phaethon lepturus</i>	White-tailed tropicbird	N/A	Migratory Marine Birds	Listed	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat likely to occur within area
Fish, Sharks and Rays							
<i>Corythoichthys intestinalis</i>	Australian messmate pipefish, banded pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Doryrhamphus dactyliophorus</i>	Banded pipefish, ringed pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Hippichthys penicillus</i>	Beady pipefish, steep-nosed pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 102 / 427
				Validity Status	Rev. No.	
					B	

Scientific Name	Common Name	Threatened Status	Migratory Category	Listed Marine Species	Presence in OA	Presence in ZPI	Presence in EMBA
<i>Trachyrhamphus bicoarctatus</i>	Bentstick pipefish, bend stick pipefish, short-tailed pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Hippichthys cyanospilos</i>	Blue-speckled pipefish, blue-spotted pipefish	N/A	N/A	Listed	N/A	N/A	Species or species habitat may occur within area
<i>Doryrhamphus excisus</i>	Bluestripe pipefish, Indian blue-stripe pipefish, Pacific blue-stripe Pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Halicampus brocki</i>	Brock's pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Doryrhamphus janssi</i>	Cleaner pipefish, Janss' pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Bhanotia fasciolata</i>	Corrugated pipefish, barbed pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Syngnathoides biaculeatus</i>	Double-end pipehorse, double-ended pipehorse, alligator pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 103 / 427
			Validity Status	Rev. No.	
				B	

Scientific Name	Common Name	Threatened Status	Migratory Category	Listed Marine Species	Presence in OA	Presence in ZPI	Presence in EMBA
<i>Pristis clavata</i>	Dwarf sawfish, Queensland sawfish	Vulnerable	Migratory Marine Species	N/A	N/A	N/A	Species or species habitat known to occur within area
<i>Corythoichthys amplexus</i>	Fijian banded pipefish, brown-banded pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Hippocampus planifrons</i>	Flat-face seahorse	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Pristis pristis</i>	Freshwater sawfish, largetooth sawfish, river sawfish, Leichhardt's sawfish, northern sawfish	Vulnerable	Migratory Marine Species	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Mobula birostris</i>	Giant manta ray	N/A	Migratory Marine Species	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat likely to occur within area
<i>Festucalex cinctus</i>	Girdled pipefish	N/A	N/A	Listed	N/A	N/A	Species or species habitat may occur within area
<i>Pristis zijsron</i>	Green sawfish, dindagubba, narrownout sawfish	Vulnerable	Migratory Marine Species	N/A	Species or species habitat known to occur within area	Species or species habitat known to occur within area	Species or species habitat known to occur within area
<i>Solegnathus lettiensis</i>	Gunther's pipehorse,	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area

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	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 104 / 427
				Validity Status	Rev. No.	
					B	

Scientific Name	Common Name	Threatened Status	Migratory Category	Listed Marine Species	Presence in OA	Presence in ZPI	Presence in EMBA
	Indonesian pipefish						
<i>Hippocampus spinosissimus</i>	Hedgehog seahorse	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Isurus paucus</i>	Longfin mako	N/A	Migratory Marine Species	N/A	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
<i>Halicampus grayi</i>	Mud pipefish, Gray's pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Anoxypristis cuspidata</i>	Narrow sawfish, knifetooth sawfish	N/A	Migratory Marine Species	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat likely to occur within area
<i>Glyphis garricki</i>	Northern river shark, New Guinea river shark	Endangered	N/A	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Carcharhinus longimanus</i>	Oceanic whitetip shark	N/A	Migratory Marine Species	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Choeroichthys brachysoma</i>	Pacific short-bodied pipefish, short-bodied pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Solegnathus hardwickii</i>	Pallid pipehorse, Hardwick's pipehorse	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 105 / 427
				Validity Status	Rev. No.	
					B	

Scientific Name	Common Name	Threatened Status	Migratory Category	Listed Marine Species	Presence in OA	Presence in ZPI	Presence in EMBA
<i>Choeroichthys suillus</i>	Pig-snouted pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Halicampus dunckeri</i>	Red-hair pipefish, Duncker's pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Mobula alfredi</i>	Reef manta ray, coastal manta ray	N/A	Migratory Marine Species	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat likely to occur within area
<i>Corythoichthys haematopterus</i>	Reef-top pipefish	N/A	N/A	Listed	N/A	N/A	Species or species habitat may occur within area
<i>Corythoichthys flavofasciatus</i>	Reticulate pipefish, yellow-banded pipefish, network pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Haliichthys taeniophorus</i>	Ribboned pipehorse, ribboned seadragon	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Solenostomus cyanopterus</i>	Robust ghostpipefish, blue-finned ghost Pipefish,	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Cosmocampus banneri</i>	Roughridge pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 106 / 427
				Validity Status	Rev. No.	
					B	

Scientific Name	Common Name	Threatened Status	Migratory Category	Listed Marine Species	Presence in OA	Presence in ZPI	Presence in EMBA
<i>Sphyrna lewini</i>	Scalloped hammerhead	Conservation Dependent	N/A	N/A	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat known to occur within area
<i>Corythoichthys schultzi</i>	Schultz's pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Isurus oxyrinchus</i>	Shortfin mako, mako shark	N/A	Migratory Marine Species	N/A	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
<i>Hippichthys parvicarinatus</i>	Short-keel pipefish, short-keeled pipefish	N/A	N/A	Listed	N/A	N/A	Species or species habitat may occur within area
<i>Glyphis glyphis</i>	Speartooth shark	Critically Endangered	N/A	N/A	N/A	N/A	Species or species habitat may occur within area
<i>Hippocampus histrix</i>	Spiny seahorse, thorny seahorse	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Halicampus spinirostris</i>	Spiny-snout pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Hippocampus kuda</i>	Spotted seahorse, yellow seahorse	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Trachyrhamphus longirostris</i>	Straightstick pipefish, long-nosed pipefish, straight stick pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 107 / 427
			Validity Status	Rev. No.	
				B	

Scientific Name	Common Name	Threatened Status	Migratory Category	Listed Marine Species	Presence in OA	Presence in ZPI	Presence in EMBA
<i>Campichthys tricarinatus</i>	Three-keel pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Micrognathus micronotopterus</i>	Tidepool pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Filicampus tigris</i>	Tiger pipefish	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Rhincodon typus</i>	Whale shark	Vulnerable	Migratory Marine Species	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Carcharodon carcharias</i>	White shark, great white Shark	Vulnerable	Migratory Marine Species	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
Marine Mammals							
<i>Sousa sahalensis</i>	Australian humpback dolphin	N/A	Migratory Marine Species	N/A	N/A	N/A	Species or species habitat may occur within area
<i>Orcaella heinsohni</i>	Australian snubfin dolphin	N/A	Migratory Marine Species	N/A	N/A	N/A	Species or species habitat likely to occur within area
<i>Balaenoptera musculus</i>	Blue whale	Endangered	Migratory Marine Species	N/A	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
<i>Tursiops truncatus s. str.</i>	Bottlenose dolphin	N/A	N/A	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 108 / 427
				Validity Status	Rev. No.	
					B	

Scientific Name	Common Name	Threatened Status	Migratory Category	Listed Marine Species	Presence in OA	Presence in ZPI	Presence in EMBA
<i>Balaenoptera edeni</i>	Bryde's whale	N/A	Migratory Marine Species	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Delphinus delphis</i>	Common dolphin, short-beaked common dolphin	N/A	N/A	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Dugong dugon</i>	Dugong	N/A	Migratory Marine Species	Listed	N/A	N/A	Species or species habitat may occur within area
<i>Pseudorca crassidens</i>	False killer whale	N/A	N/A	N/A	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
<i>Balaenoptera physalus</i>	Fin whale	Vulnerable	Migratory Marine Species	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Megaptera novaeangliae</i>	Humpback whale	N/A	Migratory Marine Species	N/A	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
<i>Tursiops aduncus</i>	Indian Ocean bottlenose dolphin, spotted bottlenose dolphin	N/A	N/A	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Orcinus orca</i>	Killer whale, orca	N/A	Migratory Marine Species	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 109 / 427
			Validity Status	Rev. No.	
				B	

Scientific Name	Common Name	Threatened Status	Migratory Category	Listed Marine Species	Presence in OA	Presence in ZPI	Presence in EMBA
<i>Grampus griseus</i>	Risso's dolphin, grampus	N/A	N/A	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Balaenoptera borealis</i>	Sei whale	Vulnerable	Migratory Marine Species	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Tursiops aduncus</i> (Arafura/Timor Sea populations)	Spotted bottlenose dolphin (Arafura/Timor Sea populations)	N/A	Migratory Marine Species	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat known to occur within area
<i>Stenella attenuata</i>	Spotted dolphin, pantropical spotted dolphin	N/A	N/A	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area	Species or species habitat may occur within area
Reptiles							
<i>Parahydrophis mertoni</i>	Arafura smooth sea snake, northern mangrove sea snake	N/A	N/A	Listed	N/A	N/A	Species or species habitat may occur within area
<i>Hydrophis zweiffei</i>	Australian beaked sea snake	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Hydrophis atriceps</i>	Black-headed sea snake	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 110 / 427
				Validity Status	Rev. No.	
					B	

Scientific Name	Common Name	Threatened Status	Migratory Category	Listed Marine Species	Presence in OA	Presence in ZPI	Presence in EMBA
<i>Hydrophis coggeri</i>	Cogger's sea snake	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Aipysurus duboisii</i>	Dubois' sea snake, Dubois' seasnake, reef shallows sea snake	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Hydrophis elegans</i>	Elegant sea snake, bar-bellied sea snake	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Natator depressus</i>	Flatback turtle	Vulnerable	Migratory Marine Species	Listed	Species or species habitat known to occur within area	Species or species habitat known to occur within area	Foraging, feeding or related behaviour known to occur within area
<i>Chelonia mydas</i>	Green turtle	Vulnerable	Migratory Marine Species	Listed	Species or species habitat may occur within area	Species or species habitat known to occur within area	Foraging, feeding or related behaviour known to occur within area
<i>Eretmochelys imbricata</i>	Hawksbill turtle	Vulnerable	Migratory Marine Species	Listed	Species or species habitat may occur within area	Species or species habitat likely to occur within area	Species or species habitat known to occur within area
<i>Hydrophis peronii</i>	Horned sea snake	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Aipysurus foliosquama</i>	Leaf-scaled sea snake, leaf-scaled seasnake	Critically Endangered	N/A	Listed	N/A	N/A	Species or species habitat may occur within area

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 111 / 427
			Validity Status	Rev. No.	
				B	

Scientific Name	Common Name	Threatened Status	Migratory Category	Listed Marine Species	Presence in OA	Presence in ZPI	Presence in EMBA
<i>Dermochelys coriacea</i>	Leatherback turtle, leathery turtle, luth	Endangered	Migratory Marine Species	Listed	Species or species habitat may occur within area	Species or species habitat likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
<i>Caretta caretta</i>	Loggerhead turtle	Endangered	Migratory Marine Species	Listed	Species or species habitat may occur within area	Species or species habitat likely to occur within area	Foraging, feeding or related behaviour known to occur within area
<i>Hydrophis macdowellii</i>	MacDowell's sea snake, small-headed sea snake,	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Aipysurus mosaicus</i>	Mosaic sea snake	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Lepidochelys olivacea</i>	Olive Ridley turtle, Pacific Ridley turtle	Endangered	Migratory Marine Species	Listed	Species or species habitat may occur within area	Species or species habitat likely to occur within area	Foraging, feeding or related behaviour known to occur within area
<i>Aipysurus laevis</i>	Olive sea snake, olive-brown sea snake	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Hydrophis major</i>	Olive-headed sea snake	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Hydrophis pacificus</i>	Pacific sea snake, large-headed sea snake	N/A	N/A	Listed	N/A	N/A	Species or species habitat may occur within area

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 112 / 427
			Validity Status	Rev. No.	
				B	

Scientific Name	Common Name	Threatened Status	Migratory Category	Listed Marine Species	Presence in OA	Presence in ZPI	Presence in EMBA
<i>Hydrophis inornatus</i>	Plain sea snake	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Hydrelaps darwiniensis</i>	Port Darwin sea snake, black-ringed mangrove sea snake	N/A	N/A	Listed	N/A	N/A	Species or species habitat may occur within area
<i>Crocodylus porosus</i>	Salt-water crocodile, estuarine crocodile	N/A	Migratory Marine Species	Listed	N/A	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
<i>Hydrophis kingii</i>	Spectacled sea snake	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Hydrophis hardwickii</i>	Spine-bellied sea snake	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Hydrophis ornatus</i>	Spotted sea snake, ornate reef sea snake	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Hydrophis stokesii</i>	Stokes' sea snake	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Hydrophis platura</i>	Yellow-bellied sea snake	N/A	N/A	Listed	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 113 / 427
			Validity Status	Rev. No. B	

4.4.4 Biologically Important Areas and Habitat Critical

BIAs are areas and times used by protected marine species for carrying out critical life functions, such as reproduction, feeding, migration and resting (DCCEEW, 2024c). BIAs are designated for marine species protection under the EPBC Act (DCCEEW, 2024c). BIAs have been under review by DCCEEW and are presented on the Australian Marine Spatial Information system (AMSIS). Shapefiles for the data presented on AMSIS are not available at the time of writing, hence the most recent available data is used to inform presence of BIAs and figures for BIAs within this EP (DCCEEW, 2024d).

BIAs identified within the Operational Area, ZPI and EMBA are presented in Table 4-6, and Figure 4-2, Figure 4-3 and Figure 4-4.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 114 / 427
			Validity Status	Rev. No.	
				B	

Table 4-6: Biologically important areas within the Operational Area, ZPI and EMBA

Species	Overlaps Operational Area	Overlaps ZPI	Overlaps EMBA	Distance from Operational Area (km)	Figure reference
Marine Reptiles					
Flatback turtle	-	-	Foraging Internesting Internesting Buffer	15km north-east	Figure 4-2
Green turtle	Foraging	Foraging	Foraging	-	Figure 4-3
Loggerhead turtle	-	-	Foraging	15km north-east	Figure 4-3
Olive Ridley turtle	Foraging	Foraging	Foraging	-	Figure 4-2
Seabirds					
Lesser crested tern	-	-	Breeding	197km south-west	Figure 4-4
Lesser frigatebird	-	-	Breeding	164km south-west	Figure 4-4



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document
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Rev. index.	
Validity Status	Rev. No.
	B

Sheet
of
sheets
115 /
427

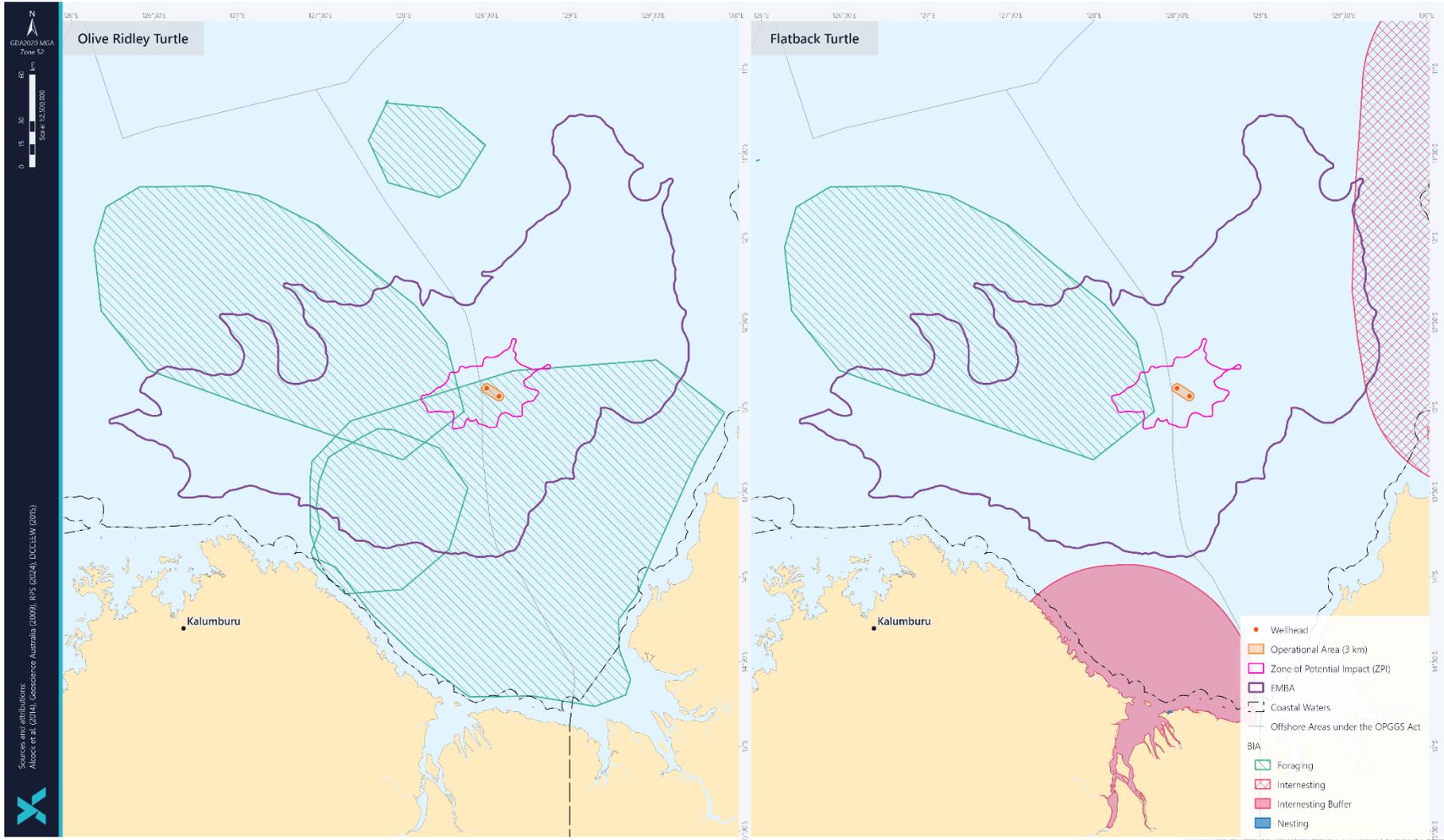


Figure 4-2: Biologically Important Areas for Olive Ridley Turtle and Flatback Turtles



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Company document identification
000694_DV_ES.HSE.0027.000

Owner
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identification

Rev. index.	
Validity Status	Rev. No.
	B

Sheet
of
sheets
116 /
427

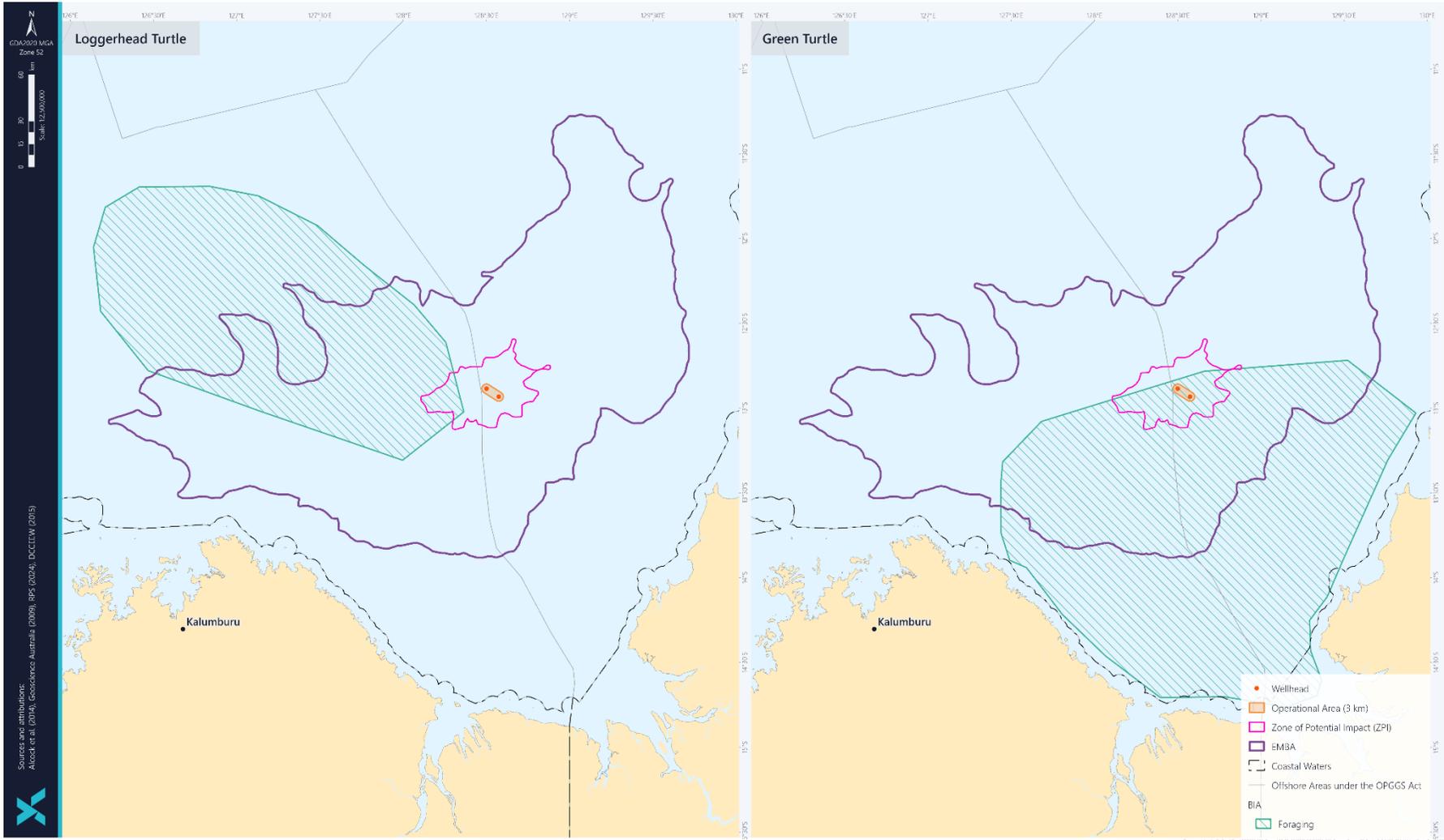


Figure 4-3: Biologically Important Areas for Loggerhead and Green Turtles

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 117 / 427
			Validity Status	Rev. No.	
				B	

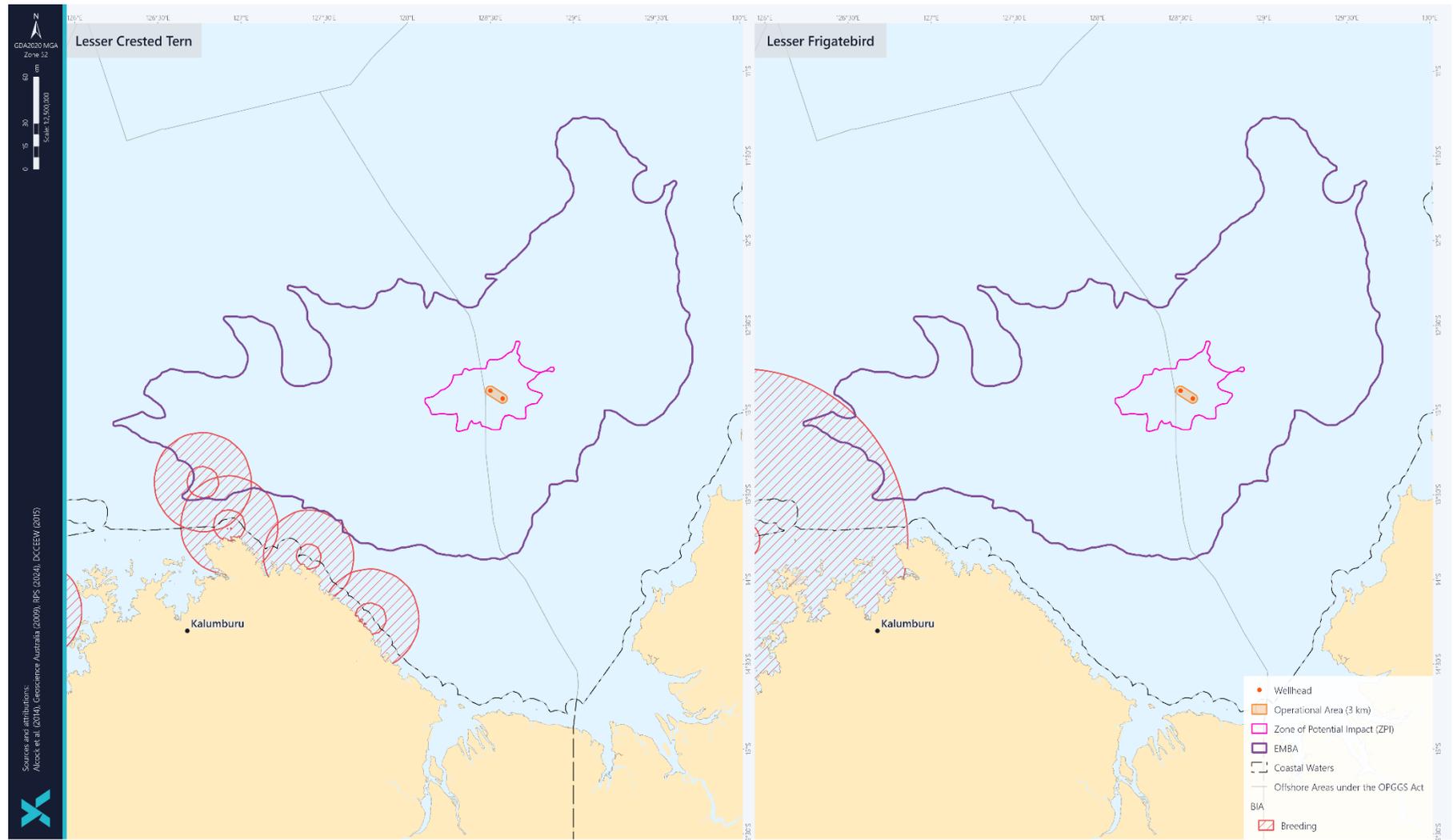


Figure 4-4: Biologically Important Areas for the Lesser Crested Tern and Lesser Frigatebird

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 118 / 427
				Validity Status	Rev. No.	
					B	

4.4.4.1 Habitat Critical to the Survival of Marine Turtles

No habitat critical to the survival of marine turtles is present in the Operational Area or ZPI; those identified in the EMBA are listed in Table 4-7 and shown in Figure 4-2.

Table 4-7: Habitat critical to the survival of marine turtles within the EMBA

Species	Habitat Type	Overlaps Operational Area	Overlaps ZPI	Overlaps EMBA	Distance from Operational Area (km)
Marine Reptiles					
Flatback turtle	Nesting	-	-	Yes	105km east

4.4.5 Seabirds and shorebirds

There are 30 seabird and shorebird species (or species habitat) classified as threatened and/or migratory that may occur within the EMBA (Table 4-5, Appendix B: Environmental Values and Sensitivities). A list of the relevant conservation advice and/or recovery plans is also provided in Table 2-3. The type of presence varies between species but is predominantly may or likely to occur. BIAs for the seabird or shorebird species, lesser crested tern and the lesser frigatebird, intersect the EMBA (Table 4-6). These species are discussed in the relevant sections below.

4.4.5.1 Lesser crested tern

The lesser crested tern is a marine listed species that is known to occur within the EMBA (Table 4-5). The species has a wide global range and can be found on islands and coastlines of tropical and subtropical areas, including Australia. Foraging occurs in the surf and over the open ocean where they prey predominantly on small pelagic fish (Commonwealth of Australia, 2020). The nest is a shallow scrape on sand beaches, rock, coral flats, offshore islands, etc. A BIA for breeding for the lesser crested tern is located at Seagull Island and along the Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef to the north-east and north-west, respectively, of the Petrel fields, within the EMBA (Table 4-6).

Given their distribution and breeding preference, any occurrence is likely to be of a transient nature due to the absence of shoreline contact and offshore islands within the EMBA; however, it is possible that the species may use the area for mating or foraging.

4.4.5.2 Lesser frigatebird

The lesser frigatebird is a migratory marine species that is likely to occur within the EMBA (Table 4-5). They are a pelagic species, often found far offshore, but have also been observed over shelf waters, inshore areas, and inland over continental coastlines (DSEWPac, 2012d). The species forages for fish and cephalopods, typically captured via surface-seizing. The lesser frigatebird forages in Australia, on small, remote tropical and sub-tropical islands, in mangroves or bushes, and even on bare ground (Commonwealth of Australia, 2020). A BIA for breeding for the lesser frigatebird has been identified along the Kimberley and Pilbara coasts and associated islands including Ashmore Reef, which is located to the south-west of the Petrel fields within the EMBA (Table 4-6). Although a breeding BIA overlaps the EMBA, the species nests on islands and there are no islands within the EMBA. Hence, there are no expected breeding sites within the EMBA.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 119 / 427
				Validity Status	Rev. No. B	

Given their distribution and breeding preference occurs outside of the EMBA, any occurrence within the EMBA is likely to be of a transient nature due to the lack of offshore islands in the western EMBA; however, it is possible that the species may use the area for foraging.

4.4.6 Fish, sharks and rays

There are 14 fish, shark and ray species (or species habitat) classified as threatened or migratory, 35 syngnathid species (or species habitat) that may occur within the EMBA (Table 4-5, Appendix B: Environmental Values and Sensitivities). A list of the relevant conservation advice and/or recovery plans and relevant management actions is provided in Table 2-3. The type of presence varies between species, but is predominantly may, likely or known to occur within the EMBA. No Biologically Important Areas (BIAs) for fish species were found to intersect the EMBA.

4.4.7 Marine mammals

There are 5 whale, 10 dolphin and one dugong species (or species habitat) classified as threatened, migratory or a listed marine species that may occur within the EMBA (Table 4-5, Appendix B: Environmental Values and Sensitivities). A list of the relevant conservation advice and/or recovery plans and relevant management actions are also provided in Table 2-3. The type of presence varies between species, but is predominantly may and likely to occur. No BIAs for marine mammal species, have been found that intersect the EMBA.

No marine mammals were sighted during two last marine surveys in 2022 and 2023 in the Operational Area.

4.4.8 Marine reptiles

There are 6 marine turtles, 20 sea snakes, and one crocodile species (or species habitat) classified as threatened, migratory or listed marine that may occur within the EMBA (Table 4-5, Appendix B: Environmental Values and Sensitivities). A list of the relevant conservation advice and/or recovery plans and relevant management actions is also provided in Table 2-3.

Foraging, Internesting and Internesting Buffer BIAs for 4 marine turtle species intersect with the EMBA (Figure 4-2, Figure 4-3). These 4 species, flatback turtle, green turtle, loggerhead turtle and Olive Ridley turtle, are detailed in the sections below.

No marine turtles were sighted during two last marine surveys undertaken by Neptune Energy in the Operational Area, in 2022 and 2023.

No BIAs or habitat critical to the survival of sea snakes were identified (Appendix B: Environmental Values and Sensitivities).

4.4.8.1 Flatback turtle

The flatback turtle is a vulnerable, migratory species that is known to occur within the EMBA (Table 4-5). The flatback turtle is found in tropical waters of northern Australia and is one of only two species of sea turtle without a global distribution (DEE, 2017). Flatback turtles are primarily carnivorous, feeding on soft-bodied invertebrates; juveniles eat gastropod molluscs, squid, siphonophores (DEE, 2017). Limited data also indicate that cuttlefish, hydroids, soft corals, crinoids, molluscs and jellyfish may also form part of their diet (DEE, 2017). Flatback turtles have been observed foraging on the carbonate banks of the Joseph Bonaparte Gulf and around the Pinnacles of the Bonaparte Depression (DCCEEW, 2023e). A BIA for foraging, Western Joseph Bonaparte Gulf, has been identified within the Petrel field and associated EMBA. Further, two BIAs for internesting have been identified. One to the south (Cape

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 120 / 427
				Validity Status	Rev. No. B	

Domett) and one to the north-east (Melville Island, Cobourg Island) of the Petrel field within the EMBA (Table 4-6, Figure 4-2). Habitat critical to the survival of the species has been identified within the EMBA, all with a 60 km interesting buffer:

- Cape Domett and Lacrosse Island in the Cambridge Gulf;
- Waigait Beach to south of Point Blaze, including all offshore islands;
- Brace Point to One Tree Point, including all offshore islands;
- Waters between Melville Island and Vernon Islands; and
- Soldier Point to Pirlangimpi including Seagull Island.

4.4.8.2 Green turtle

The green turtle is a vulnerable, migratory species that is known to occur within the EMBA (Table 4-5). Green turtles are found in tropical and subtropical waters throughout the world; usually occurring within the 20°C isotherms, although individuals can stray into temperate waters (DEE, 2017). Within Australia, green turtles typically nest, forage and migrate across tropical northern Australia (DEE, 2017). Adult green turtles consume mainly seagrass and algae, although they will occasionally eat mangroves, fish-egg cases, jellyfish, and sponges; juvenile green turtles are typically more carnivorous and will also consume plankton during their pelagic stage (DEE, 2017). A BIA for foraging, Joseph Bonaparte Gulf, has been identified within the Petrel field and associated EMBA (Table 4-6, Figure 4-3). No habitat critical to the survival of the species is known to occur in the vicinity of the EMBA.

4.4.8.3 Loggerhead turtle

The loggerhead turtle is an endangered, migratory species that is known to occur within the EMBA (Table 4-5). The loggerhead turtle has a global distribution throughout tropical, subtropical and temperate waters; and in Australia typically occurs in the waters of coral and rocky reefs, seagrass beds, or muddy bays throughout eastern, northern and western Australia (DEE, 2017). While the species has a broad foraging range throughout Australian waters, a BIA has been identified in the Western Joseph Bonaparte Depression located to the northwest of the Petrel field within the EMBA (Table 4-6, Figure 4-3). Loggerhead turtles are carnivorous, feeding primarily on benthic invertebrates (DEE, 2017). No nesting or habitat critical to the survival of the species is known to occur within the vicinity of the EMBA.

4.4.8.4 Olive Ridley turtle

The Olive Ridley turtle is an endangered, migratory species that is known to occur within the EMBA (Table 4-5). The Olive Ridley turtle is found in waters across northern Australia and to the southern Queensland border. Olive Ridley turtles are primarily carnivorous, feeding on soft-bodied invertebrates such as sea pens, soft corals, sea cucumbers, and jellyfish (DEE, 2017). Both juveniles and adults have been observed foraging over shallow benthic habitats from northern Western Australia to south-east Queensland, although occurrences in pelagic foraging habitats also occur (DEE, 2017). Multiple BIAs for foraging have been identified within the Petrel field and associated EMBA (Table 4-6) and are associated with the Pinnacles of the Bonaparte Basin (see Section 4.5.2) (DCCEE, 2023d):

- Joseph Bonaparte Depression;
- Western Joseph Bonaparte Gulf; and
- Western Joseph Bonaparte Gulf – banks.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 121 / 427
				Validity Status	Rev. No. B	

No habitat critical to the survival of the species is known to occur within the vicinity of the EMBA.

4.5 Protected and Significant Areas

There are protected areas and key ecological features (KEFs) within the EMBA. These are summarised in Table 4-8 and further described in the next subsections.

As shown in Figure 4-5, the Operational Area, ZPI and EMBA do not intersect with any State marine protected areas, wetlands of international or national importance, World, National or Commonwealth heritage properties or places. The EMBA overlaps 3 Key Ecological Features (KEFs) and one Australian Marine Park as outlined below.

Table 4-8: Protected areas and key ecological features within the Operational Area, ZPI and EMBA

Key sensitive area	IUCN category	Overlaps Operational Area	Overlaps Zone of Potential Impact	Overlaps EMBA	Distance from Operational Area (km)
Australian Marine Parks					
Oceanic Shoals Marine Park	IV and VI	-	Yes	Yes	44 km north-west
Key Ecological Features					
Carbonate bank and terrace system of the Sahul Shelf	Not applicable	-	-	Yes	81 km west
Carbonate bank and terrace system of the Van Diemen Rise	Not applicable	-	-	Yes	104 km north
Pinnacles of the Bonaparte Basin	Not applicable	-	-	Yes	27 km north-west

4.5.1 State, Territory and Australian Marine Parks

The Operational Area and ZPI do not intersect any Australian or State Marine Parks. The EMBA overlaps one Australian Marine Park, the Oceanic Shoals Marine Park (Table 4-8).

The WA North Kimberley Marine Park is within close proximity to the EMBA and has significance to First Nations heritage. The values are discussed in Section 4.6.8 and in Appendix B: Environmental Values and Sensitivities.

4.5.1.1 Australian Marine Parks

The Australian Marine Park (AMP) Network has been established around Australia as part of the National Representative System of Marine Protected Areas (NRSMPA). The primary goal of the NRSMPA is to establish and effectively manage a comprehensive, adequate and representative system of marine parks to contribute to the long-term conservation of marine ecosystems and protect marine biodiversity.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 122 / 427
			Validity Status	Rev. No. B	

The EMBA overlaps the Oceanic Shoals AMP and is in close proximity to Joseph Bonaparte Gulf AMP and the Kimberley AMP (Figure 4-5). At the closest points, the EMBA lies 17km north west of the Joseph Bonaparte Gulf AMP and 4km north east of the Kimberley AMP. These AMPs hold cultural significance for First Nations people. The values of the Oceanic Shoals AMP are described in Table 4-9.

The Oceanic Shoals AMP is located west of the Tiwi Islands, approximately 155km north-west of Darwin, NT and 305km north of Wyndham, WA. It extends to the limit of Australia's Exclusive Economic Zone (EEZ). The Oceanic Shoals AMP covers an area of 71,743km² and water depths from less than 15m to 500m and is the largest marine park in the North Marine Parks Network.

Table 4-9: Values of the Oceanic Shoals AMP

Value	Summary
Natural values	<p>The Oceanic Shoals AMP provides examples of ecosystems representative of the Northwest Shelf Transition as the pinnacles, carbonate banks and shoals within the AMP are sites of enhanced biological productivity.</p> <p>The AMP also comprises 4 KEFs (Section 4.5.2), the first 3 overlapped by the EMBA namely: Carbonate bank and terrace systems of the Van Diemen Rise; Carbonate bank and terrace system of the Sahul Shelf; Pinnacles of the Bonaparte Basin; and Shelf break and slope of the Arafura Shelf.</p> <p>The EMBA overlaps the Oceanic Shoals AMP in 4 different classified areas: the Multiple Use Zone (IUCN VI), the Special Purpose Zone (Trawl – IUCN VI), the Habitat Protection Zone (IUCN IV) and the National Park Zone (IUCN II) by the IUCN.</p> <p>The Oceanic Shoals AMP is a foraging and interesting Biologically Important Area (BIA) for marine turtles (Section 4.4.4.1).</p>
Cultural values	The Sea Country within the marine park is valued for Indigenous cultural identity, health and wellbeing (Parks Australia, 2024c.).
Socioeconomic values	Commercial fishing and mining are important activities in the Marine Park (DNP, 2018a).

	Eni australia Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 123 / 427
			Validity Status	Rev. No.	
				B	

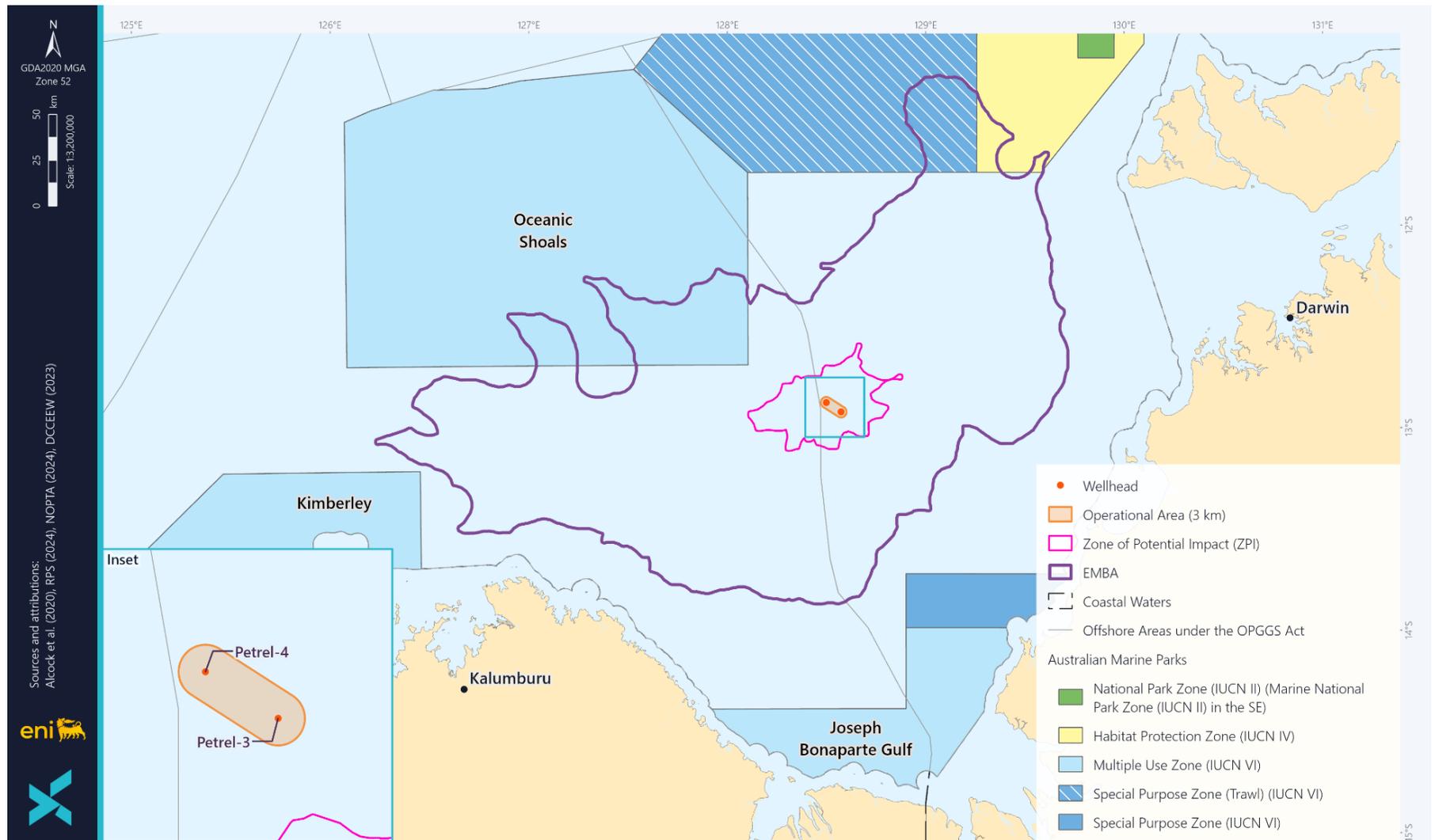


Figure 4-5: Australian Marine Parks in Northern Australia

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 124 / 427
			Validity Status	Rev. No. B	

4.5.2 Key Ecological Features

KEFs are those components of the marine ecosystem that are important for biodiversity or the ecosystem function and integrity of a Commonwealth marine area. The Operational Area and ZPI do not overlap any KEFs. The EMBA overlaps three KEFs:

- Carbonate bank and terrace system of the Sahul Shelf;
- Carbonate bank and terrace system of the Van Diemen Rise;
- Pinnacles of the Bonaparte Basin.

All KEFs within the EMBA are shown in Figure 4-6 and described in Table 4-10.

Table 4-10: Key Ecological Features within the EMBA

KEF	Values and Description
Carbonate bank and terrace system of the Sahul Shelf	<p>The Sahul banks are the single most extensive banks and shoals in the Australian EEZ with unique seafloor feature with ecological properties of regional significance. The area is significant because of its role in enhancing biodiversity and local productivity in the region. The banks provide hard substrate in an otherwise soft substrate environment which provides a habitat for sessile species. The banks rise steeply from depths of approximately 80m and emerge to within 30m of the surface allowing for light dependant organisms to thrive. Communities comprise of hard and soft corals, sponges, whips, fans and bryozoans.</p> <p>The banks form part of a larger complex of banks and terraces that occurs on the Van Diemen Rise. The area supports a diverse range of species including 11 shark species, black marlin, barracuda, sea turtles, sea snakes and orca. Humpback whales and green and freshwater sawfish are known to occur within the area.</p> <p>(DSEWPAC, 2012a).</p>
Carbonate bank and terrace system of the Van Diemen Rise	<p>The Carbonate banks and terrace system of the Sahul Shelf are located in the western Joseph Bonaparte Gulf and to the north of Cape Bougainville and Cape Londonderry. The carbonate banks and terraces are part of a larger complex of banks and terraces that occurs on the Van Diemen Rise in the adjacent NMR.</p> <p>The bank and terrace system of the Van Diemen Rise covers approximately 31,278km² and forms part of the larger system associated with the Sahul Banks to the north and Londonderry Rise to the east. The feature is characterised by terrace, banks, channels and valleys (DSEWPAC, 2012b). The banks, ridges and terraces of the Van Diemen Rise are raised geomorphic features with relatively high proportions of hard substrate that support sponge and octocoral gardens. These, in turn, provide habitat to other epifauna, by providing structure in an otherwise flat environment. Plains and valleys are characterised by scattered epifauna and infauna that include polychaetes and ascidians. These epibenthic communities support higher order species such as olive ridley turtles, sea snakes and sharks (DSEWPAC, 2012b).</p>
Pinnacles of the Bonaparte Basin	<p>The Pinnacles of the Bonaparte Basic are defined as a KEF due to the unique seafloor that features ecological properties of regional significance.</p> <p>The Pinnacles of the Bonaparte Basin provide areas of hard substrate in an otherwise relatively featureless environment, the pinnacles are likely to support a high number of species, although a better understanding of the species richness and diversity associated with these structures is required. Covering >520km² within the Bonaparte Basin, this feature contains the largest concentration of pinnacles along the Australian margin. The Pinnacles of the Bonaparte Basin are thought to be the eroded remnants of underlying strata; it is likely that the vertical walls generate local upwelling of nutrient-rich water, leading to phytoplankton productivity that attracts aggregations of planktivorous and predatory fish, seabirds, and foraging turtles (DSEWPAC, 2012c).</p>

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 125 / 427
			Validity Status	Rev. No.	
				B	

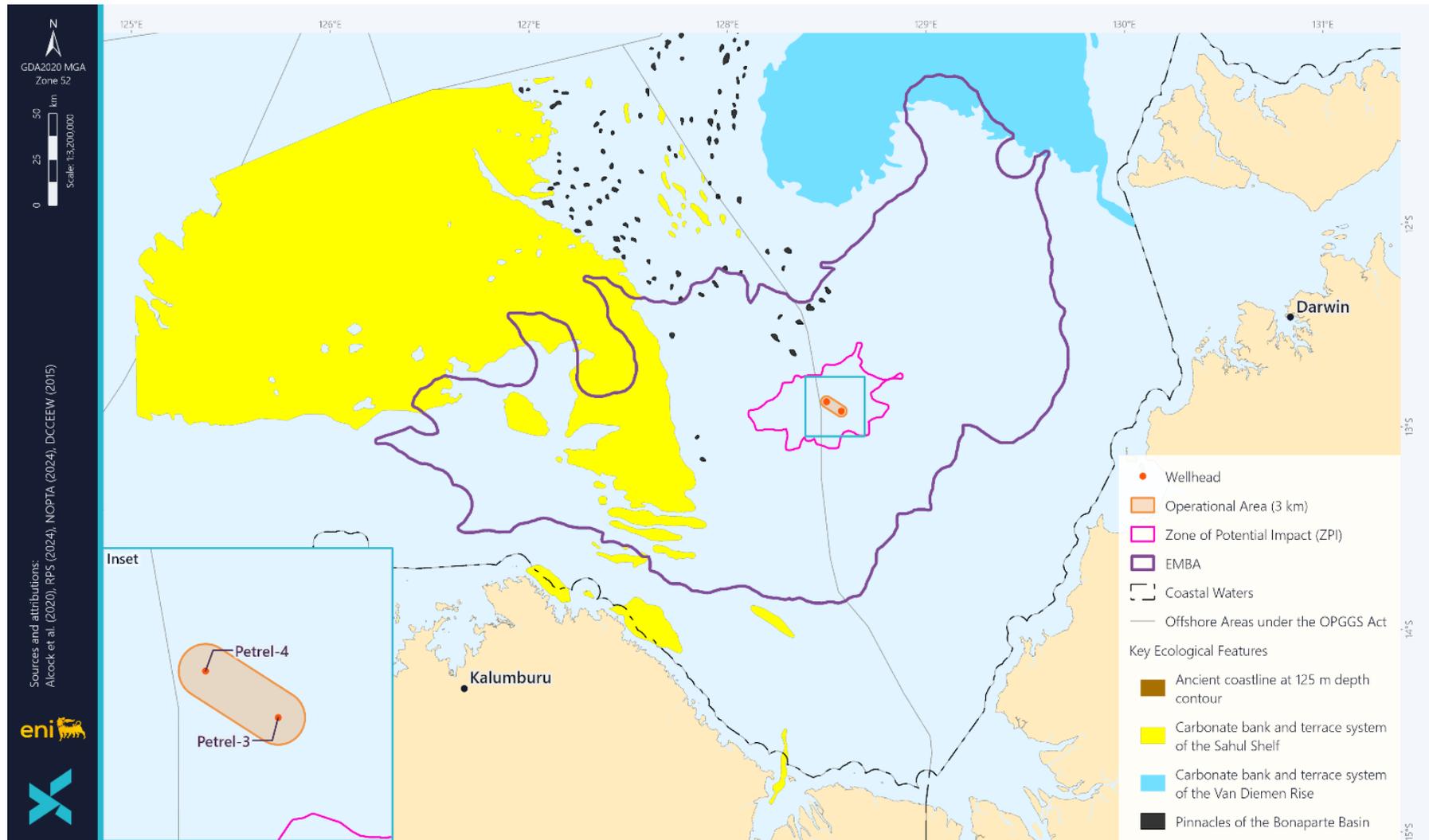


Figure 4-6: Key Ecological Features in Northern Australia

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 126 / 427
			Validity Status	Rev. No. B	

4.5.3 National Heritage Places

There are no National Heritage Places that intersect the Operational Area, ZPI or EMBA.

4.5.4 Ramsar Wetlands

There are no Ramsar Wetlands that intersect the Operational Area, ZPI or EMBA.

4.6 Cultural and Socioeconomic Environment

4.6.1 Commercial Fisheries

The following data and data ranges were used to identify fishing effort, to identify the potential for interaction with commercial fisheries:

- Commonwealth-managed fisheries – fishing intensity data from 2010 to 2022. Sourced from Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES; Summerson, 2024);
- State-managed fisheries – Averaged over 10 years from 2013 to 2023. Sourced from fishery status reports (Butler, et al., 2023) and the most recent FishCube data catch and effort records, from the West Australian Department of Primary Industry and Regional Development (DPIRD, 2023a); and
- Territory-managed fisheries – number of active licences data from 2017 to 2021. Sourced from Department of Industry, Tourism and Trade (DITT) (NT GOV, 2021).

Table 4-11 identifies the Commonwealth and State/Territory commercial fisheries overlapping the Operational Area, ZPI, and the EMBA, and provides an assessment of the potential interaction based on the nature of the fishery and historic catch data; including an assessment of whether the fishery is considered 'active' in the Operational Area. While it is recognised that catch data referenced in Table 4-11 does not preclude the possibility for future catch, it is highly unlikely the catch effort of these fisheries will significantly increase in the vicinity of the Operational Area over the life of this EP.

The following is a summary of fisheries considered active within the data range:

- Commonwealth-managed fisheries: there are 4 fisheries with designated management areas that overlap the EMBA; however, there are no active fisheries overlapping the Operational Area or ZPI. Northern Prawn Fishery is the only active fishery within the EMBA;
- State-managed fisheries: there is one active fishery overlapping the Operational Area; and
- Territory-managed fisheries: 4 active fisheries overlap the Operational Area. Note fishing tour operators are permitted to fish in Territory waters and do not have management areas.

Fisheries with maximum fishing effort recorded over the data period that overlaps the EMBA are shown in Figure 4-7 to Figure 4-24. Note that some fisheries do not have management areas to display, and that the datasets and the way fishing effort is recorded differs between Commonwealth, State and Territory commercial fisheries (i.e. intensity, number of active licences or number of active vessels).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 127 / 427
			Validity Status	Rev. No.	
				B	

Table 4-11: Commonwealth and State fisheries within the Operational Area, ZPI and EMBA

Fishery	Spatial overlap with fishery management areas				Description
	Operational Area	Active in Operational Area*	ZPI	EMBA	
Commonwealth Fisheries					
Northern Prawn Fishery	✓	×	✓	✓	<p>The Northern Prawn Fishery (NPF) management area overlaps the Operational Area, ZPI, and the EMBA. The fishery extends from Joseph Bonaparte Gulf across the Top End to the Gulf of Carpentaria (Butler et al., 2023). The NPF uses otter trawl gear to target a variety of tropical prawn species and has fishing effort overlapping with the EMBA (Summerson, 2024). In the management area, fishing effort peaked in 1981 of more than 250 active vessels and has decreased to 54 active vessels in the 2022-2023 fishing season (Butler et al., 2023).</p> <p>The Operational Area does not fall within a fishing intensity area, as indicated through the Commonwealth Fishery Status Reports (Figure 4-7; Butler et al., 2023). Engagement with the NPF confirmed there is no NPF fishing effort in the immediate vicinity of the wellheads, and that the JBG fishery is closed from 1st December to 1st August each year (Section 5). Therefore, Eni does not consider it a possibility that interaction with the fishery may occur within the Operational Area or ZPI, but may do within the EMBA.</p>
Southern Bluefin Tuna Fishery	✓	×	✓	✓	<p>The Southern Bluefin Tuna Fishery management area overlaps the Operational Area, ZPI, and the EMBA. The fishery spans the Australian Fishing Zone, both on the high seas and within the Exclusive Economic Zones (EEZs) of Australia and other nations. Since 1992, most of the Australian catch has been taken by purse seine in the Great Australian Bight (Patterson and Dylewski, 2023a).</p> <p>There has been no fishing activity recorded within the Operational Area, ZPI, or the EMBA (Summerson, 2024). The fishery targets tuna species that can be found in deeper waters to 500m (AFMA, 2021). Accordingly, given the depth of the Operational Area (~95m), Eni considers there to be no potential for interaction within the Operational Area ZPI or EMBA.</p>

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 128 / 427
			Validity Status	Rev. No.	
				B	

Fishery	Spatial overlap with fishery management areas				Description
	Operational Area	Active in Operational Area*	ZPI	EMBA	
Western Skipjack Fishery	✓	✗	✓	✓	<p>The Western Skipjack Tuna Fishery management area overlaps the Operational Area, ZPI, and the EMBA. The Western Skipjack Tuna Fishery spans the Australian Fishing Zone west of Victoria and the Torres Strait. The fishery is currently not active, with no fishing effort present since 2009 (Patterson and Dylewski, 2023b).</p> <p>Therefore, Eni considers there to be no potential for interaction with this fishery within the Operational Area, ZPI, and the EMBA.</p>
Western Tuna and Billfish Fishery	✓	✗	✓	✓	<p>The Western Tuna and Billfish Fishery management area overlaps the Operational Area, ZPI, and the EMBA. However, most of the Australian catch has been concentrated off south-west Western Australia with occasional activity off South Australia (Butler et al., 2023). There has been no fishing activity recorded within the EMBA, with the nearest fishing effort (~348km west of the EMBA), which was last recorded in 2012 (Summerson, 2024).</p> <p>Accordingly, Eni considers there to be no potential for interaction with this fishery within the Operational Area, ZPI, and EMBA.</p>
Western Australia State Managed Fisheries					
Abalone Managed Fishery	✗	✗	✓	✓	<p>The Abalone Managed Fishery management area overlaps the ZPI and the EMBA. The fishery includes the Greenlip/Brownlip Fishery (Area four) and Roe's Abalone Fishery (Area eight). However, no abalone fishing, recreational or commercial, is permitted north of Moore River until further notice to allow for the Roe's abalone population to rebuild (DPIRD, 2023). Accordingly, Eni considers there to be no potential for interaction with this fishery within the Operational Area, ZPI and the EMBA; but there may be interaction in the ZPI and EMBA in the future if the fishery reopens.</p>
Joint Authority Northern Shark Fishery	✗	✗	✗	✗	<p>Joint Authority of Northern Shark Fishery operated in the eastern Kimberley and this fishery has been closed since 2008/09 to protect key habitat and recovery of commercially targeted shark species in WA (DPIRD, 2023). Note this fishery does not have management areas.</p>

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 129 / 427
			Validity Status	Rev. No.	
				B	

Fishery	Spatial overlap with fishery management areas				Description
	Operational Area	Active in Operational Area*	ZPI	EMBA	
					Accordingly, Eni considers there to be no potential for interaction within the Operational Area, ZPI and EMBA.
Kimberley Crab Managed Fishery	x	x	✓	✓	The Kimberley Crab Fishery management area overlaps the ZPI and the EMBA. The fishery allows for 1,200 units (600 traps) to license holders and an additional 600 traps allocated to Traditional Owner groups (Johnston et al., 2023). No fishing effort has been recorded within the ZPI and the EMBA. Accordingly, Eni considers there to be no potential for interaction with the fishery within the Operational Area, ZPI and EMBA.
Kimberley Prawn Fishery	x	x	x	✓	The Kimberley Prawn Fishery management area overlaps the EMBA. The fishery is active within the EMBA, with five 60NM CAES blocks reporting less than three vessels across the 2017-2022 seasons (DPIRD, 2023). Accordingly, Eni considers it a possibility that interaction with the fishery may occur within the EMBA only.
Mackerel Managed Fishery	x	x	✓	✓	The Mackerel Managed Fishery management area overlaps the ZPI and the EMBA. The fishery extends from the West Coast Bioregion to the WA/NT border and is active within the ZPI and the EMBA. There is one 60NM CAES within the ZPI and five 60NM and 10NM CAES blocks within the EMBA reporting up to seven vessels active, respectively, across the 2017-2022 seasons within the EMBA. Accordingly, Eni considers it a possibility that interaction with the fishery may occur within the ZPI and the EMBA.
Marine Aquarium Managed Fishery	x	x	✓	✓	The Marine Aquarium Managed Fishery management area overlaps the ZPI and the EMBA. The fishery is active within the EMBA. There are three 60NM CAES blocks reporting less than three active licences between 2017-2022 seasons within the EMBA (DPIRD, 2023). The Marine Aquarium Managed fishery is a diver-based fishery and restricted to relatively shallow waters. Accordingly, Eni considers it a possibility that interaction with the fishery may occur within the EMBA.
Northern Demersal Scalefish Fishery	x	x	✓	✓	The Northern Demersal Scalefish Fishery management area overlaps the ZPI and the EMBA. The fishery is active within the ZPI and the EMBA and is managed in accordance with the North Coast Demersal Resource. There are

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 130 / 427
			Validity Status	Rev. No.	
				B	

Fishery	Spatial overlap with fishery management areas				Description
	Operational Area	Active in Operational Area*	ZPI	EMBA	
					two 60NM and three 10NM CAES blocks within the ZPI and eighteen 60NM and six 10NM CAES blocks reporting up to seven active vessels (DPIRD, 2023). Accordingly, Eni considers it a possibility that interaction with the fishery may only occur within the ZPI and the EMBA.
Open Access in the North Coast, Gascoyne Coast and Bioregions*	x	✓	x	x	The Open Access in the North Coast Fishery has fishing effort that intersects with the Operational Area and the EMBA. Note this fishery does not have management areas. The fishery is active within the Operational Area and EMBA, with 60NM CAES block reporting six vessels in the Operational Area and between up to 37 active vessels in the EMBA across the 2017-2022 seasons (DPIRD, 2023). Therefore, Eni considers it a possibility that interactions with the fishery may occur in the Operational Area, ZPI and EMBA.
Peral Oyster Managed Fishery*	x	x	x	x	The Pearl Oyster Managed Fishery has fishing effort that intersects with the EMBA. Note this fishery does not have a management area. The fishery is active within the EMBA, with 60NM CAES block reporting less than three active vessels across the 2017-2022 seasons (DPIRD, 2023). The Pearl Oyster Managed Fishery fishing effort is mostly focused in shallow, coastal waters (10-15 m depth) with a maximum depth of 35 m (Lulofs and Sumner, 2002). Accordingly, Eni considers it a possibility that interactions with the fishery may occur within the EMBA only.
South West Coast Salmon Managed Fishery	x	x	✓	✓	The South West Coast Salmon Managed Fishery management area overlaps the ZPI and the EMBA. Historically, no fishing has occurred north of the Perth Metropolitan Area (Duffy et al., 2023) and there is no fishing effort recorded within the ZPI and the EMBA. Accordingly, Eni considers there to be no potential for interaction with this fishery within the EMBA.
Specimen Shell Managed Fishery	x	x	✓	✓	The Specimen Shell Managed Fishery overlaps the ZPI and the EMBA. The fishery is largely diver-based, targeting specimen shells in water depths < 30 m. There has been no fishing effort recorded within the ZPI and the EMBA. Accordingly, Eni considers there to be no potential for interaction with the fishery within the ZPI and the EMBA.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 131 / 427
			Validity Status	Rev. No.	
				B	

Fishery	Spatial overlap with fishery management areas				Description
	Operational Area	Active in Operational Area*	ZPI	EMBA	
West Australian Sea cucumber Fishery*	x	x	x	x	The West Australian Sea Cucumber Fishery has fishing effort that intersects with the EMBA. Note this fishery does not have a management area. The fishery is active in the EMBA, with 60NM CAES block reporting up to seven vessels active across the 2017-2022 seasons (DPIRD, 2023). Accordingly, Eni considers it a possibility that interaction with the fishery may occur with the EMBA only.
West Coast Deep Sea Crustacean Managed Fishery	x	x	✓	✓	The West Coast Deep Sea Crustacean Managed Fishery management area overlaps the ZPI and the EMBA. However, the ZPI and the EMBA are within the closed waters of the fishery and no fishing effort recorded. Accordingly, Eni considers there to be no potential for interaction with the fishery within the ZPI and the EMBA.
Western Australia Charter based fisheries					
Tour Operators*	x	x	x	x	Fishing Tour Operators are permitted to operate across WA state waters and are required to report monthly logbook records of client fish catches. This fishery does not have a management area but are permitted to fish anywhere in WA state waters. The fishery is active within the ZPI and the EMBA. There is one 60NM within the ZPI, and three 60NM and one 10NM CAES blocks within the EMBA reporting less than three active licences in the ZPI and up to 42 active licences in the EMBA. Accordingly, Eni considers it a possibility that interaction with the fishery may occur within the ZPI and the EMBA.
Northern Territory Managed Fisheries					
Aquarium Fishery	✓	✓	✓	✓	The Northern Territory Aquarium Fishery overlaps with the Operational Area and EMBA. The Aquarium Fishery is a small-scale, multi-species fishery and includes freshwater, estuarine and marine habitats to the outer boundary of the Australian EEZ. Freshwater and estuarine species are generally collected between the Adelaide and Daly rivers, while most marine species are collected within 100km of Nhulunbuy and Darwin (NT Government 2024a).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 132 / 427
			Validity Status	Rev. No.	
				B	

Fishery	Spatial overlap with fishery management areas				Description
	Operational Area	Active in Operational Area*	ZPI	EMBA	
					Analysis of five years of NT fishing effort data (2017-2021) shows 1 licence operating in the Operational Area and EMBA (NT GOV , 2021). Accordingly, Eni considers it a possibility that interaction with the fishery may occur in the Operational Area and EMBA.
Barramundi*	x	x	x	x	The Barramundi Fishery has fishing effort that intersects with the EMBA. Note this fishery does not have a management area. The fishing area is restricted to waters seaward from the coast, river mouths and legislated closed lines from the high-water mark to 3nm seaward of the low water mark (NT Government 2024b). Historical fishing effort demonstrates, fishing has concentrated in the eastern Joseph Bonaparte Gulf and Van Diemen Gulf region of coastal NT waters. Analysis of five years of NT fishing effort data (2017-2021) shows up to 4 licences operated in the vicinity of the EMBA during this period (NT GOV, 2024). Accordingly, Eni considers it a possibility that interaction with the fishery may occur only in the EMBA.
Coastal Line Fishery	x	x	x	✓	The Coastal Line Fishery has fishing effort that intersects with the EMBA. The fishery is permitted to fish between the high-water mark to 15nm (from the low water mark). The western zone of the fishery extends from the WA border to Vashon Head on Cobourg Peninsula. Previous fishing effort has been concentrated in the coastal waters of the Tiwi Islands and Daly River inlet. Analysis of five years of NT fishing effort data (2017-2021) shows up to 2 licences operated in the vicinity of the EMBA during this period (NT GOV, 2024). Therefore, Eni considers it a possibility that interaction with the fishery may occur only in the EMBA.
Demersal Fishery	✓	✓	✓	✓	The Demersal Fishery overlaps with the Operational Area, ZPI and EMBA. Demersal fishing is allowed from 15 nm from the low water mark to the outer boundary of the Australian EEZ, excluding the area of the Timor Reef fishery. Analysis of five years of NT fishing effort data (2017-2021) shows 3 licences operating in the Operational Area, ZPI and EMBA (NT GOV, 2024). Eni considers there may be potential for interaction with the fishery in the Operational Area, ZPI and EMBA.

 eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 133 / 427
			Validity Status	Rev. No.	
				B	

Fishery	Spatial overlap with fishery management areas				Description
	Operational Area	Active in Operational Area*	ZPI	EMBA	
Development Fishery (Small Pealgic)	x	x	x	✓	<p>The Development Fishery overlaps with the EMBA. Development Fishery Licences are issued to existing fisheries intending to trial new fishing gear, fishing methods and/or catch new target species.</p> <p>Fishers who wish to conduct development trials are required to lodge written applications providing detailed information about their proposed activities. Performance criteria are assigned to each permit so that the feasibility of the trials may be assessed.</p> <p>Development licences may be issued to approved applicants for up to one licensing year and may be renewed a maximum of four times. Where licence holders meet all performance criteria and remain able to demonstrate that the fishery and/or gear is both ecologically and economically sustainable, the fishery and/or gear in question may progress to a managed fishery. Analysis of five years of NT fishing effort data (2017-2021) shows two licences operated in the vicinity of the EMBA during this period (NT GOV, 2024). Therefore, Eni considers it a possibility that interaction with the fishery may occur only in the EMBA.</p>
Jigging Fishery*	x	x	x	x	<p>The Jigging Fishery has fishing effort that intersects with the EMBA. Note this fishery does not have a management area. Analysis of five years of NT fishing effort data (2017-2021) shows one licence operated in the vicinity of the EMBA during this period (NT GOV , 2024), concentrated in the eastern Joseph Bonaparte Gulf and Daly River inlet. Therefore, Eni considers it a possibility that interaction with this fishery may occur within the EMBA only.</p>
Mud Crab Fishery*	x	x	x	x	<p>The Mud Crab Fishery has fishing effort that intersects with the EMBA. Note this fishery does not have a management area. Crabbing is generally confined to coastal mudflats and estuaries and commercial activity is concentrated in the Gulf of Carpentaria. Analysis of five years of NT fishing effort data (2017-2021) shows up to 3 licences operating in the vicinity of the EMBA during this period (NT GOV , 2024). Therefore, Eni considers it a possibility that interactions with the fishery may occur only in the EMBA.</p>
Offshore Net and Line Fishery	✓	✓	✓	✓	<p>The Offshore Net and Line Fishery overlaps with the Operational Area, ZPI and EMBA. This fishery operates in all NT waters from the low water mark to the</p>

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 134 / 427
			Validity Status	Rev. No.	
				B	

Fishery	Spatial overlap with fishery management areas				Description
	Operational Area	Active in Operational Area*	ZPI	EMBA	
					boundary of the Australian EEZ. Analysis of five years of NT fishing effort data (2017-2021) shows up to 6 licences operated in the vicinity of the EMBA and 1 licence within the vicinity of the Operational Area during this period (NT GOV , 2024). Therefore, Eni considers it a possibility that interactions with the fishery may occur within the Operational Area, ZPI and EMBA.
Pearl Oyster Fishery*	x	x	x	x	The Pearl Oyster Fishery has fishing effort that intersects with the EMBA. Note this fishery does not have a management area. The Pearly Oyster Fishery operates from the high-water mark to the outer boundary of the Australian EEZ. Analysis of five years of NT fishing effort data (2017-2021) shows one licence operated in the vicinity of the EMBA during this period (NT GOV, 2024). Therefore, Eni considers it a possibility that interactions with the fishery may occur only in the EMBA.
Spanish Mackerel	✓	✓	✓	✓	The Spanish Mackerel overlaps with the Operational Area, ZPI and EMBA. Commercial fishing for Spanish mackerel is allowed from the high-water mark to the outer boundary of the Australian EEZ. Fishing generally takes place around reefs, headlands and shoals. Analysis of five years of NT fishing effort data (2017-2021) shows 1 licence and up to 8 licences operated in the vicinity of the Operational Area and EMBA, respectively (NT GOV, 2024). Therefore, Eni considers it a possibility that interactions with the fishery may occur within the Operational Area and EMBA.
Special Permits*	x	x	x	x	The Special Permits Area has fishing effort that intersects with the EMBA. Note this fishery does not have a management area. This permit is for education activities, research or carrying out trials and experiments with fishing vessels or gear. It may also be issued for sport or recreation for a person who would otherwise be unable to fish due to disability. Analysis of five years of NT fishing effort data (2017-2021) shows one licence operated in the vicinity of the EMBA during this period (NT GOV , 2024). Therefore, Eni considers it a possibility that interactions with the fishery may occur only in the EMBA.
Timor Reef Fishery	x	x	x	✓	The Timor Reef Fishery overlaps with the EMBA. Commercial fishing is allowed north-west of Darwin to the WA/NT border and to the outer boundary of the

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 135 / 427
			Validity Status	Rev. No.	
				B	

Fishery	Spatial overlap with fishery management areas				Description
	Operational Area	Active in Operational Area*	ZPI	EMBA	
					Australian EEZ. Analysis of five years of NT fishing effort data (2017-2021) shows up to 2 licences operated in the vicinity of the EMBA during this period (NT GOV , 2024). Therefore, Eni considers it a possibility that interactions with the fishery may occur only in the EMBA.
Northern Territory Charter based fisheries					
Tour operators*	*	✓	*	*	Fishing tour operators in the NT are required a licence to run commercial guided fishing tours and authorisation with an approved operator card (Northern Territory Government, 2024). This fishery does not have a management area but has fishing effort that intersects with the Operational Area, ZPI, and EMBA. Analysis of five years of NT fishing effort data (2017-2021) shows only one active licence within the Operational Area and ZPI, and up to 17 active licences within the EMBA. Therefore, Eni considers it a possibility that interactions with the fishery may occur within the Operational Area, ZPI, and the EMBA.

**Note that some fisheries do not have management areas but do have licences or active effort; and are identified as 'active within the Operational Area'.*

 eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 136 / 427
			Validity Status	Rev. No.	
				B	

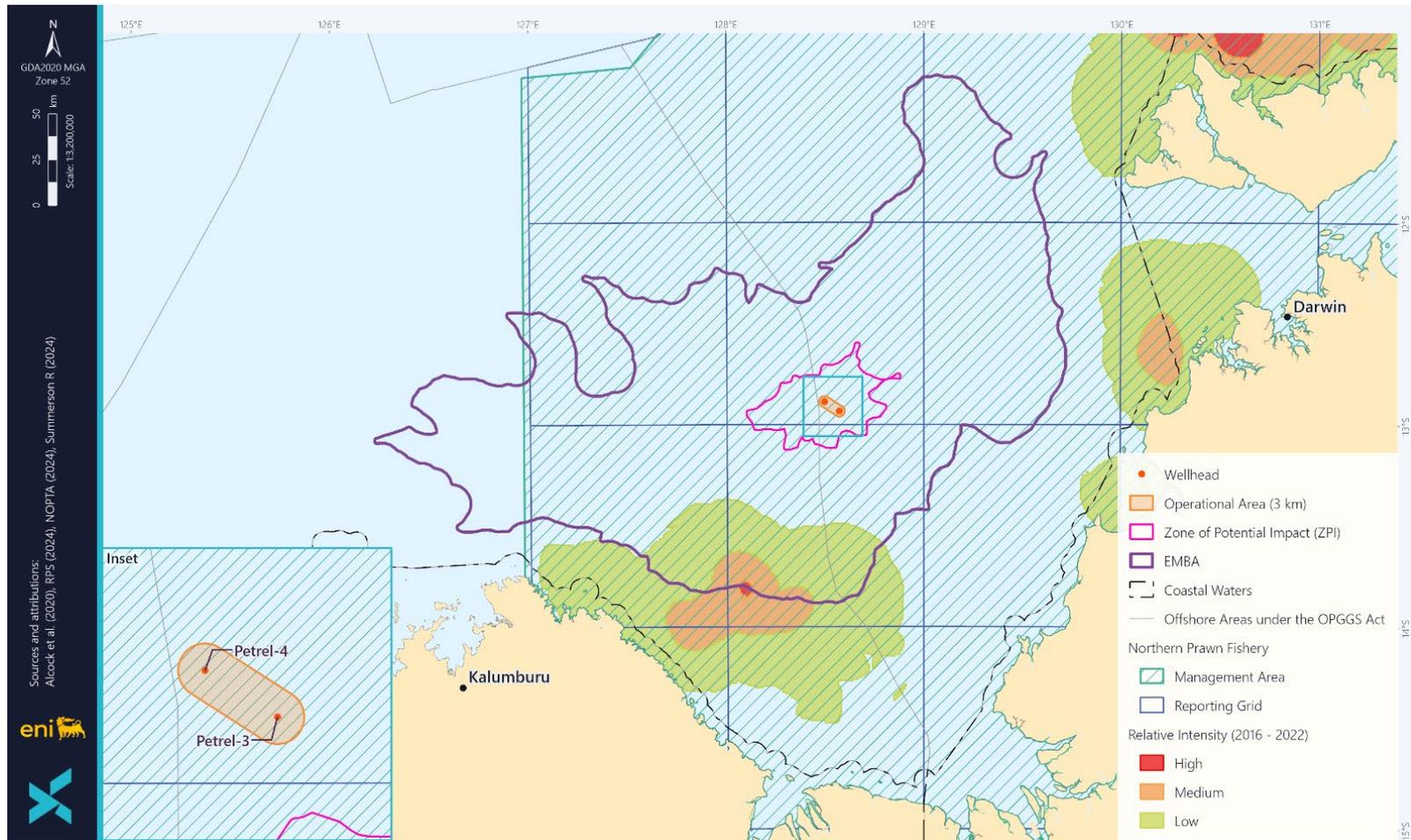


Figure 4-7: Northern Prawn Fishery Fishing Intensity (2016-2022)

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 137 / 427
			Validity Status	Rev. No.	
				B	

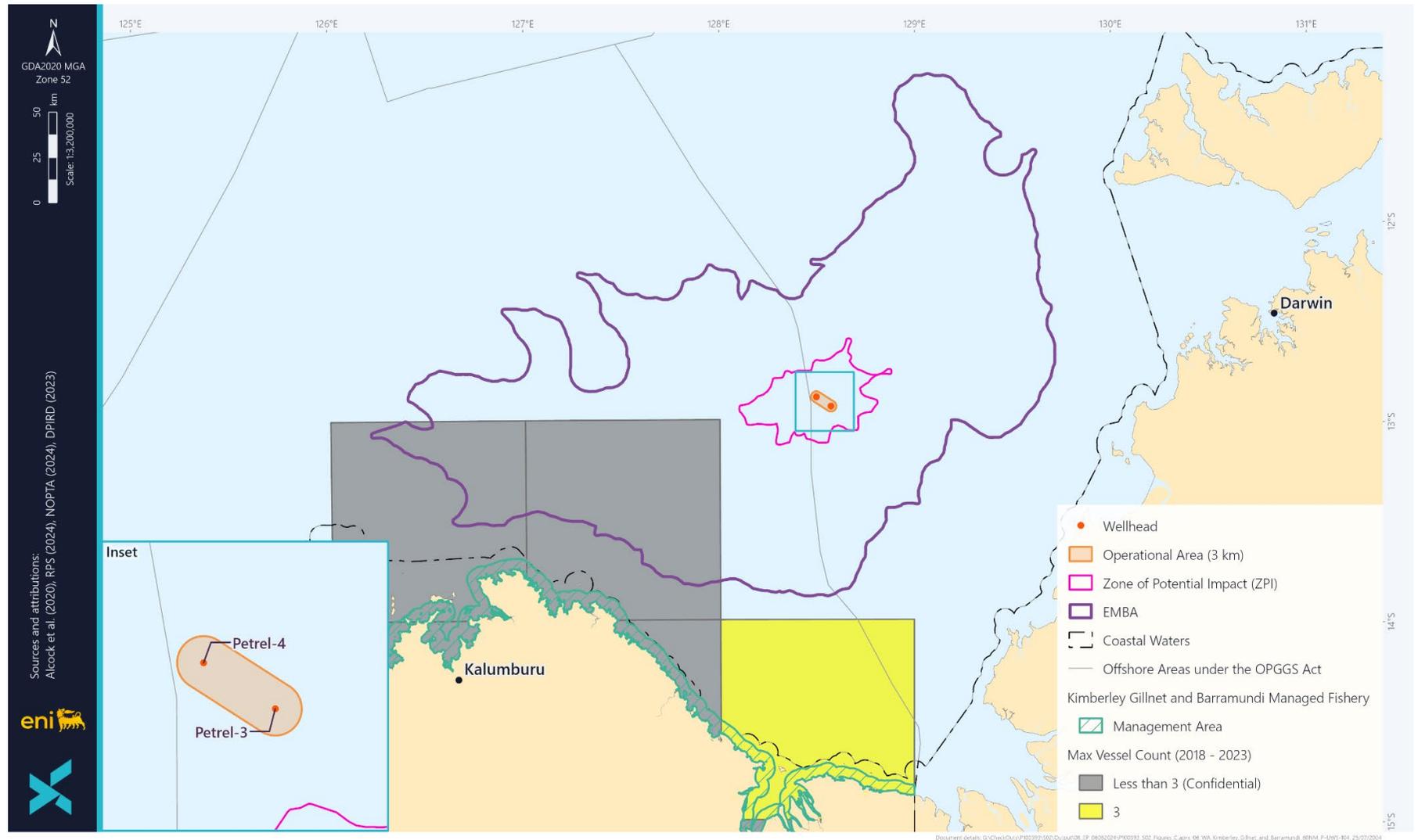


Figure 4-8: WA Kimberley Gillnet and Barramundi activity within the EMBA (2018-2023)

 eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 138 / 427
			Validity Status	Rev. No.	
				B	

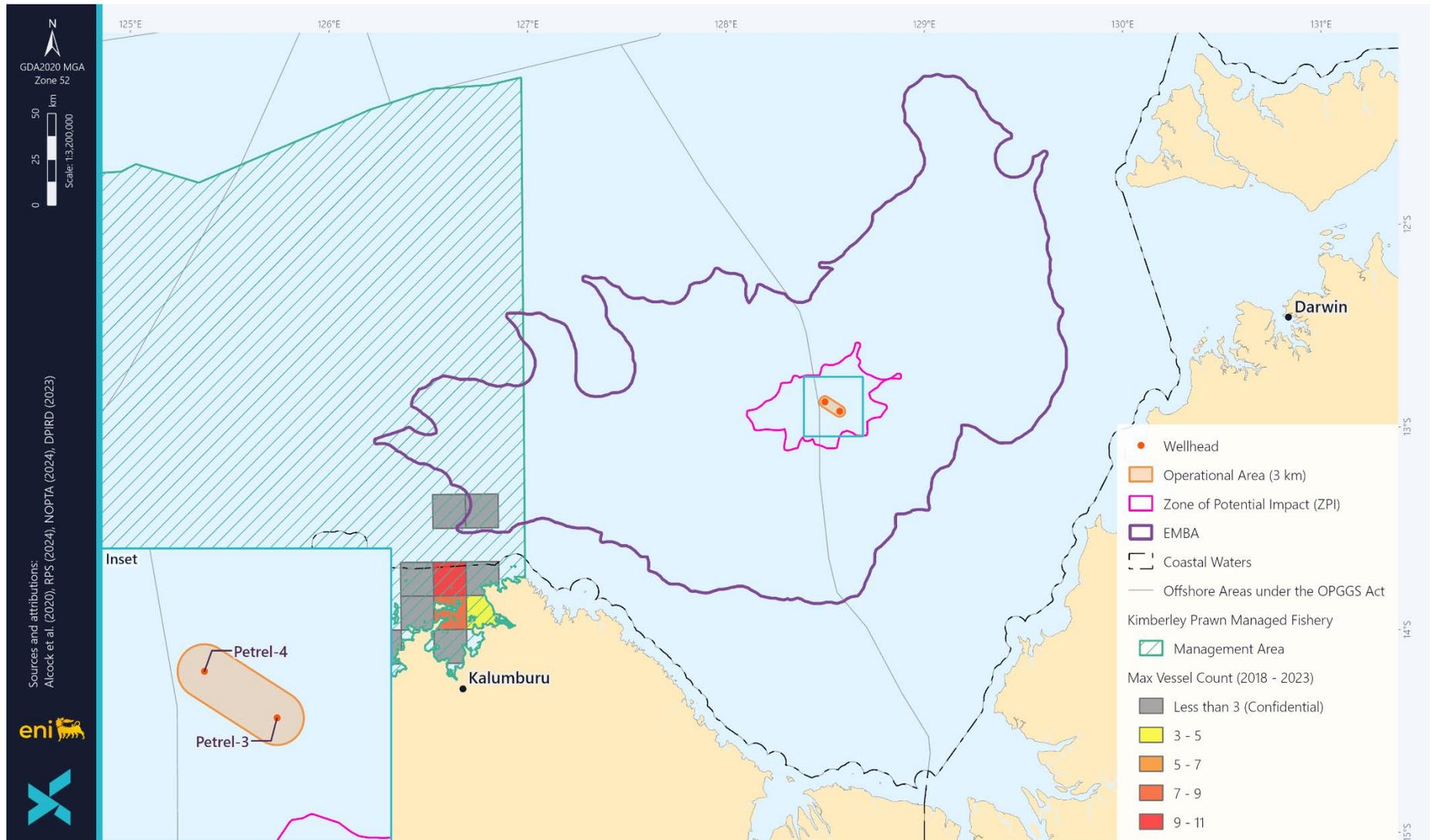


Figure 4-9: WA Kimberley Prawn Managed Fishery activity within the EMBA (2018-2023)

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 139 / 427
			Validity Status	Rev. No.	
				B	

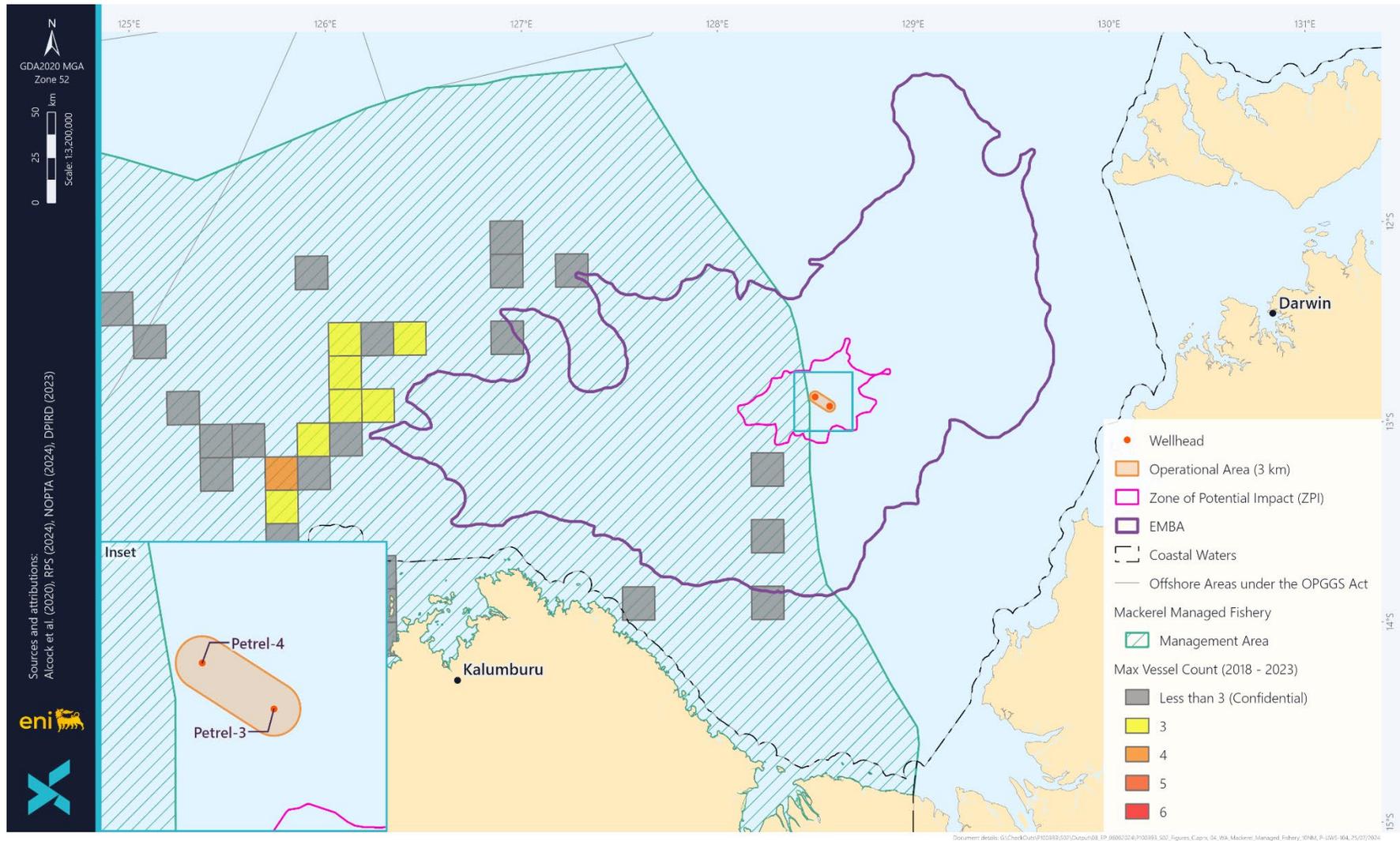


Figure 4-10: WA Mackerel Managed Fishery activity within the EMBA (2018-2023)

	Eni australia Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 140 / 427
			Validity Status	Rev. No.	
				B	

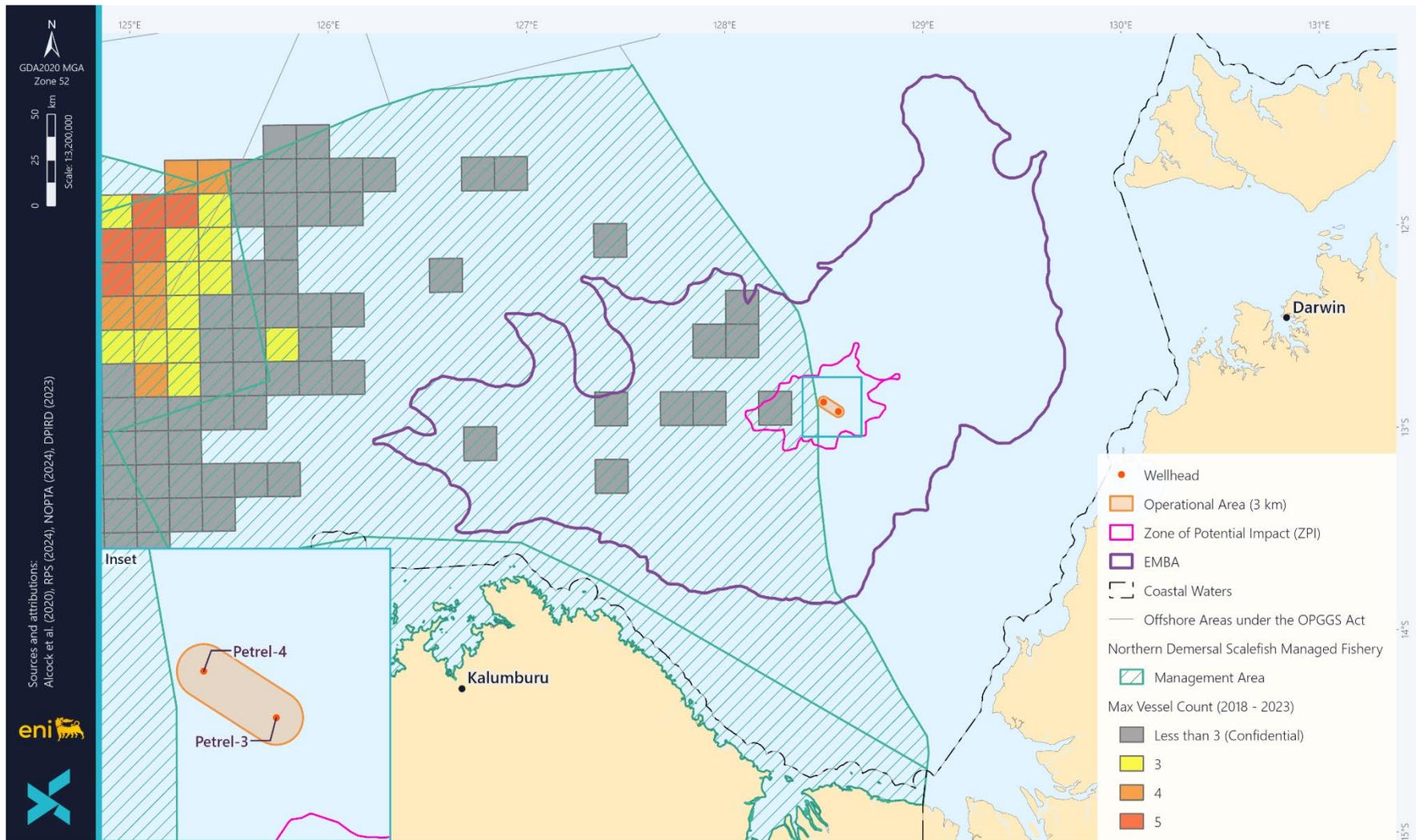


Figure 4-11: WA Northern Demersal Scalefish Managed Fishery activity within the EMBA (2018-2023)

 eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 141 / 427
			Validity Status	Rev. No.	
				B	

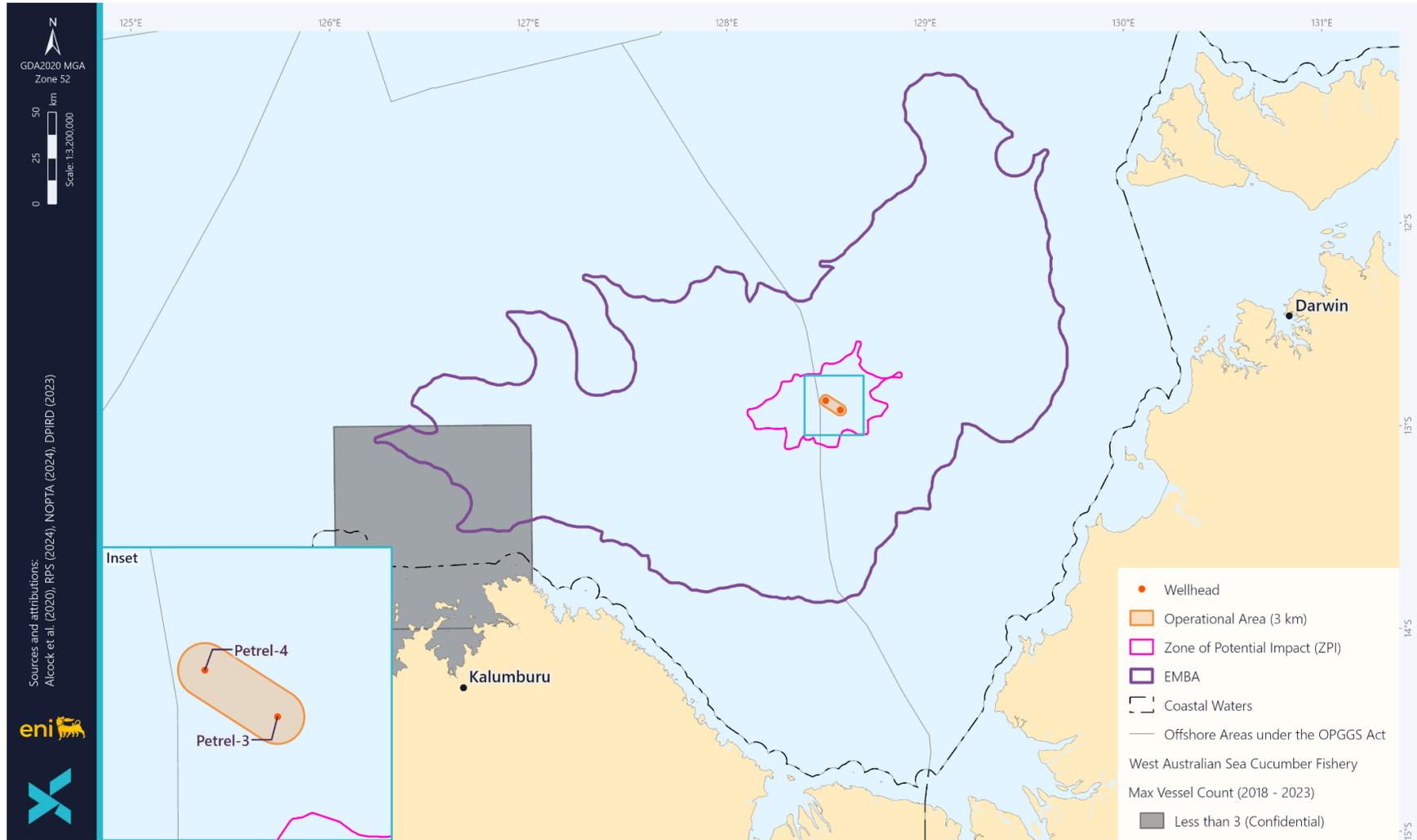


Figure 4-12: WA Sea Cucumber Fishery activity within the EMBA (2018-2023)

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 142 / 427
			Validity Status	Rev. No.	
				B	

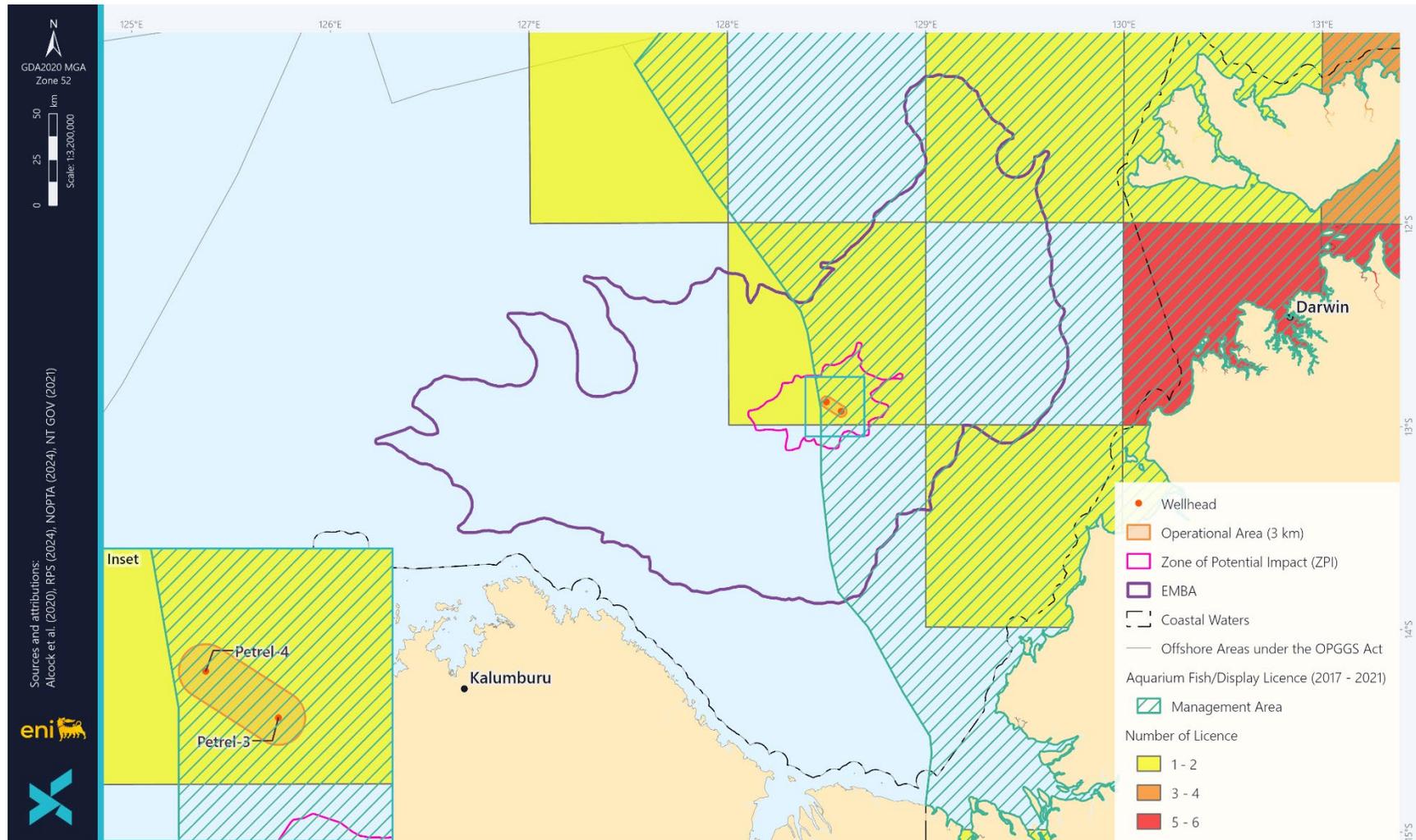


Figure 4-13: NT Aquarium Fishery (Display Licences) activity within the EMBA

	Eni australia Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 143 / 427
			Validity Status	Rev. No.	
				B	

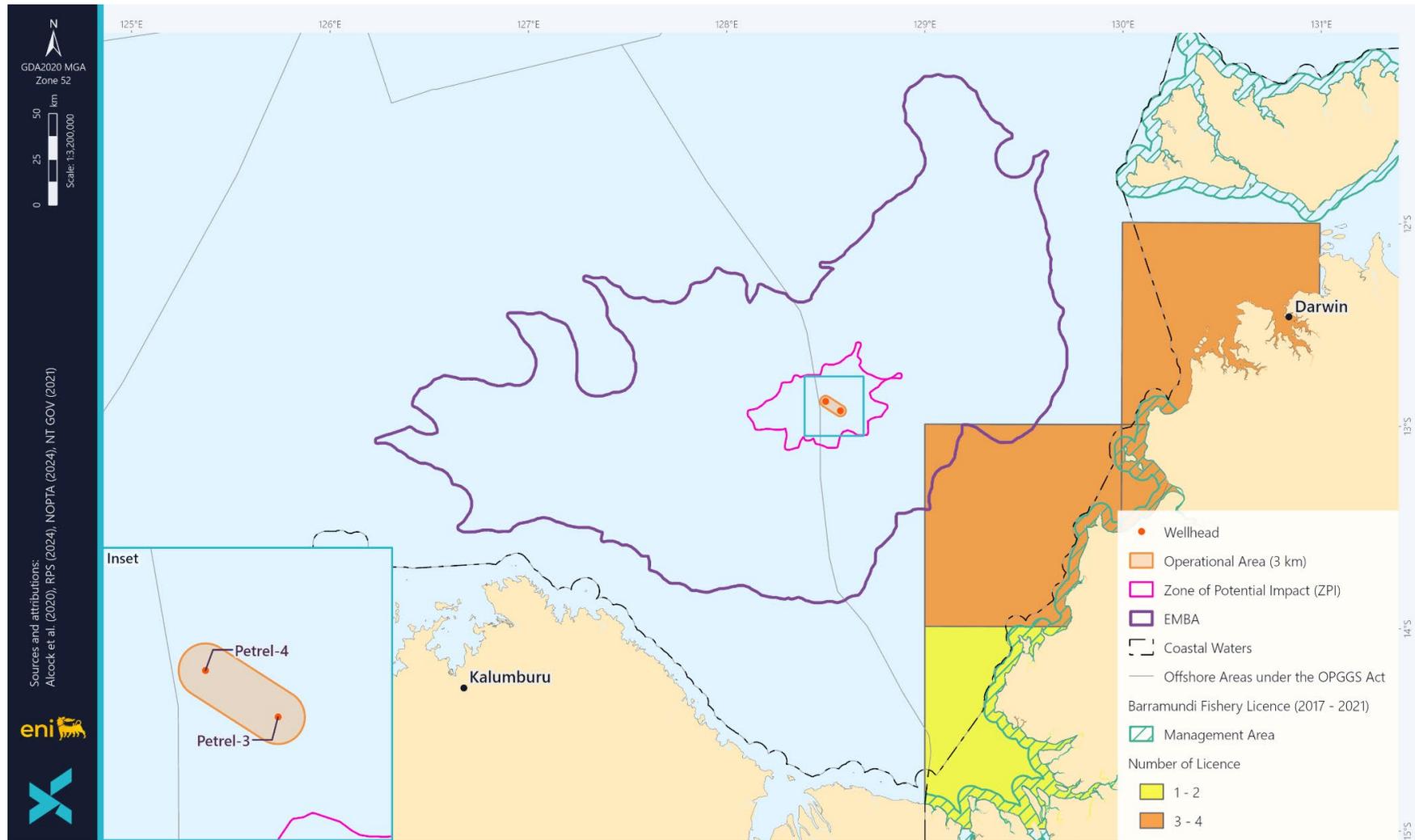


Figure 4-14: NT Barramundi Fishery activity within the EMBA

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 144 / 427
			Validity Status	Rev. No.	
				B	

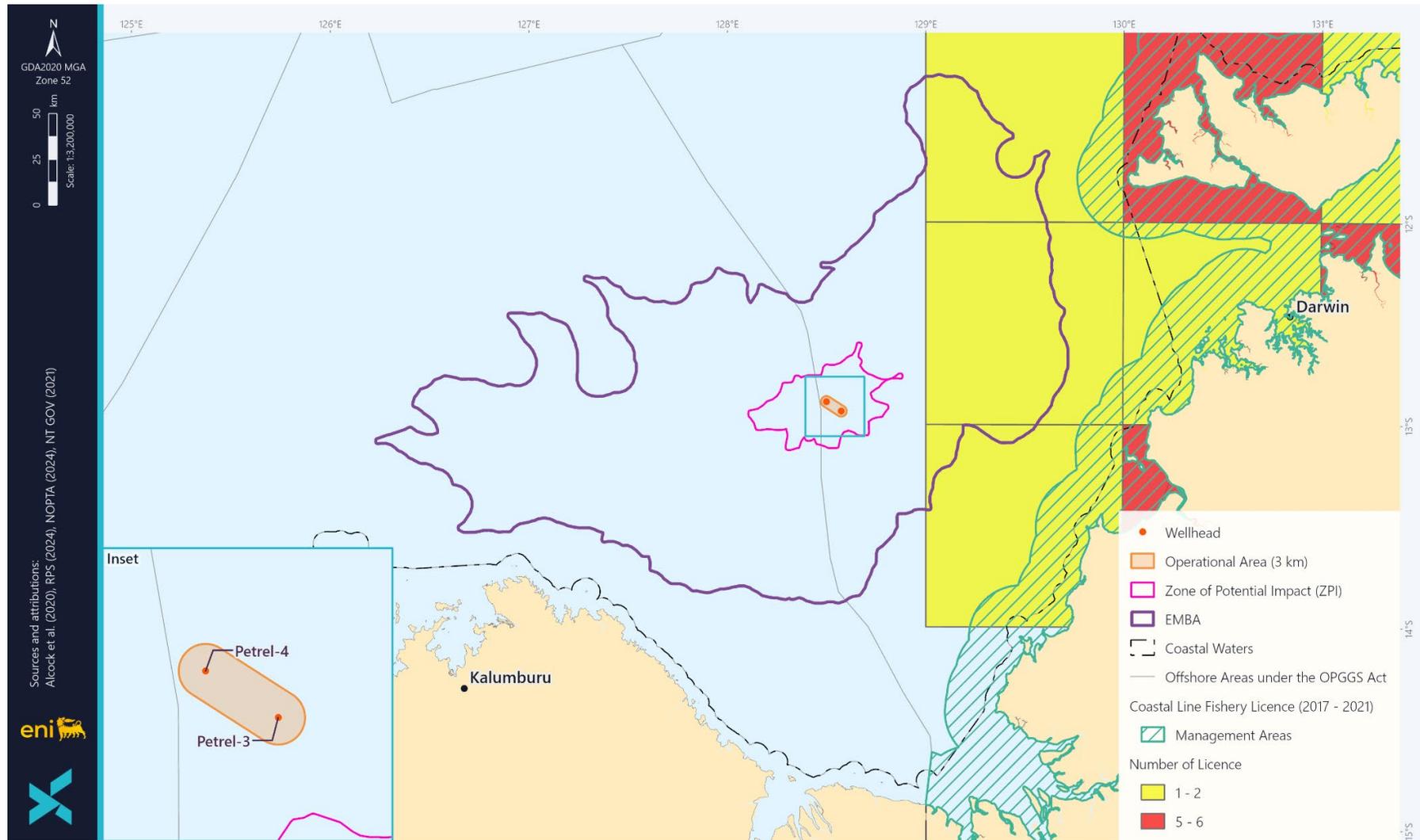


Figure 4-15: NT Coastal Line Fishery activity within the EMBA

	Eni australia Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 145 / 427
			Validity Status	Rev. No.	
				B	

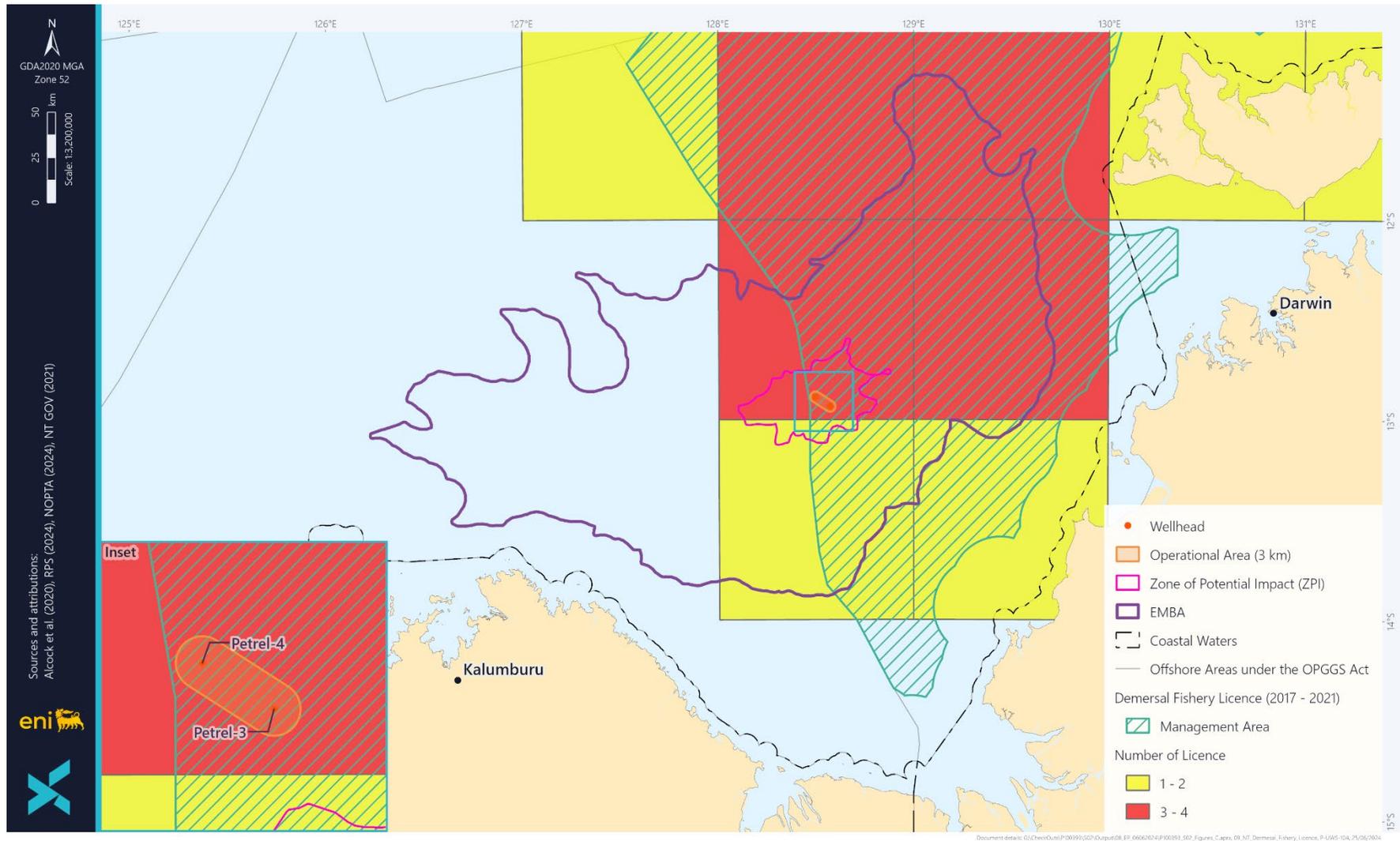


Figure 4-16: NT Demersal Fishery activity within the EMBA

	Eni australia Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 146 / 427
			Validity Status	Rev. No.	
				B	

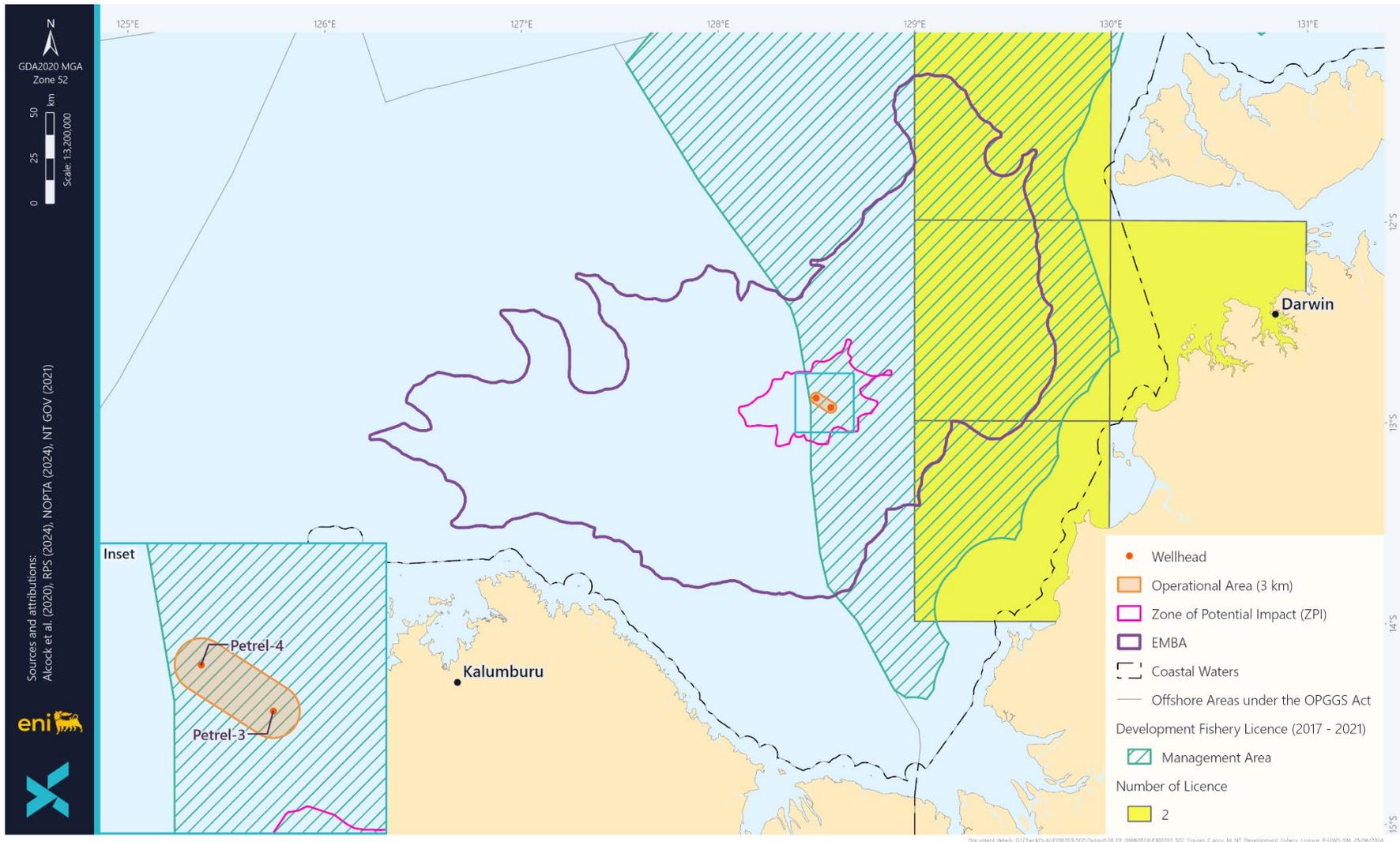


Figure 4-17: NT Development Fishery activity within the EMBA

	Eni australia Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 147 / 427
			Validity Status	Rev. No.	
				B	

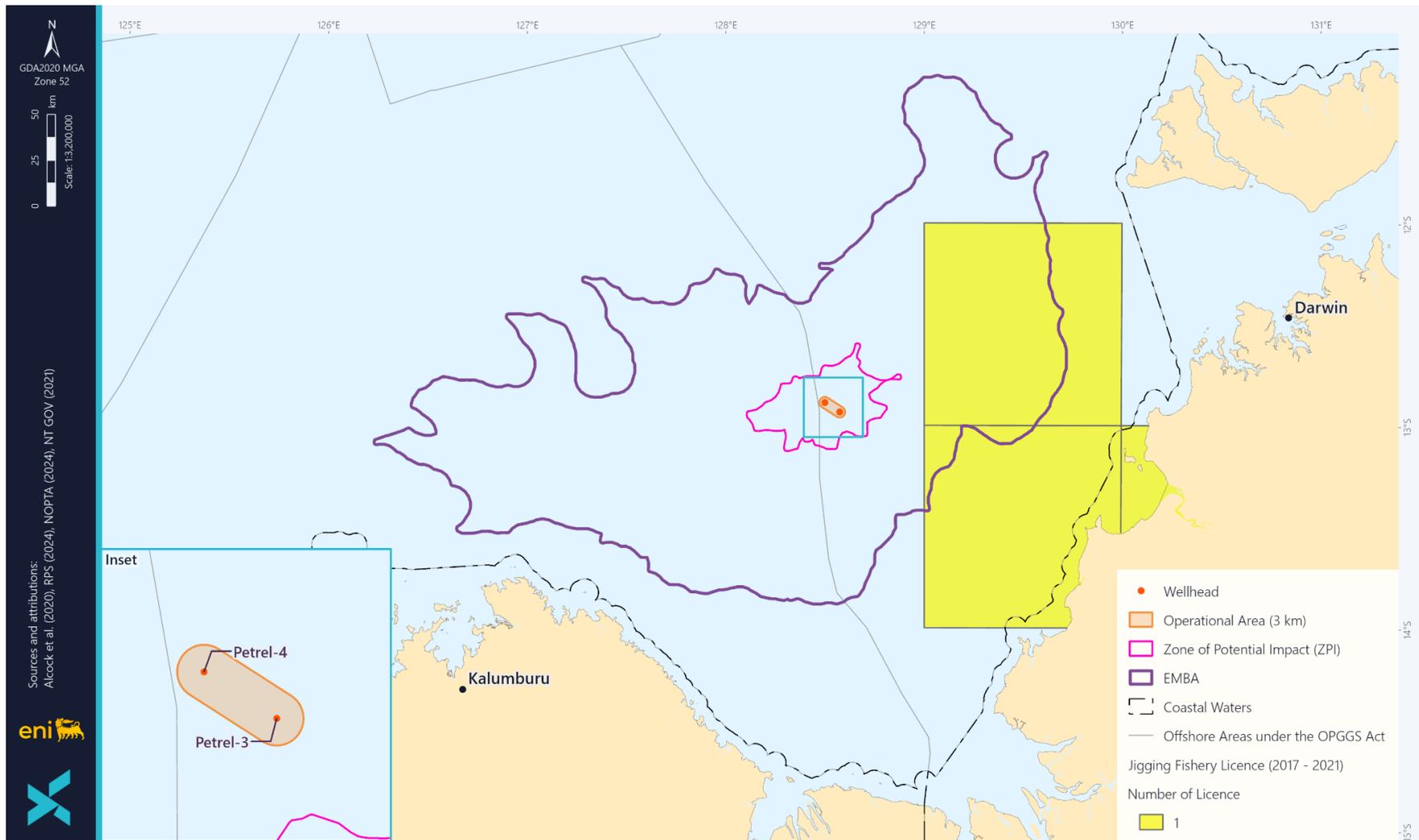


Figure 4-18: NT Jigging Fishery activity within the EMBA

	Eni australia Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 148 / 427
			Validity Status	Rev. No.	
				B	

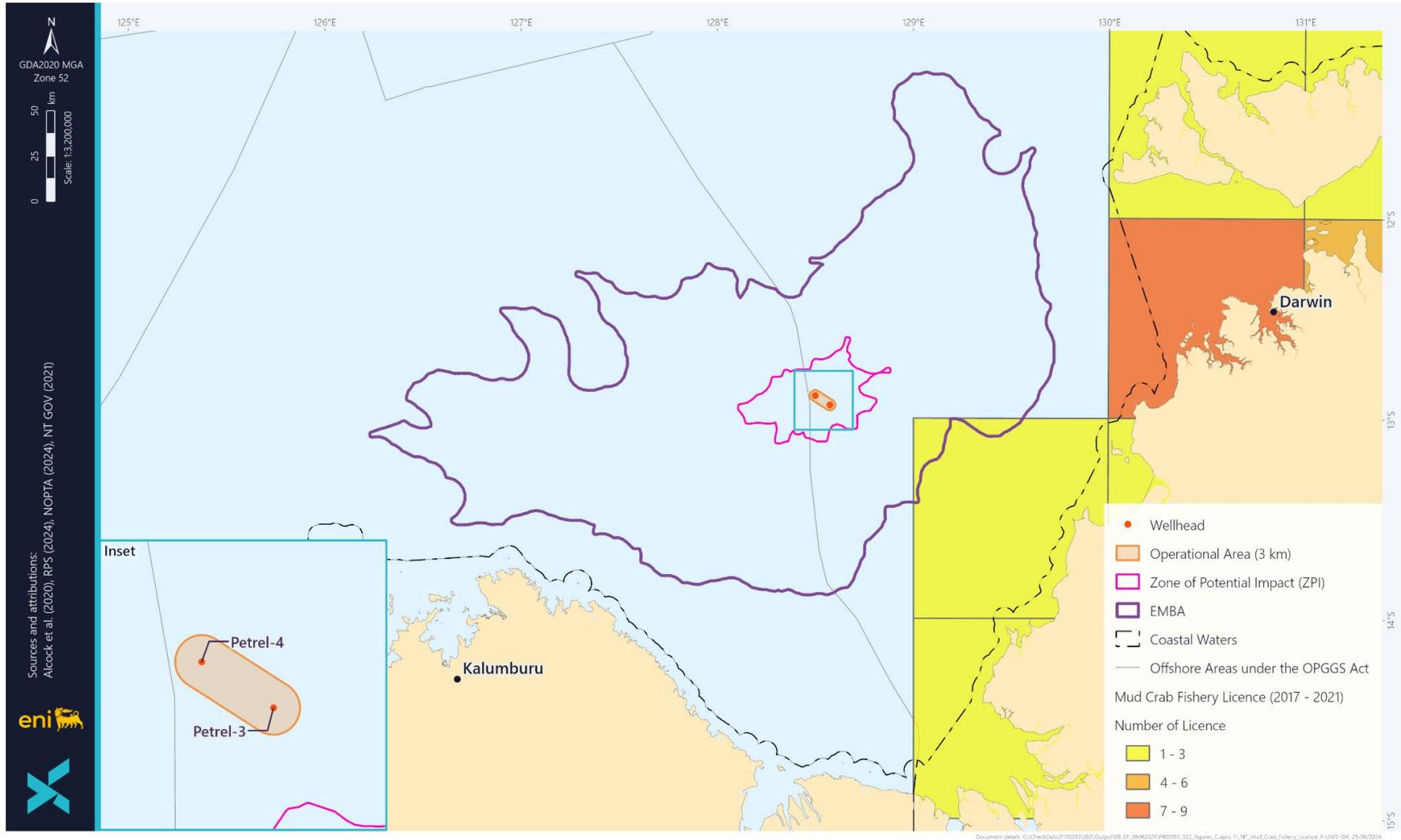


Figure 4-19:NT Mud Crab Fishery activity within the EMBA

	Eni australia Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 149 / 427
			Validity Status	Rev. No.	
				B	

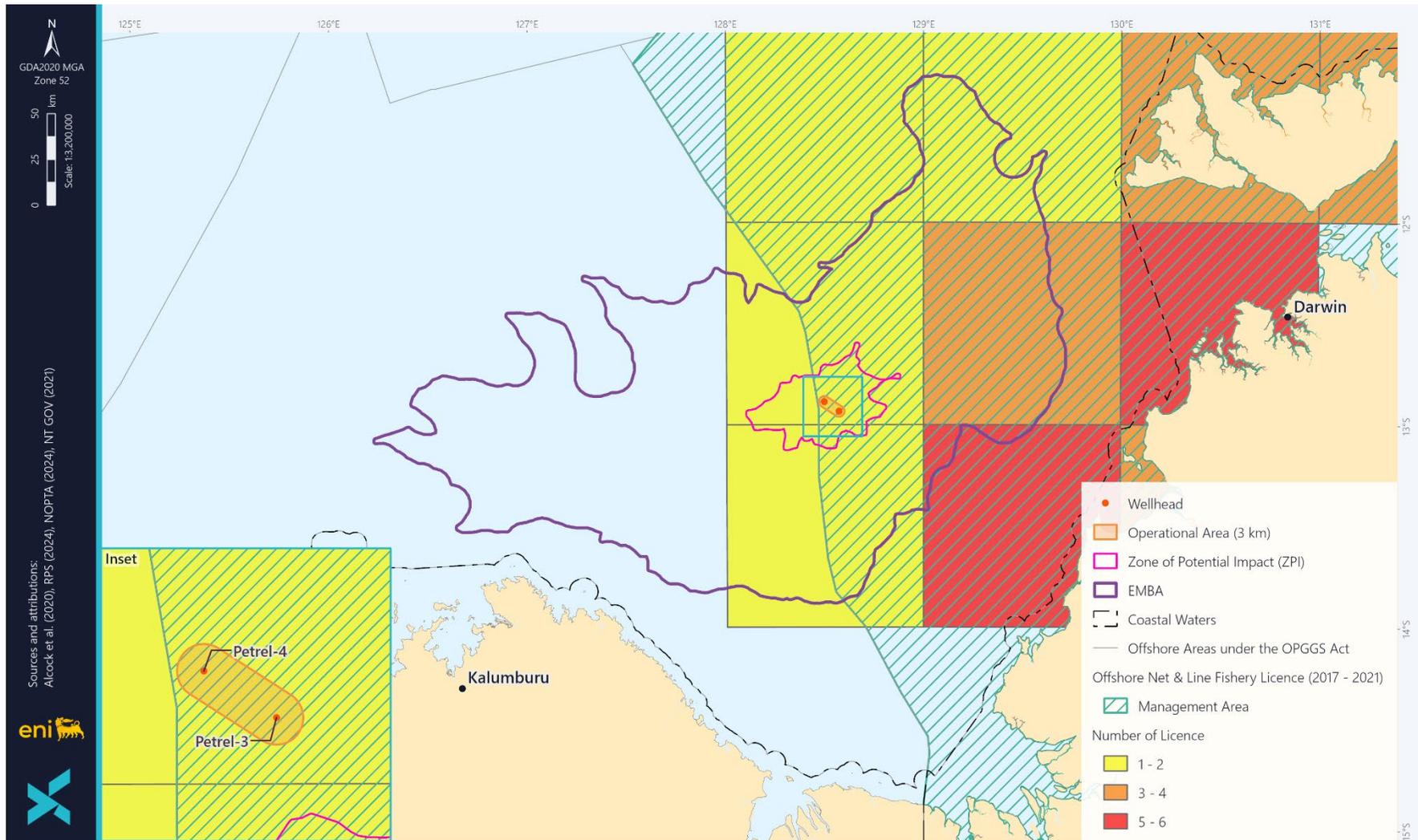


Figure 4-20: NT Net and Line Fishery activity within the EMBA

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 150 / 427
			Validity Status	Rev. No.	
				B	

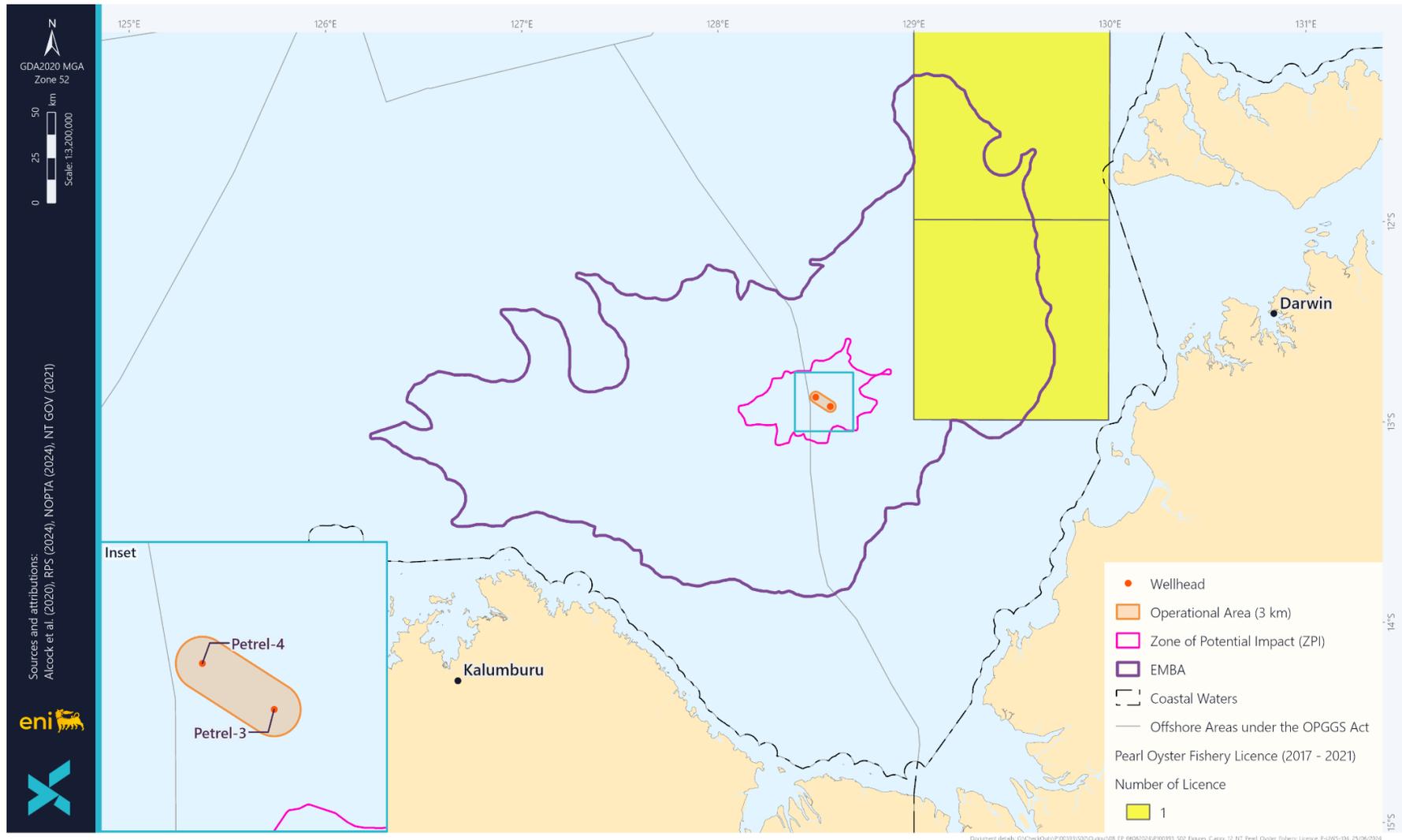


Figure 4-21: NT Pearl Oyster Fishery activity within the EMBA

 eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 151 / 427
			Validity Status	Rev. No.	
				B	

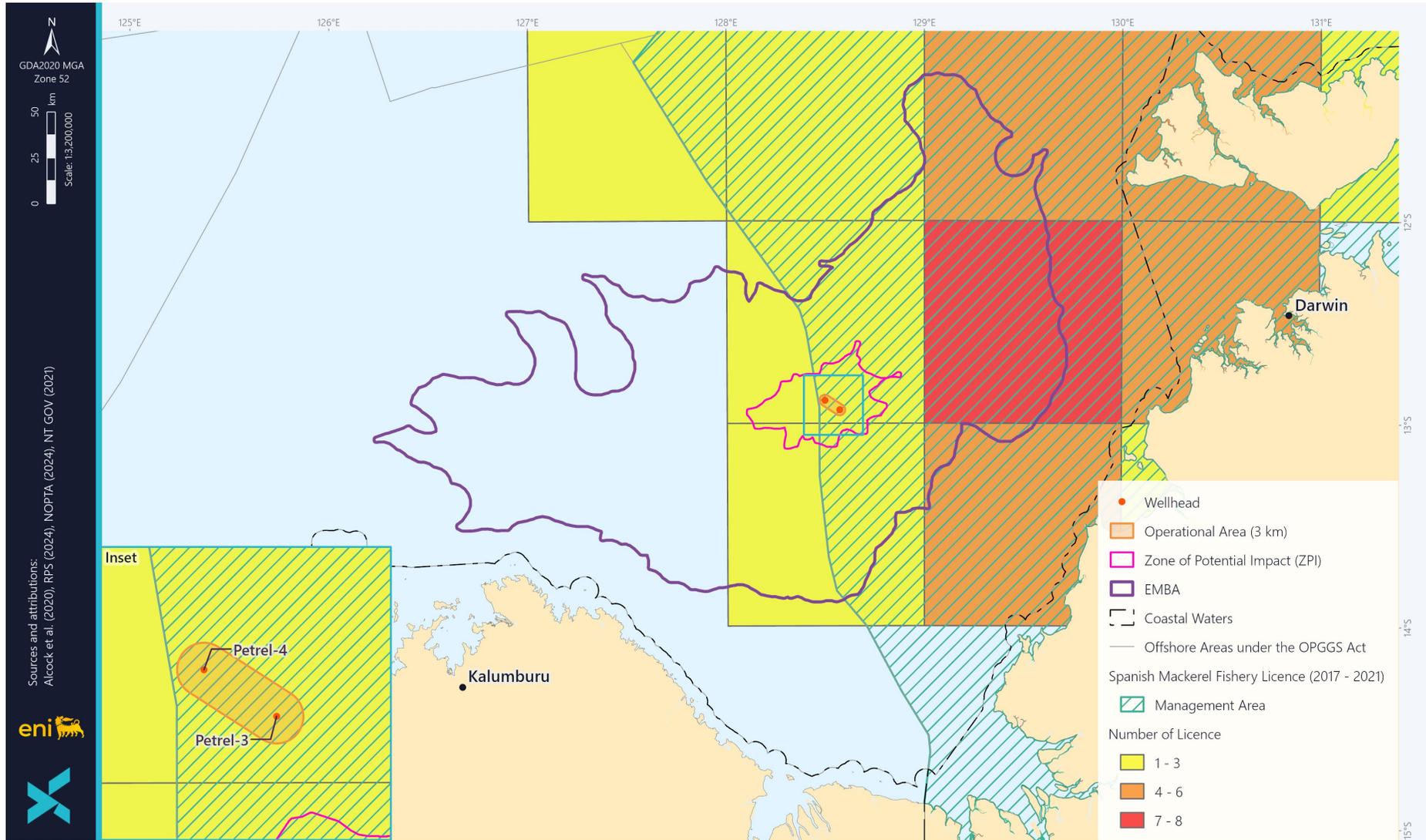


Figure 4-22: NT Spanish Mackerel Fishery activity within the EMBA

 eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 152 / 427
			Validity Status	Rev. No.	
				B	

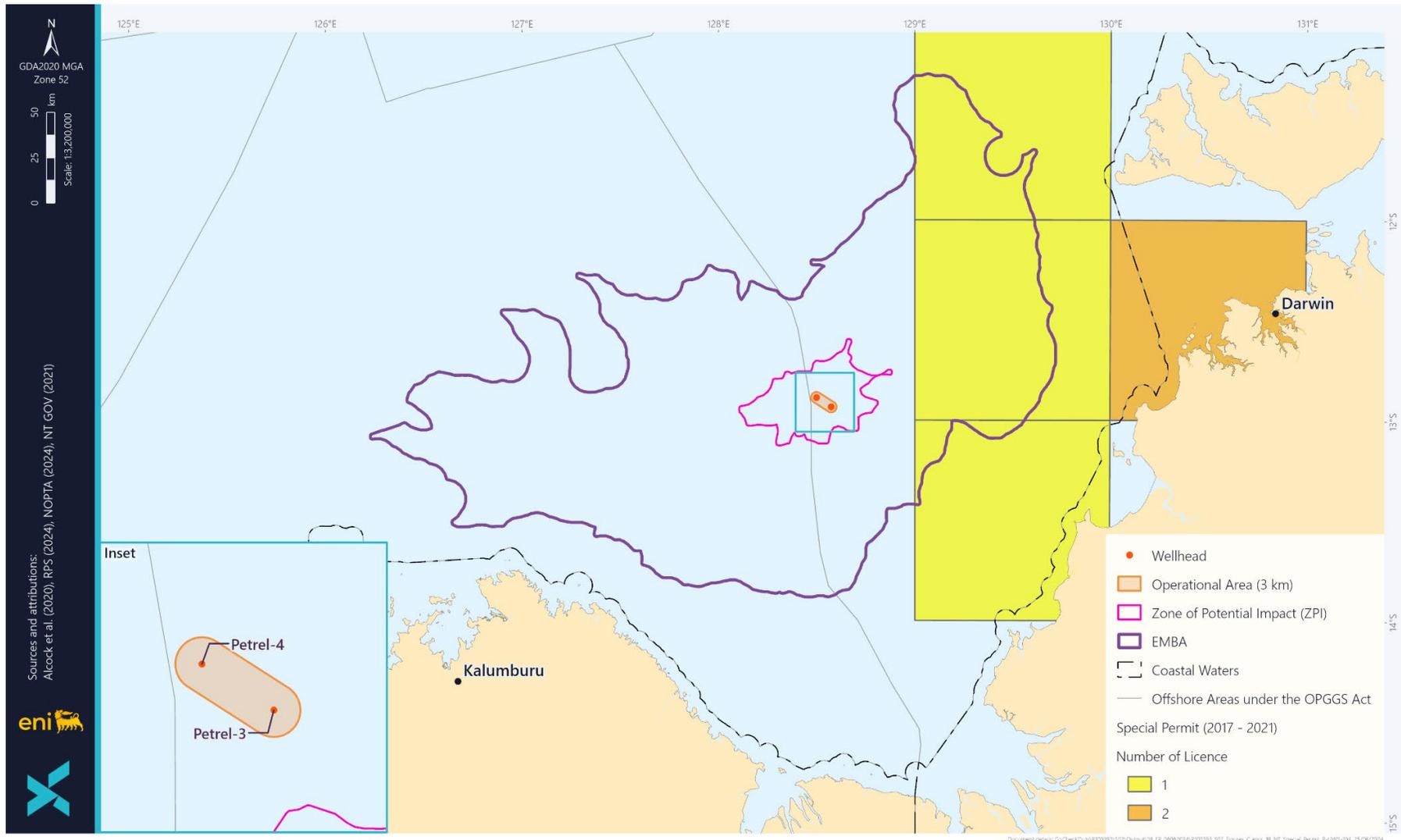


Figure 4-23:NT Special Permit activity within the EMBA

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 153 / 427
			Validity Status	Rev. No.	
				B	

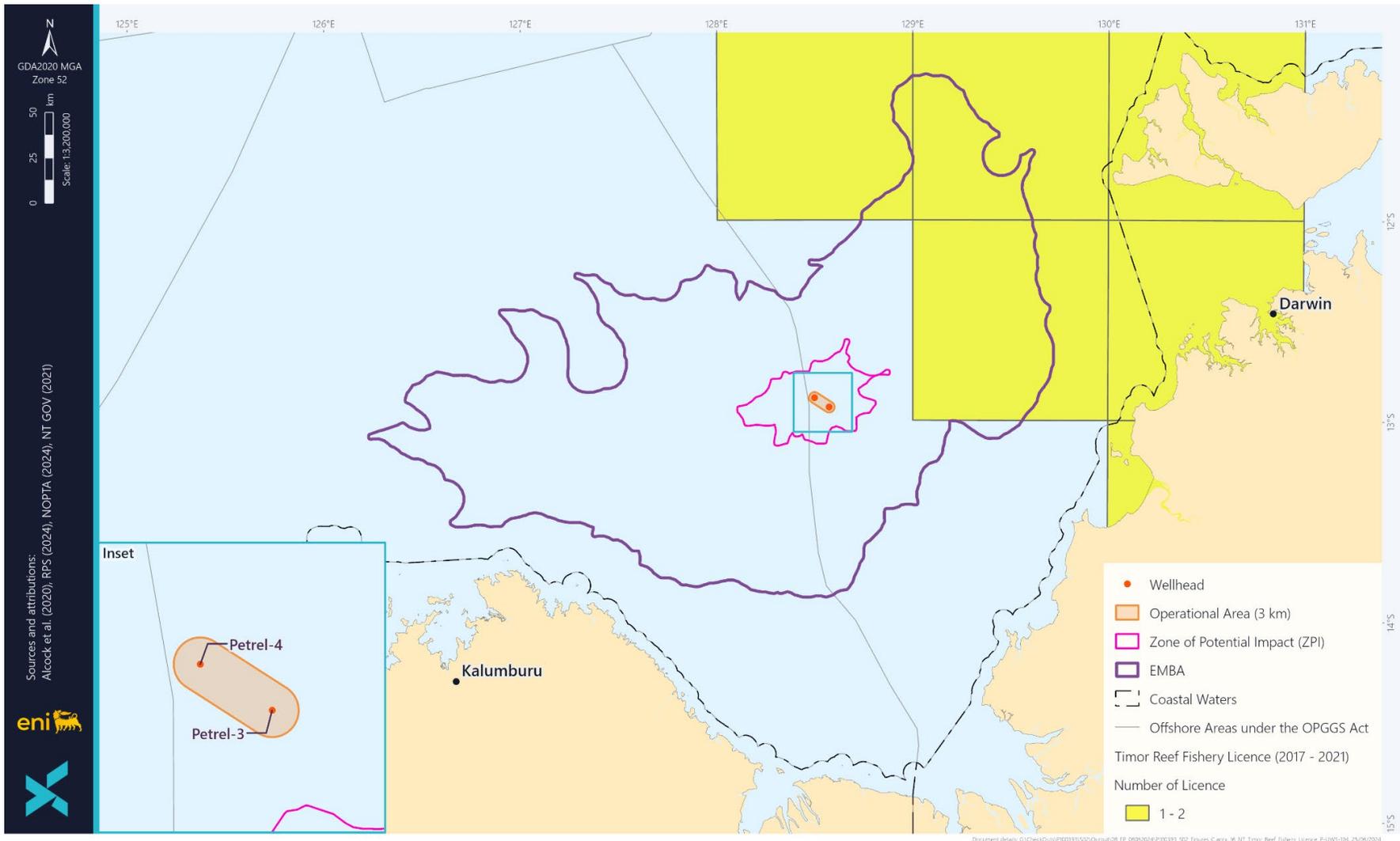


Figure 4-24: NT Timor Reef Fishery activity within the EMBA

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 154 / 427
			Validity Status	Rev. No. B	

4.6.2 Tourism and Recreational Fishing

Charter fishing and tourism operate out of Darwin and the Kimberley (more than 240km from the Operational Area) and generally target areas of high scenic value or offshore coral reef areas. As these attributes are generally sparse in the offshore area of the JBG, the level of charter fishing and tourism is expected to be very low.

Expedition cruise boats operate between Broome and Wyndham and Darwin in the dry months (April to October). The boats remain in proximity to the coastline and are not likely to be present within the Operational Area for any significant periods.

Any recreational and charter fishing from vessels is largely undertaken using lines. Given the distance from boating facilities and slipways and lack of natural attractions in the Operational Area, very little recreational or charter fishing is expected to occur.

4.6.3 Commercial Shipping

Under the *Commonwealth Navigation Act 2012*, all vessels operating in Australian waters are required to report their location daily to the AMSA Rescue Centre (ARC) in Canberra. This Australian Ship Reporting System is an integral part of the Australian Maritime Search and Rescue system and is operated by AMSA through the ARC.

Coastal shipping traffic is common to offshore areas; the largest port in coastal waters adjacent to the activity location is the Port of Darwin. The Port of Darwin is important for trading vessels, fishing vessels, navy ships and cruise ships; and also, services activity associated with the operation of the AustralAsia Railway and the Timor Sea oil and gas developments.

There are no known recognised major shipping routes through the permit areas, however vessels may pass through the Operational Area (Figure 4-25). The suspended wellheads have been in-situ since the 1980's and appear on navigation charts.

AMSA was consulted about the petroleum activities and its coordinate searches in 2023 have indicated there is no major commercial shipping in the vicinity of the Operational Area. The nearest shipping fairway designated by AMSA located more than 80 km away (Figure 4-25). Traffic is limited to infrequent visits by Northern Prawn Fishery (NPF) and other fisheries, whose boats are typically 13 to 25m long.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 156 / 427
			Validity Status	Rev. No.	
	B				

4.6.4 Defence Activities

The Operational Area, ZPI and EMBA is located within the Northern Australia Exercise Area (Figure 4-26). This zone incorporates the majority of the Northern Territories portion of the Bonaparte Basin. This zone is mainly utilised for activities associated with border protection including surveillance, illegal immigration and illegal fishing. This area is occasionally used for live firing military exercises.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 157 / 427
			Validity Status	Rev. No.	
				B	

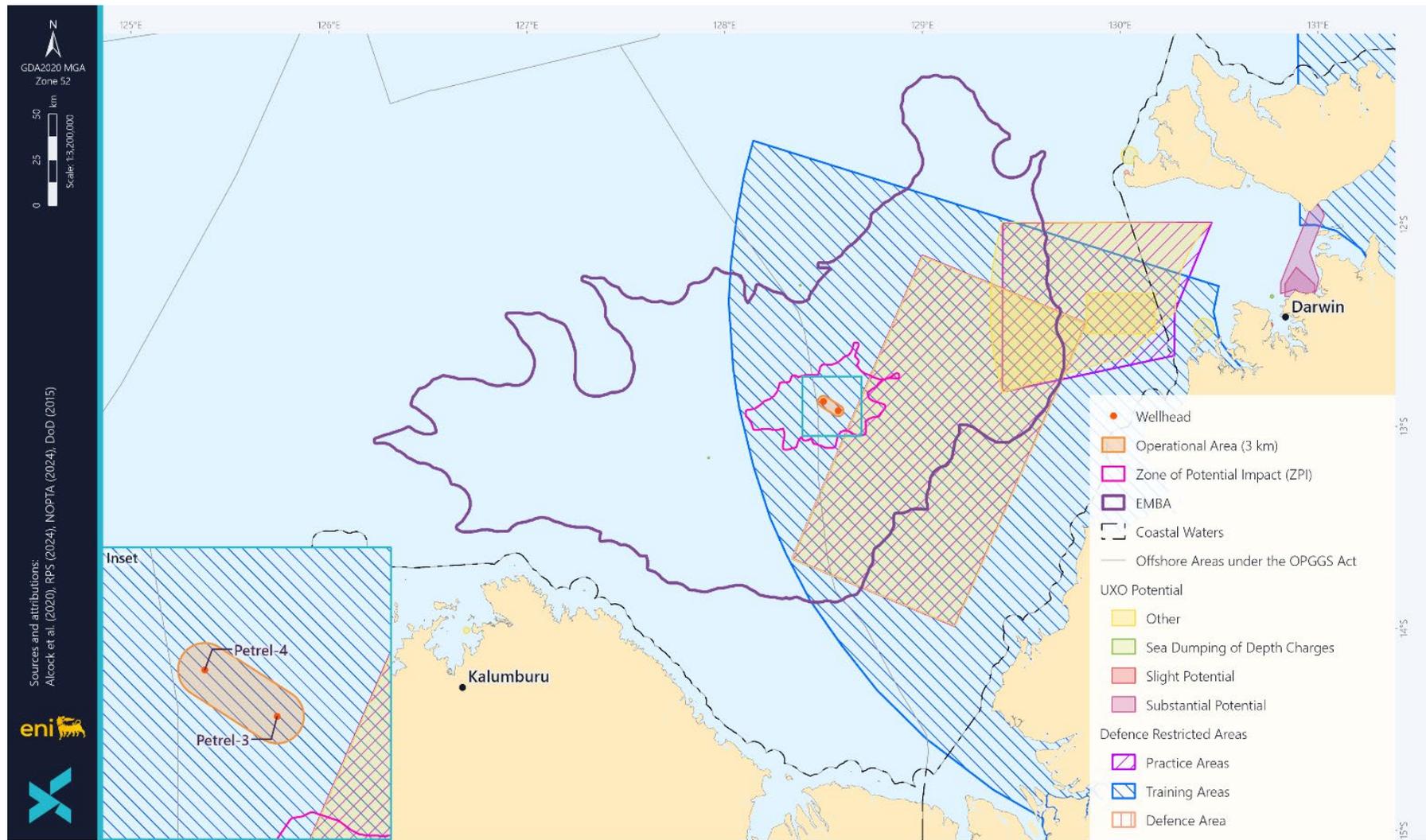


Figure 4-26: Defence Training Areas within the EMBA

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 158 / 427
				Validity Status	Rev. No.	
					B	

4.6.5 Offshore Industry

Offshore industry, in particular petroleum exploration, has been present in the Bonaparte Basin since the late 1940s.

Gas in the Bonaparte Basin is currently produced from the Bayu-Undan and Blacktip fields. Oil was produced from the Laminaria-Corallina and Buffalo fields and is currently produced from the greater Montara fields (DISR, 2024).

There are five yet to be developed gas fields in the region – Sunrise/Sunset/Troubadour, Barossa/Caldita, Petrel/Tern/Frigate, Cash/Maple, and Evans Shoals (NOPSEMA, 2024).

No Carbon Capture and Storage (CCS) permits overlap with the NT/RL1 and WA-6-R permits. However, there are two CCS permits on the edge of NT/RL1 and WA-6-R. The permits G-7-AP and G-11-AP are held by INPEX and Santos, respectively, and there is a potential for future development in the surroundings of Petrel-3 and Petrel-4. However, at the time of writing, the only publicly available EP on the NOPSEMA website is the Bonaparte Basin Exploration Drilling, which commenced in February 2024 and will not overlap with the Operational Area.

Table 4-12 provides the EPs that were accepted and under assessment at time of writing; according to NOPSEMA’s website. Figure 4-27 shows petroleum and CCS infrastructure and permit areas within the EMBA.

Table 4-12: Petroleum activities within the Operational Area, ZPI and the EMBA

Status	Project Name	Titleholder	Timing	Presence		
				Operational Area	ZPI	EMBA
Approved	Beehive Pre-Drill Geotechnical Assessment WA-488-P EP	EOG	Pending notification	x	x	✓
	Beehive-1 Exploration Drilling WA-488-P	EOG	Pending notification	x	x	✓
	Bonaparte Basin Exploration Drilling EP (CCS)	INPEX	Start date Feb 2024	x	x	✓
	Bayu-Undan to Darwin Gas Export Pipeline EP	Santos	Ongoing	x	x	✓
	Blacktip Drilling EP	Eni	Start date est. 2024-2027	x	x	✓
Under assessment	Beehive Multi-Well Exploration Drilling EP	EOG	Est. Q1 2025 – Q4 2029	x	x	✓
	Blacktip Operations EP	Eni	Ongoing	x	x	✓
	Tern-2 Plug & Abandonment EP	Santos	Est. late 2024	x	x	✓

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 159 / 427
			Validity Status	Rev. No.	
				B	

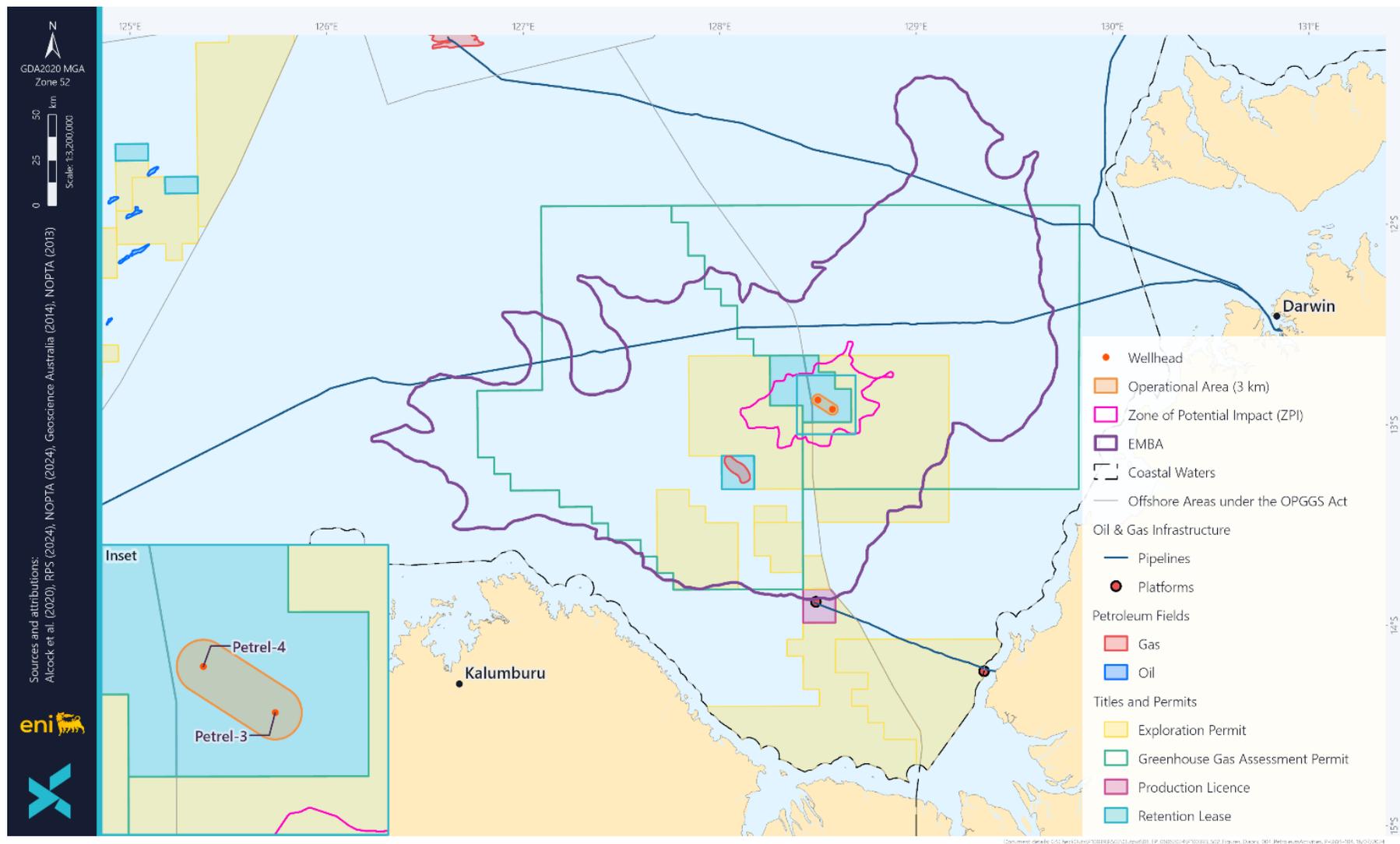


Figure 4-27: Offshore industry infrastructure within the EMBA

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 160 / 427
			Validity Status	Rev. No. B	

4.6.6 Subsea Cables

Submarine cables are underwater infrastructure which transfer communications or electricity, linking one area of Australia to another, or Australia to other countries. A network of submarine cables extends from Darwin through the Timor Sea and offshore waters of the Kimberley, linking Northern Australia with South-East Asia. The North West Cable System intersects the EMBA (indicative routes shown in Figure 4-28). No subsea cables intersect with the Operational Area or ZPI.

The North West Cable System, which heads north-west out of Darwin Harbour, passes north of the Joseph Bonaparte Gulf (JBG) and travels west around the Kimberly to Port Headland, WA, and the Asia Connect Cable-1 and Hawaiki Nui Cable, which head northwest out of Darwin Harbour towards Timor Leste.

Subcom have proposed a new subsea cable which will also cross the EMBA (Figure 4-28).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 161 / 427
			Validity Status	Rev. No.	
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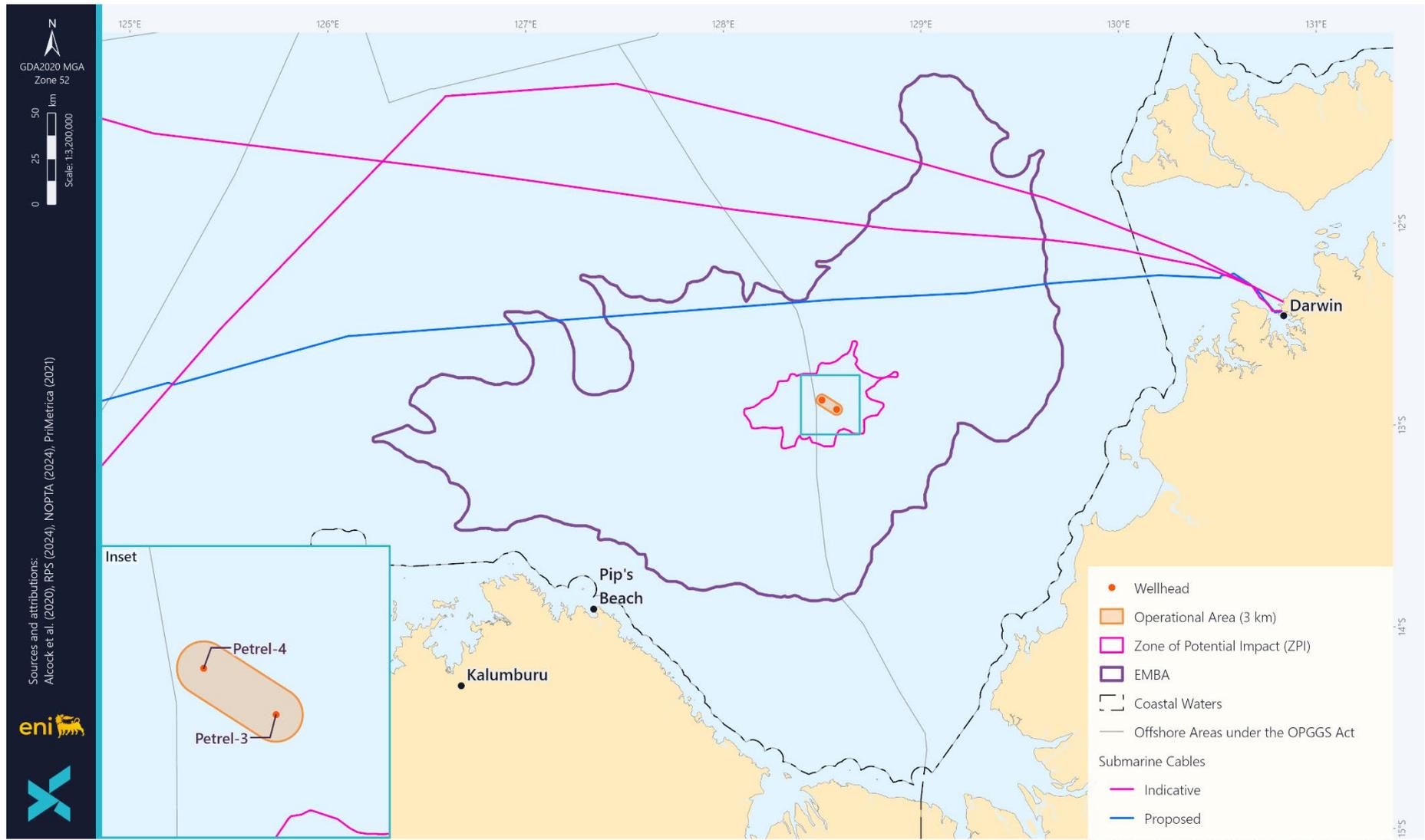


Figure 4-28: Existing and proposed subsea cables within the EMBA

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 162 / 427
			Validity Status	Rev. No. B	

4.6.7 Shipwrecks

Australia protects its shipwrecks and their associated relics that are older than 75 years through the *Historic Shipwrecks Act 1976* and Heritage (Historical Shipwrecks) Regulations 2007, administered in collaboration between the Commonwealth and the States, Northern Territory and Norfolk Island.

Some historic shipwrecks also have an associated protected or no-entry zones; these zones cover an area around a wreck site and ensures that a fragile or sensitive historic shipwreck is actively managed. No historic wrecks with protected zones exist within the EMBA, the closest wrecks with protected zones are the I-124 (Japanese Submarine) (1942) and the SS Florence (1942) which are located approximately 52km and 96km east of the EMBA, respectively.

One shipwreck site does occur within the EMBA (Figure 4-29). The Sedco Helen was wrecked in 1970 and is located approximately 4km north-northwest of the Petrel-4 well in approximately 100m of water depth.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 163 / 427
			Validity Status	Rev. No.	
				B	

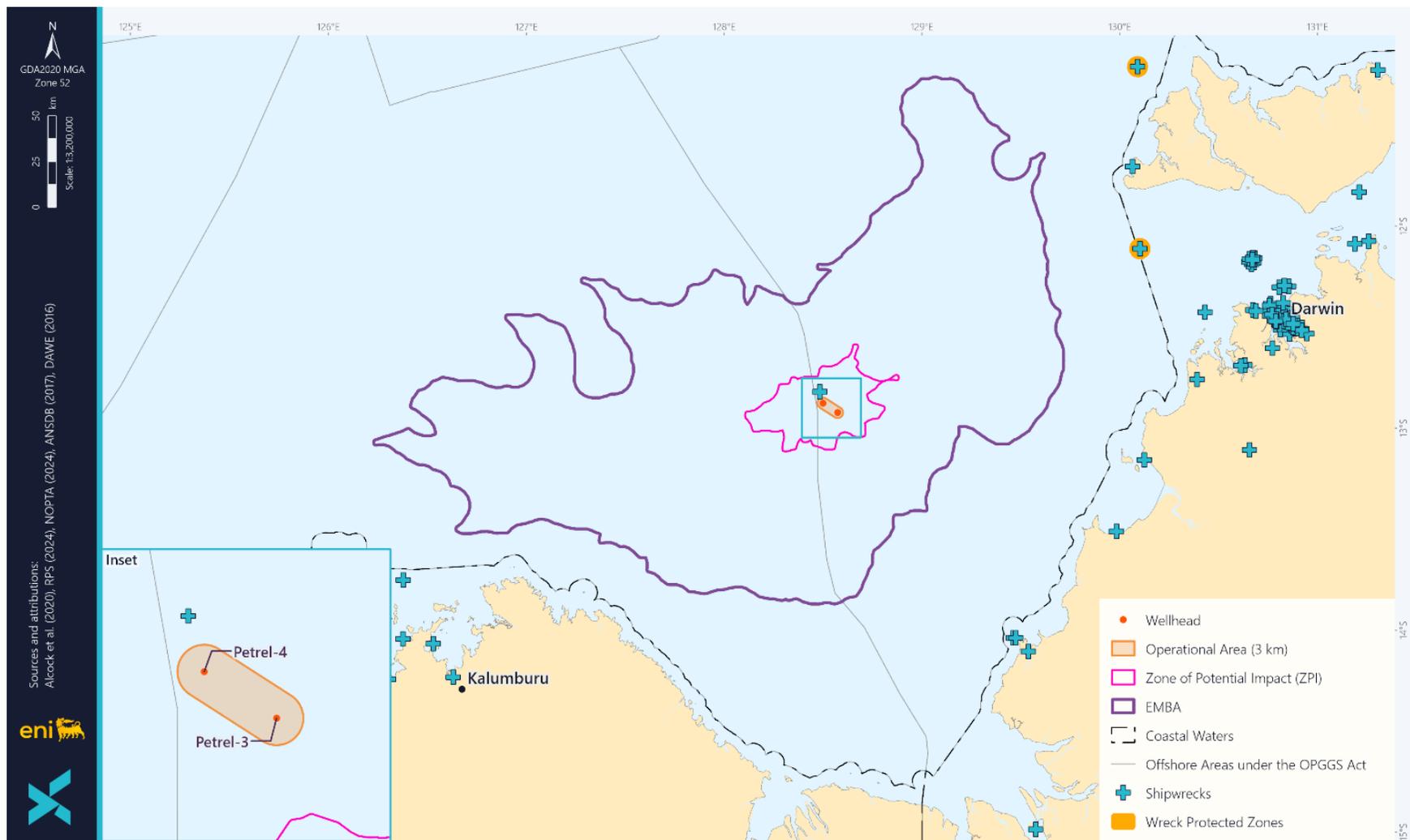


Figure 4-29: Shipwrecks within the EMBA

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 164 / 427
				Validity Status	Rev. No. B	

4.6.8 First Nations

Australian First Nations culture is the oldest continuing culture in the world and is central to Australia’s national heritage. First Nations peoples continuing connection to country is recognised in Australia under several acts. At a national level, the *Native Title Act 1993* establishes Native title, which recognises, under Australian common law, pre-existing Indigenous rights and interests according to traditional laws and customs (DCCEEW, 2024e).

Australia has a range of laws to protect First Nations’ heritage. Aboriginal land in the NT is governed by the *NT Aboriginal Land Rights Act 1976* (NT), which affords Traditional Owners sovereign rights to country. In WA, recognition of Aboriginal rights is afforded by the *Native Title Act 1993* (Cth) and *Land Administration Act 1997* (WA), which give rights to access, live upon, forage, harvest and hunt upon and carry out traditional cultural practises on country.

Aboriginal corporations and Registered Native Title Prescribed Bodies Corporate (PBCs) that are on the shorelines within proximity to the EMBA are identified in Figure 4-30.

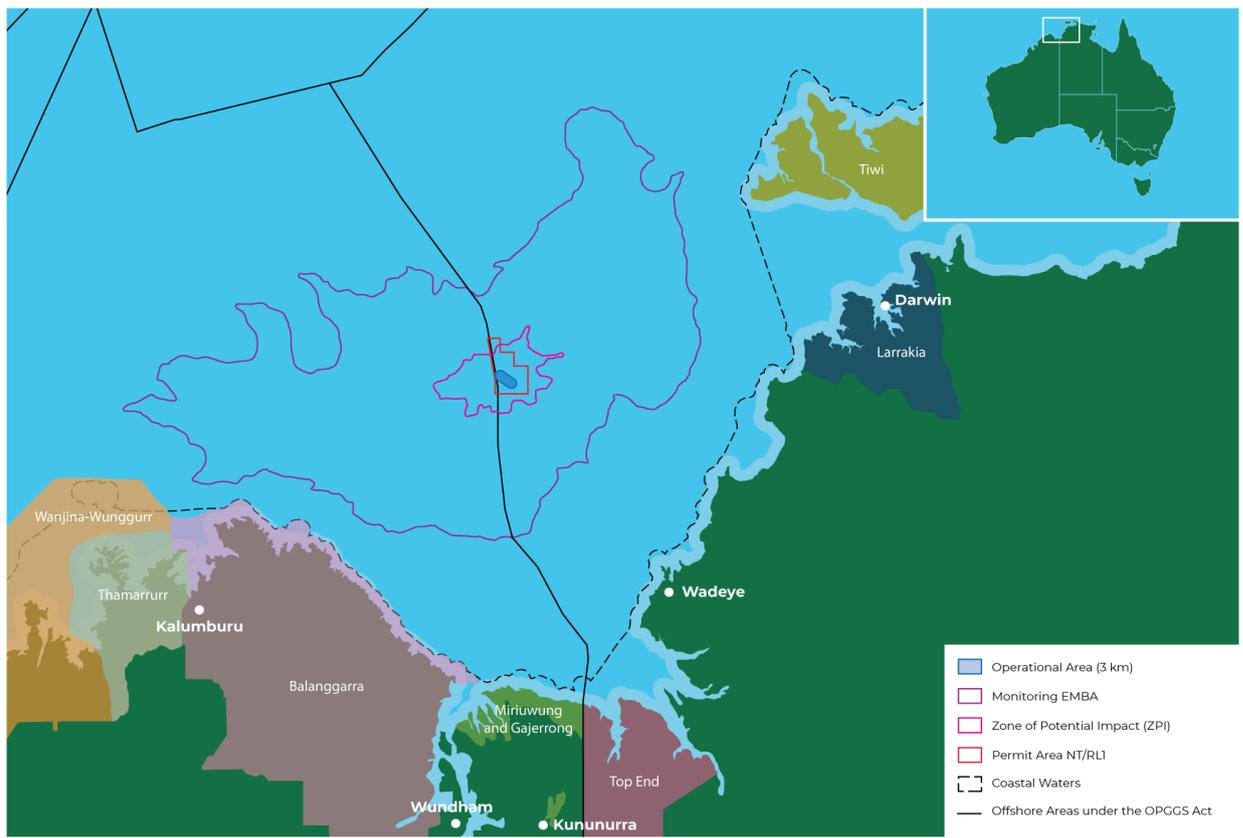


Figure 4-30: Aboriginal corporations and Registered Native Title PBCs

For the EMBA, three Aboriginal land councils represent the respective Traditional Owners in the regions adjacent to the EMBA: the Kimberly Land Council in WA; and the Northern Land Council and Tiwi Land Council in NT. There are also Prescribed Bodies Corporate and Aboriginal non-government organisations (NGOs) that represent First Nations peoples both across the NT and WA.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 165 / 427
			Validity Status	Rev. No. B	

Thamarrurr Country

The land around Wadeye, to the southeast of the Operational Area is the Thamarrurr Region, owned by the Traditional Owner groups of the Daly River Port Keats Aboriginal Land Trust. The land is inalienable freehold land, held under the *Aboriginal Land Rights (Northern Territory) Act 1976*.

Within the Thamarrurr Region, there are seven language groups and more than 20 clan groups, as identified in Figure 4-31 (Streten et al., 2020; Ivory, 2009). The Thamarrurr Development Corporation Ltd (TDC) is a not-for-profit corporate entity owned by members of the four main ceremonial groups – the Wangka, Lirrga, Wulthirri and Tjanpa peoples – and established by the 20 clan groups of the Thamarrurr Region. The TDC represents the interests of these clan groups, which are patrilineal land-owning groups with clear estates and boundaries. Under Thamarrurr, all land-owning groups have traditional rights and responsibilities over their land and are able to work together to resolve issues involving that land (TDC, 2023). Thamarrurr Rangers are an important part of the TDC, employing 20+ local Indigenous staff and four non-Indigenous support staff (TDC, 2023). The Thamarrurr Rangers actively engage with Traditional Owners and community members in natural and cultural resource management as they work across 18,000km² of Country and 240km of coastline (TDC, 2023).

	Eni australia Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 166 / 427
			Validity Status	Rev. No. B	



Figure 4-31: Thamarrurr Region and 20 clan regions

Other Northern Territory Country

In coastal areas of the NT that are located within close proximity to the EMBA, Native Title claims and determinations are limited to the pastoral lease areas located south of Wadeye and under the responsibility of the Top End (Default PBC/CLA) Aboriginal Corporation RNTBC (Registered Native Title Body Corporate); and the area in and around Darwin linked to Larrakia Nation peoples. Whilst, as yet, Larrakia people have no legal native title recognition, the Larrakia people have continued connection to country and continue to care for land and water across this region. In addition, the Top End (Default PBC/CLA) Aboriginal Corporation RNTBC, is currently the registered native title body corporate for all determinations of native title in the northern part of the NT.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 167 / 427
				Validity Status	Rev. No. B	

Balanggarra Country

Approximately 160km to the south-south-west of the Operational Area, the land comes under the ownership of the Balanggarra Aboriginal Corporation (BAC), who administer the land on behalf of the Balanggarra People. Balanggarra means 'one mob together for Country' and the claim area covers about 2.6 million hectares of land and Sea Country in the north Kimberley. Balanggarra Country has 'blue-water Country' from north of the Forrest River drainage system west to Kalumburu (including Cape Londonderry, the lower Drysdale River as well as the Lyne, Berkeley and King George Rivers), plus 'saltwater Country', the reef, and offshore islands, including Sir Graham Moore and Governor Islands, and 'brown-water Country', the remainder, which is in the southern part and takes in all the land drained by the Forrest River system, and the muddy waters and some offshore islands of the Cambridge Gulf, like Adolphus and Lacrosse Islands (BAC, 2011).

The Balanggarra People live in communities in Kalumburu, Wyndham and Kununurra. A number of people also live at Balanggarra-managed Home Valley Station. Balanggarra Rangers look after Country in both the traditional way (as handed down by their ancestors); and the 'western' way using contemporary natural resource management practices. The Balanggarra Rangers use traditional knowledge when looking for certain animals on Country and to orientate themselves around Country, and western knowledge for flora and fauna surveys, weed eradication, water testing and coastline monitoring (BAC, 2011). Both traditional and western practices are utilised for fire management.

Balanggarra Rangers participate in the North Australian Land and Sea Management Alliance (NAILSMA) Saltwater People Network and work together with Traditional Owners of Saltwater Country along the whole of North Australia to share knowledge and ensure that marine animals are well looked after for future generations (BAC, 2011).

Miriuwung and Gajerrong Country

The land to the east of the Balanggarra Aboriginal Corporation land comes under the MG Corporation (who administer the land on behalf of the Miriuwung and Gajerrong people). The Miriuwung and Gajerrong people have Native Title determination over two adjacent areas of the East Kimberley in WA and crossing into the Northern Territory, totalling approximately 7,500km² of land (MG Corporation, 2024). In addition, the MG Corporation owns agricultural land at Goomig as part of a settlement under the Ord Final Agreement; 50,000 hectares of freehold land at Yardungarrl (located on the WA/NT border, which is home to eight Aboriginal communities) and 107 hectares at Weaber Plains Reserve to the east of the Kununurra townsite (which offers protection of sacred sites and direct employment opportunities for MG people) and 125,000 hectares at Reserve 31165, adjacent to Lake Argyle (MG Corporation, 2024).

MG Corporation land covers mangrove coastal flats and the mouths of river valleys in the north, progressing to grassy plains and savannah forests and woodlands, deep gorges cutting through sandstone and huge limestone outcrops, with the southernmost area home to semi-desert savannah. An agreement is in place between MG Corporation and the Department of Biodiversity, Conservation and Attractions - Parks and Wildlife (DBCA) for the operation of a ranger program at Reserve 31165. The ranger program provides funding for four full-time rangers and a ranger supervisor. Each of the rangers represents one of the four Dawang groups within the reserve (MG Corporation, 2024).

Wunambal Gaambera Country

The land to the west of the Balanggarra Aboriginal Corporation land comes under the Wunambal Gaambera Aboriginal Corporation (who administer the land on behalf of the

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 168 / 427
				Validity Status	Rev. No.	
	B					

Wunambal Gaambera people). Wunambal Gaambera Country covers approximately 25,000km² of land and wundaagu (sea). Like Wunambal Gaambera their ancestors, the Wunambal Gaambera call their Country their 'Uunguu' – or living home. The Wunambal Gaambera population is approximately 700, who mainly live in Kalumburu, with others scattered through Derby, Broome and Kununurra. One Wunambal Gaambera family group lives at Kandiwal on Ngauwudu (Mitchell Plateau) (Wunambal Gaambera, 2021).

There are fifteen graa winya (15 traditional parts of Wunambal Gaambera Country - or 15 family areas) on Wunambal Gaambera Country, with two skin groups, Woday and Jirrin girn. The Wunambal Gaambera Aboriginal Corporation currently has 7 full-time Uunguu Rangers and many casuals, covering a vast area of Country. All Uunguu Rangers undertake Certificate III in Conservation and Land Management, and ranger stations are located on Country to help rangers access and look after the land (Wunambal Gaambera, 2023). The Wunambal Gaambera Aboriginal Corporation established the Uunguu Monitoring & Evaluation Committee (UMEC) to set standards and benchmarks for keeping their Country strong and to help guide actions and decisions about managing Country. The committee is made up of a combination of Traditional Owners and outside experts, including a senior DBCA scientist.

North Kimberly Marine Park

The North Kimberly Marine Park extends along the north Kimberley coast in State waters and encompasses the Wanjina Wunggur Uunguu, Balangarra and Miriuwung Gajerrong Determinations (Figure 4-32, Department of Parks and Wildlife, 2016). The North Kimberley Marine Park is jointly managed with the Wunambal Gaambera, Balangarra and Miriuwung Gajerrong people respectively through the establishment of joint management arrangements (Department of Parks and Wildlife, 2016).



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Company document identification
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Rev. index.	
Validity Status	Rev. No.
	B

Sheet
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sheets
169 /
427

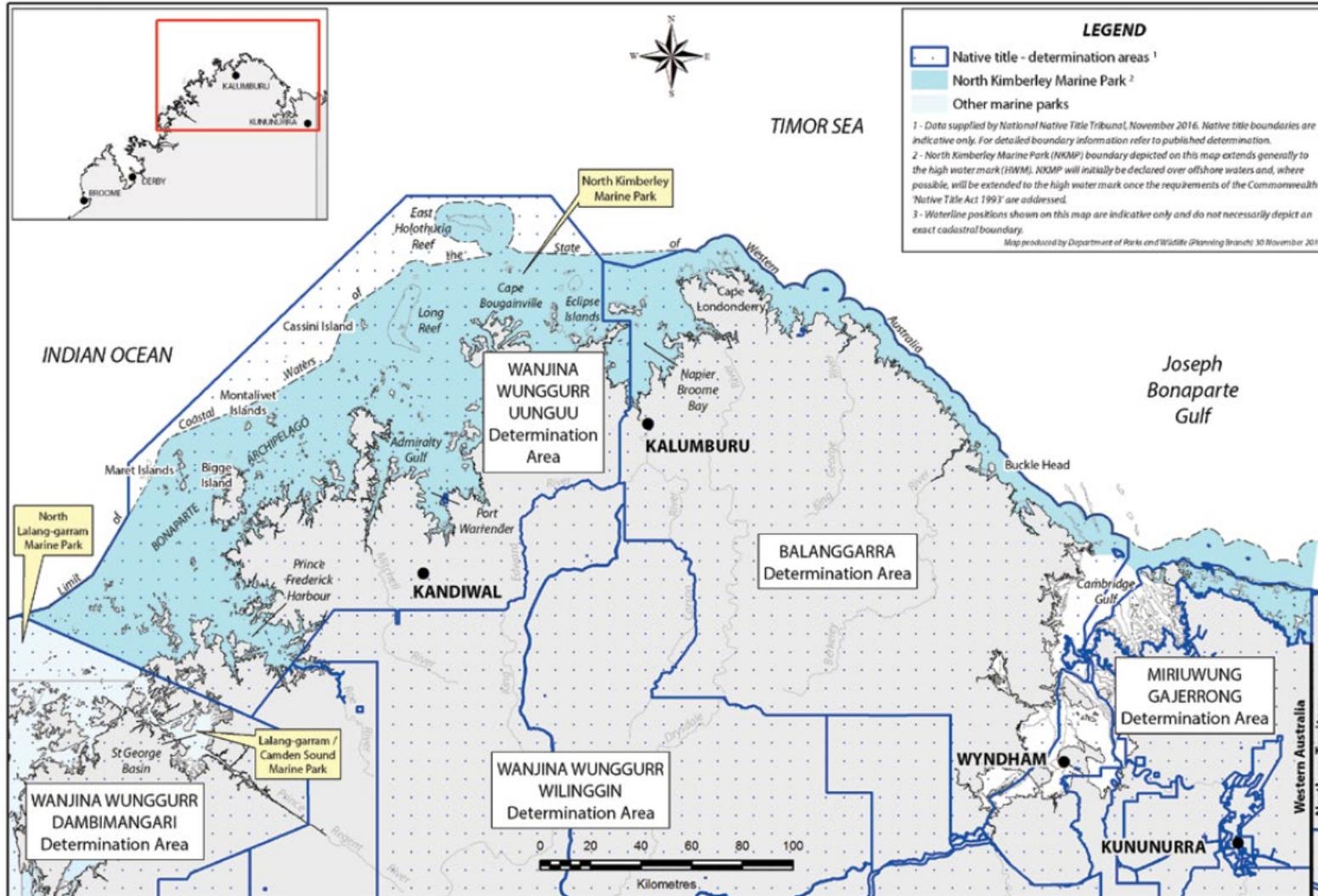


Figure 4-32: Native Titles claim and determination areas within and adjacent to the North Kimberley Marine Park

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 170 / 427
				Validity Status	Rev. No. B	

Dambimangari Country

The Dambimangari Aboriginal Corporation have native title determination over land (including coastal lands) that is located further south-west of Wunambal Gaambera Country – from Prince Regent National Park to south of Derby. Whilst Dambimangari Country looks to be not in close proximity to the EMBA, there may be connections to sea country heritage and sea life that need to be considered.

4.6.8.1 Culture, Songlines and Connection to Country

First Nations peoples have passed down their culture through generations for the past 65,000 years. This is demonstrated by ongoing cultural connections to Country, as well as by archaeological evidence of human occupation dated to be over 65,000 years old (DCCEEW, 2024e).

Country is the term often used by First Nations people to describe the lands, waterways and seas (and sometimes the sky) to which they are connected. The term contains complex ideas about law, place, custom, language, spiritual belief, cultural practice, material sustenance, family and identity (AIATSIS, 2023). Country can be described as the lands with which First Nations people have a traditional attachment or relationship (Rose, 1992).

Historically, First Nations people lived in small family groups and were semi-nomadic, with each family group living in a defined territory, systematically moving across a defined area following seasonal changes. First Nations people built semi-permanent dwellings; as a nomadic society, emphasis was on relationships to family, group, stories and Country. Membership within each family or language group was based on birthright, shared language, and cultural obligations and responsibilities. Groups had their own distinct history and culture and at certain times, family groups would come together for social, ceremonial and trade purposes (WIWA, 2024).

According to First Nations beliefs, the physical environment of each local area was created and shaped by the actions of spiritual ancestors who travelled across the landscape (WWIA, 2024). Songlines are tied to the Australian landscape and provide important knowledge, cultural values and wisdom. Songlines trace the journeys of ancestral spirits as they created the land, animals and lore, and are integral to spirituality and connectedness to Country.

Unlike elsewhere in Australia, Traditional Owner groups in northern Australia had several centuries of contact with foreign visitors before the arrival of Europeans (National Oceans Office, 2004). Many coastal and island regions in WA and the NT were the scene of complex patterns of interaction, trade and exchange with outsiders including Macassan trepangers from Sulawesi from the late 1600s until early 1900s, European mariners from the mid-1600s, and Japanese pearl divers after European arrival (McCarthy et al, 2022).

As is the case for all of the Australian coast, Songlines exist along the coast of northern WA and the NT. There are often sacred sites interwoven with the Songlines. Natural features within close proximity to the EMBA (e.g., reefs and coastline features) may form core components of Dreaming stories for different First Nations people.

Totems connect First Nations people on a spiritual level, providing a deeper connectivity and understanding to their family groups, their Country, Dreaming and creation events. Marine animals and plants found in Sea Country can hold special cultural significance (including totemic value) to different First Nations people and may be important for subsistence and medicinal purposes. As described in Section 4.4.4, BIAs for marine fauna are located within the EMBA, including those for marine turtles. For the Balanggarra people, two important Dreaming narratives are *Wungkurr* (rainbow serpent) and *Wolara* (the creator). A male and

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 171 / 427
				Validity Status	Rev. No. B	

female *Wungkurr* travelled from Sir Graham Moore Island in the far west to King George Falls, to become the majestic twin waterfalls. *Wolara* made the saltwater as he 'poled his canoe' in the coastal regions. Some of the islands are where his pole touched the seabed (Department of Parks and Wildlife, 2016).

The Balanggarra people have deep understanding and traditional ecological knowledge of plants, animals, the seasons and landscape features, which can also greatly inform scientific research and conservation programs in Balanggarra Country, as detailed in their Healthy Country Plan (BAC, 2011). In recent years, Balanggarra Traditional Owners and rangers have worked in partnership with a range of organisations to conduct research and field surveys for a number of important marine species such as *abil* (dugong), *mangkuru manya* (turtle) and *yinga* (dolphin) (Department of Parks and Wildlife, 2016).

The Miriuwung Gajerrong have lived for thousands of years by the law, languages and ceremonies established by their ancestral beings who were created by the Ngarranggarni (their Dreaming). In ancient times, Miriuwung Gajerrong land was covered by the waters of an enormous flood which receded, placing some of the Dreamings, and ancestral beings, on the landscape. Other Ngarranggarni roamed their land, creating creeks, billabongs, hills and escarpments on tracks through their cCountry. They created different soils, plants and animals, and all the seasons of the country – *ying-geng* (wet season), *gerloong* (big storm), *barndinyiriny* (dry season) and *wan-gang* (cold weather). The Dreamings became different features of the landscape and are still here present today. Every part of the Miriuwung Gajerrong Country has a song and their Dreaming makes connections between their First Nations people, plants, animals and parts of their Country like waterholes, creeks, hills, mountains and tracks through the Miriuwung Gajerrong Country (Department of Parks and Wildlife, 2016).

As described in the Wunambal Gaambera Healthy Country Plan 2021-2030, Lalai, for Wunambal Gaambera people, is their Dreaming story and belief of the creation of Wunambal Gaambera Country by their *Wanjina* (creator ancestors) and *Wunggurr* (creator snake) when the world was soft and why their lands and sea are the only place in the world Wunambal Gaambera can call Uunguu (home). Their ancestors gave them their Law, customs and culture. Saltwater *Wanjina* like *Ngamali* and *Jagulararra*, created the sea (wundaagu Saltwater Country) and coast. Some *Wunggurr* (creator snakes) travelled and still live in the wundaagu and can be seen as waves, tides and currents and their heads, tails and backbones are the islands seen today. *Wunggurr* formed stone arrangements throughout the coastal Country. *Wunggurr* also live in waterfalls and waterholes like *Punamii-Unpuu* (Mitchell Falls) (Wunambal Gaambera, 2021).

4.6.8.2 Sea Country and Submerged Historic Landscapes

Over the 65,000+ years of First Nations occupation of Australia, sea levels have fluctuated, rising from a peak low of -120m at around 21,000 years ago relative to present levels, which resulted in the inundation of vast areas the continental shelf (Ward et al, 2022). First Nations peoples have been sustainably using and managing their Sea Country for tens of thousands of years, in some cases since before rising sea levels created these marine environments (DNP, 2018b).

Sea Country or Saltwater Country refers to the areas of the sea that First Nations peoples are particularly affiliated with. It is an estate of sea as well as land, containing sacred sites and inhabited by ancestral beings, existing in both the physical and spiritual world. Sea Country is valued for First Nations cultural identity, health and wellbeing (DNP 2018a, 2018b).

Sea Country includes all living things, beliefs, creation stories, spirits, and cultural obligations (Streten et al., 2020). Smyth and Isherwood (2016) further describe Sea Country as all

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 172 / 427
				Validity Status	Rev. No. B	

estuaries, beaches, bays and marine areas collectively, within a traditional estate. Sea Country contains evidence of the ancient mystical events by which all geographic features, animals, plants and people were created. Sea Country contains sacred sites and contains tracks (or songlines) along which mythological beings travelled during the creation period (Smyth and Isherwood, 2016).

There is a considerable body of literature describing the complexity of the cultural, spiritual, ceremonial, territorial and economic connection between First Nations peoples and the sea.

Although limited baseline surveys of submerged archaeology have been undertaken in Australia to date, submerged archaeological landscapes have recently been identified in WA through combined evidence of terrestrial ecology, coastal and marine geomorphology and sea-level studies (Benjamin et al., 2020; McCarthy et al, 2022). As some of the oldest dated terrestrial sites have been found in the NT, there is a potential for the existence of submerged landscapes with associated First Nations heritage values, due to strong cultural connections between Traditional Owners and the sea (McCarthy et al, 2022). Such relationships and the connections with Sea Country transcend the landscape/seascape divide and the sea is not only a physical and temporal space, but also a mental map of ancestral journeys and rituals to nurture and pass on to future generations (Ward et al, 2022).

Many AMPs (Section 4.5.1.1) are of important cultural significance with fishing, hunting and the maintenance of First Nations heritage through ritual and stories, and are considered to be important uses of nearshore and adjacent areas (DNP, 2018a). Australian and State Marine Park Management Plans offer a source of publicly available information regarding Sea Country within close proximity to the EMBA. Management Plans developed to protect these reserves have been used to inform some of the marine values and sensitivities related to Sea Country in this EP (refer also to Appendix B: Environmental Values and Sensitivities).

Documenting traditional knowledge initiates from conversations with First Nations people about their Sea Country and allows industry to gain further understanding about where the geographic areas of importance are and why they are important for First Nations people.

Sea Country in the Thamarrurr Region

Eni has had a long-standing relationship with the Thamarrurr people since 2009, in the early stages of development of the Blacktip and Yelcherr facilities. A partnership project between Eni, the TDC – Thamarrurr Rangers and the Australian Institute of Marine Science (AIMS) was undertaken in 2019 to map the ecological and cultural values of Sea Country in the Thamarrurr Region. The results of this mapping exercise were published by Streten et al. (2020) in the Australian Energy Producers (AEP) (formerly Australian Petroleum Production and Exploration Association (APPEA)) Journal under the title 'Mapping traditional ecological knowledge of Sea Country to understand biodiversity and areas of cultural importance'. This section summarises the Sea Country mapping process and outcomes.

The conversation regarding a participatory mapping workshop was started through a proposal by AIMS that was provided to the Thamarrurr Rangers through Eni's community and environmental group. The Thamarrurr Rangers sought approval from the TDC, which represents the interests of the Traditional Owners of the Thamarrurr Region.

After receiving consent and agreement from the Traditional Owners, researchers (Eni and AIMS) travelled to Wadeye to hold the participatory mapping workshops in 2020. The first workshop was attended by 30 Traditional Owners and Rangers representing different clan groups of the Thamarrurr Region. Attendance at the workshop by Traditional Owners representing many different clan groups in the area allowed the mapping exercise to cover a

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 173 / 427
				Validity Status	Rev. No. B	

greater extent of the coastline. Note that Traditional Owners each have custodianship for their specific areas and are restricted to speak only for that part of Country.

The workshop commenced with researchers explaining how the knowledge shared by the Traditional Owners and Rangers would be used to generate a benthic habitat map that could be used by the people of the Thamarrurr Region to communicate with government and industry. The explanation was translated into local language by a member of the TDC.

From a Traditional Ecological Knowledge perspective, 'habitats' in the marine environment could be differentiated based on different ecological processes to those prioritised by scientists, and names will often differ between language, community or dialect. As such, habitats were identified in the local languages first, with English descriptions fitted to the Traditional Ecological Knowledge classifications. The workshop commenced with development of a classification system for marine benthic habitats in three local languages – Murrinpatha, Mari Amu and Marri Tjevin – and English (Table 4-13). The local language words for each habitat were confirmed by discussing photographs of potential habitats in the region and using local language dictionaries with workshop participants.

Table 4-13: Murrinpatha, Mari Amu, Marri Tjevin and English words for marine habitat

English	Murrinpatha	Mari Amu	Marri Tjevin
Oysters	Ku wurldirr	Awu wundirr	Awu wundirr
Sea rocks, coral, rocky reef	Nanthi kalpa	Karrila	Karrila
Seagrass	Nanthi kurrukurruk	Thamurr munmurr	Thamurr munmurr
Sand	Da darrimurn	Munirrhi	Munirrhi
Macroalgae	Nanthi wemat	Thamurr murmur	Thamurr murmur
Mangrove	Da dara	Tha Tjindi (nidin wuri)	Tha Tjindi (nidin wuri)
Mud	Da Paldart	Pilak	Pilua

After the language discussion, Traditional Owners and Rangers separated into five groups based on their specific Country. The smaller groups drew the location of coral, oysters, seagrass, mangroves, mud, rock, rocky reef and sand on topographic maps of their homelands. The mapping exercise was repeated on the second day with Traditional Owners and Rangers, to add information and check the outcomes from the first day of workshops. The information collected at the workshops was digitised in geographic information system software and a draft habitat map was generated. Researchers returned to Wadeye to discuss the draft habitat map of the Thamarrurr Region.

Rangers and Traditional Owners were invited to check the detail on the map to confirm its accuracy and to identify additional information for inclusion. This refinement step ensured the researchers' interpretation of the knowledge shared matches that of the participants. The classification system in local languages was also reviewed during the second visit to Wadeye. The draft map was refined and the final map identified eight different benthic habitats in three local languages plus English, covering a total area of over 1000km² along the Thamarrurr coastline (Figure 4-33). Other cultural information was also mapped, including totem and dreaming sites and other features of cultural and historical importance (Figure 4-34).

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 174 / 427
				Validity Status	Rev. No. B	

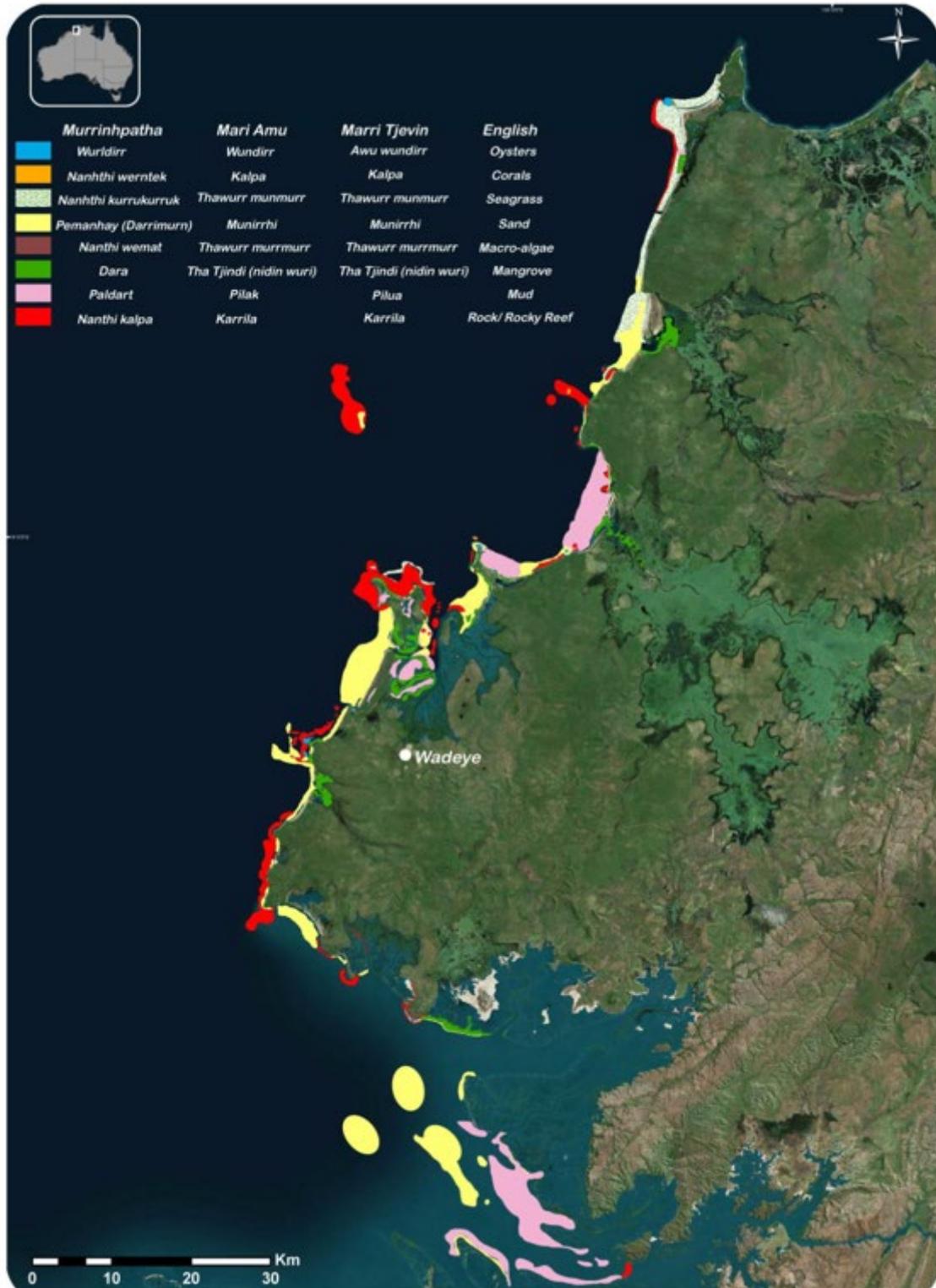


Figure 4-33: Sea Country habitat map for the Thamarrurr Region based on participatory mapping workshop

	Eni australia Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 175 / 427
			Validity Status	Rev. No. B	

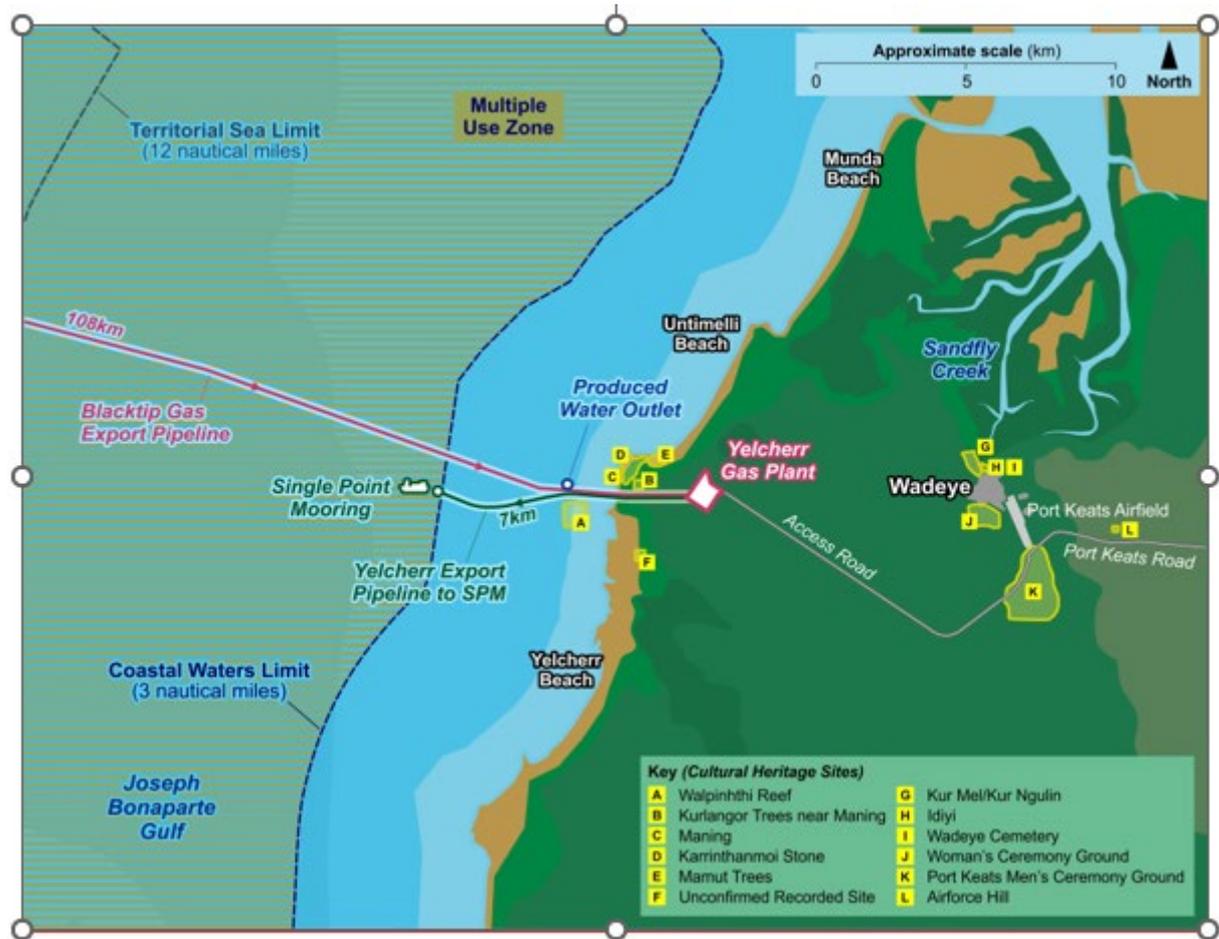


Figure 4-34: Key cultural sites in the vicinity of Yelcherr Gas Plant/Wadeye

Sea Country within Close Proximity to the EMBA

It is understood a fundamental aspect of First Nations peoples' past and ongoing relationship with the sea is that particular groups have a complexity of rights and interests over particular areas of the sea and adjoining coastal land (National Oceans Office, 2004). Such relationships and the connections with Sea Country transcend the landscape/seascape divide; the sea is not only a physical and temporal space, but also a mental map of ancestral journeys and rituals to nurture and pass on to future generations (Ward et al., 2022).

Many of the land along the north Kimberley coastlines has Sea Country components and encompasses small islands near the coast. Given the NT has the oldest dated terrestrial sites, there is a potential for the existence of submerged landscapes with associated Aboriginal heritage values due to strong cultural connections between Traditional Owners and the sea (McCarthy et al., 2022).

Many AMPs (Section 4.5.1.1) are of important cultural significance, with fishing, hunting and the maintenance of First Nations heritage through ritual and stories considered to be important uses of nearshore and adjacent areas (DNP, 2018a).

Balanggarra Sea Country comprises all the saltwater and reef from the offshore islands in the north (including Sir Graham Moore and Governor Islands), down to the offshore islands of the Cambridge Gulf to the south (e.g., Adolphus and Lacrosse Islands) (see Figure 4-32) (Department of Parks and Wildlife, 2016).

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 176 / 427
				Validity Status	Rev. No. B	

The saltwater of Balangarra Sea Country was created by *Wolara* as he 'poled his canoe' in the coastal regions. Some of the islands are where his pole touched the seabed. Rinjiibarda'bindingei (to the north of Cape Londonderry) is a reef where the Dreaming Star 'fell down' to become the very shiny and highly prized, ritually and socially important pearl shell.

Whilst the Miriuwung Gajerrong people's traditional lands are primarily inland in the Kimberley region of Western Australia (including the Ord River and its associated floodplains, billabongs, and surrounding landforms), the Miriuwung Gajerrong people also have Sea Country associated with their coastal regions. Miriuwung Gajerrong Sea Country extends from Cambridge Gulf into the NT to the east. Their *Dawang* groups are responsible for the upkeep of the land and protection of sites of cultural significance for community according to transitional laws and customs that are handed down. The *Dawang* responsible for the Saltwater Country in the North Kimberley Marine Park is *Wardanybeng* (Department of Parks and Wildlife, 2016).

The Wunambal Gaambera people are *Wundaagu* (Saltwater) people. Their ancestors travelled the waters by raft and canoe right out to the outer islands and reefs (see Figure 4-32). Their ancestral sea wanjinias (creator ancestors) are represented in cave paintings at places like Jalandal and Bigge Island. Wunambal Gaambera Saltwater Country off the Unguu Coast includes both Commonwealth and State waters, *daagu* (deep/subtidal water) and intertidal waters including *warrurru* (reefs), *burrurrga* (beaches), *darrngarla* (mangroves), tidal creeks and mudflats.

The Wunambal Gaambera Aboriginal Corporation has developed the Unguu Wundaagu Saltwater Indigenous Protected Area (IPA) Plan of Management (Wunambal Gaambera, 2023) that compiles aspects relevant to Saltwater Country and elaborates on strategies and actions relating to Saltwater management and is a sub-plan of their Wunambal Gaambera Healthy Country Plan (Wunambal Gaambera, 2021). As detailed in the IPA Plan of Management, the most important values relating to Saltwater Country are (Wunambal Gaambera, 2023):

- The Wunambal Gaambera culture – for example talking to the *wundaagu* (sea) when fishing and only taking what is needed).
- The Wunambal Gaambera people – this includes ensuring livelihoods and opportunities for future generations).
- *Gawi* (fish and other seafood) – Wunambal Gaambera people have strong customary practices for collecting and harvesting fish and other seafoods from different Saltwater Country such as *warrurru* (reefs) and *darrngarla* (mangroves) and these traditions are from their *Lalai* (Dreaming).
- *Mangguru* (marine turtles) and *Balguja* (dugong) – these are important cultural foods especially for cultural gatherings and the Wunambal Gaambera people's customary right to hunt turtle and dugong and to collect turtle eggs is recognised under statutory law.
- Saltwater cultural places – the Wunambal Gaambera people have many important cultural places in the *Wundaagu* (Saltwater); in particular:
 - Wanjina Wunggurr Cultural Tradition: Our Sea Country is associated with our cultural tradition and has many significant sites
 - Wunambal Gaambera log-raft maritime tradition: Wanjina Wunggurr ancestors used rafts and canoes to sail the tides and currents from the mainland to islands and warrurru (reefs) far offshore. Travel routes followed the tides and were important in their ancestors' wunan (traditional sharing and business trading system) between families

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 177 / 427
			Validity Status	Rev. No. B	

- Makassan: Wanjina Wunggurr ancestors interacted with Makassan seafarers for hundreds of years. Makassans came for *Bujulum* (sea cucumber) and other resources from the sea and left Tamarind trees and stone hearths on the shores.

4.6.8.3 Sacred Sites and Other Recognised Heritage Places

Culturally important sites and places include a range of ceremonial and mythological sites, camps, quarries, artefacts and manmade structures. Some sites are located inland and therefore have limited potential for interaction with activities (unplanned) associated with this EP. Whereas other sites may be located directly on the coast or on offshore islands that have values associated with plant resources, water sources, hunting places/camps and spiritual and cultural history. Refer to Figure 4-33 where some of these places have been identified in the Joseph Bonaparte Gulf in consultation with different clan groups of the Thamarrurr Region and Section 4.6.8.2 for information on Saltwater cultural places for the Wunambal Gaambera people.

4.6.8.4 Seasonal Calendars

First Nations peoples have developed an understanding of the Australian environment over many thousands of years (BOM, 2023; CSIRO, 2022). Knowledge of the seasons is highly localised and unique to each Aboriginal group. As such, the number of seasons recognised in an annual cycle, the length of each season, and how they are locally defined and understood, differs a lot depending on where the seasonal knowledge of Country has developed (CSIRO, 2022).

Within specific seasons certain activities occur; these include customary activities such as ceremonies and burn offs. Resource availability is also influenced by season such as the flowering of certain plants identifying when eggs are available for collection or specific bird calls which indicate that yams are ready to eat (BOM, 2023).

Some examples of specific traditional activities that may occur within close proximity to the EMBA that are influenced by season include:

- The Wunambal Gaambera seasonal calendar shows that during *Yurrma* (dry season: May to August) turtles and mud crabs are hunted, whereas in *Yuwala* (storm season: September to December) dugong are hunted for food and turtle eggs are collected (Wunambal Gaambera, 2021).
- The Balangarra seasonal calendar shows that stingray hunting for food occurs in *Yuwala* (hot season, no wind: September to November) and turtles are hunted for food in *Yirrma* (winter: June to August) (BAC, 2011).

4.6.8.5 Traditional Use of Resources

Traditional fishing occurs along the majority of the Kimberley and NT coastline. The practice of traditional fishing includes taking turtles, dugong, fish and other marine life, with traditional fishing methods consisting of the use of lines, hand collection, nets and spears (National Oceans Office, 2004). Several IPAs identified in Section 4.6.8.6 are found within proximity to the EMBA where it can be expected that traditional fishing activities will occur. Within the Northern Land Council region, approximately 55% of the NT's coastline is owned by Traditional Owner groups. These areas support a range of economies and livelihoods and contain many iconic fishing areas (NLC, 2021).

A National Recreational and Indigenous Fishing Survey undertaken in 2000, reported that the greatest fishing effort focused on saltwater environments, including estuarine, coastal,

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 178 / 427
				Validity Status	Rev. No. B	

inshore (less than 5km from the coast) and offshore (greater than 5km from the coast) with line fishing and hand gathering being the two most common fishing methods (National Oceans Office, 2004). Data collected during the survey in 2000, showed that offshore fishing activities represented only 2% of total indigenous fishing effort with inshore (49%), coastal (23%), rivers (16%) and lakes/dams (10%) being more common (National Oceans Office, 2004).

The traditional harvesting of marine resources (e.g. turtles, whale sharks and dugong) adjacent to the North West Marine Region is a pressure of potential concern for the carbonate bank and terrace system of the Sahul Shelf, the pinnacles of the Bonaparte Basin, and the Commonwealth waters surrounding Ashmore Reef and Cartier Island (DSEWPaC, 2012d) to the west of the EMBA.

Several Traditional Owner groups have responsibility for managing Sea Country in areas within close proximity to the EMBA where they have deep spiritual connections to offshore landscapes and harvest marine resources for food and cultural purposes. Fish are a staple food source, and fishing a form of cultural expression, connecting people to Country modelled on tradition and based in traditional law (DNP, 2018a).

Balanggarra people have strong traditions to collect and harvest saltwater fish and other seafood from *darkurr* (open sea) and the *warrirr* (reefs). Saltwater fish, *mangkuru manya* (turtles), *abil* (dugong), mud crabs, *marlinji manya* (oysters) and *numbarru manya* (cockle shells) continue to be important food sources for Balanggarra people (Department of Parks and Wildlife, 2016).

In the past, Miriuwung Gajerrong people used tidal saltwater areas, such as mangroves, for hunting, fishing and general bushtucker and wood for spears. The hunting in these places is good for *bundungjiliwurrng* (saltwater turtle), *juinying* (saltwater crocodile) and *marri marri* (pelican). Miriuwung Gajerrong people would also hunt for *galak galak* (dugong) and fish for *ngadagung* and *muwugang* (mullet), *durrngman* (saltwater salmon), *jaliwong* (barramundi), *jajan* (seawater catfish), *kalawung* (sharks) and *birin* (stingrays). Bushtucker such as *marmurrng* (mangrove fruits), *gagolyang* (big saltwater mussels), *woiyimbung* and *jaguli* (oysters), *mulgurrent* (big saltwater mudcrabs), *mulum ngalanggubiny* (saltwater worms from mangrove trunks) and *gurruwiling* (crocodile/turtle eggs) is also collected from these areas (Department of Parks and Wildlife, 2016).

Wunambal Gaambera people have strong customs and traditions for hunting *manggurru* (turtle) and *balguja* (dugong), collecting and harvesting fish and other seafoods from the *wundaagu* (sea) and *warrurru* (reefs) for ceremony, food, medicine and bait. These traditions from their Lalai are in songs, oral traditions and paintings. In the past, Wunambal Gaambera Traditional Owners built stone fish traps to catch fish like *munungiyunga* (barramundi) and also fished from canoes and rafts. Saltwater fish such as *ngarrwan* (mangrove jack), *wunbarlu* (blue-bone groper), *munungiyunga*, *bunjumarru* (mud crabs) and *marlinju* (oysters) continue to be important food sources for Wunambal Gaambera people. Wunambal Gaambera people are working to ensure the continuing health of their Country and the sustainable use of resources (Department of Parks and Wildlife, 2016). Eni's focus on the Thamarrurr Rangers Initiative.

Since 2009, Eni has had a strong focus on the Thamarrurr Rangers initiative. The Thamarrurr Rangers were established in 2001 by the Traditional Owners of the Thamarrurr Region to address land and sea management issues. The Rangers have grown from community development and employment programs to a well-resourced program through the Working on Country program (TDC, 2023).

The Thamarrurr Rangers actively engage with Traditional Owners and community members in natural and cultural resource management. The rangers patrol more than 18,000km² of

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 179 / 427
				Validity Status	Rev. No. B	

land and around 240km of coastline (from the Daly River to the Fitzmaurice River), and do a range of work, including coastguard, pest control, monitoring wild animals, protecting cultural assets, education and managing the Marri Jabin Indigenous Protected Area (IPA) (TDC, 2023) as well as activities for Eni.

Traditional Owners of the Thamarrurr Region hold a close affinity with Sea Country and, together with Thamarrurr Rangers, have recognised the importance of maintaining an active presence on the water. As discussed in previous sections, the 2019 Sea Country mapping workshops provided the opportunity for the Rangers and researchers (Eni and AIMS) to exchange scientific monitoring knowledge that could enhance the local community's management capabilities of Sea Country.

Eni, AIMS and Thamarrurr Rangers have worked together on field-based projects, notably the following:

1. 2020 Ecological Data Collection at Emu Reef in Wadeye, NT

Rocky reefs are important habitats and nursery areas for a diversity of marine species, such as golden snapper and black jewfish. Based on the participatory mapping workshop (discussed in previous sections), rocky reefs are a key ecological feature in the Thamarrurr Region. The rocky reefs in the region include reef fish protection area, Emu Reef, and the sacred site Walpinhthi Reef (refer Figure 4-33). There is limited scientific data available on the nature of these ecologically important areas.

This project was conducted by AIMS, in collaboration with the Thamarrurr Rangers, during two fieldtrips in the fourth quarter of 2020, and provided training to Rangers on how to use baited remote underwater videos and other marine surveying techniques to characterise reef habitats. The target locations included an around Eni produced formation water release point and Emu Reef. The project not only increased the current knowledge of reefs in the area but also provides field data to refine the details for the areas mapped during the initial participatory workshop. In addition, training of the Rangers provided them with the skills to undertake routine monitoring of the reefs in Sea Country.

2. 2023 Water Quality Sampling at the Blacktip Produced Formation Water Release Point

This project trained the Thamarrurr Rangers to undertake monthly produced water outfall sampling following Eni verified sampling protocols. AIMS trained the Thamarrurr Rangers in water sampling and conducted a dummy survey using a fluorometer on the subsequent day. A Go Pro was used to record the training and fieldwork and may be used as reference and future training of new rangers.

Eni and Thamarrurr Rangers arrangements continue in relation to monitoring and data collection. It is expected to continue to grow with ongoing training in marine operations, with Rangers increasing their ability to monitor for research and compliance purposes. The Thamarrurr Rangers will also use water quality sampling skills to assist Eni in the event of an oil spill (refer to the Petrel-3 and Petrel-4 Monitoring and Decommissioning Operational and Scientific Monitoring Plan (OSMP) (000694_DV_ES.HSE.0286.000_00)).

3. 2023 Fluorometer Survey Training in Response to Oil Spill

Following the water quality sampling training (detailed above), AIMS trained the Thamarrurr Rangers in fluorometer use so they can be first responders sampling water in the event of an oil spill. Further details on the use of the Thamarrurr Rangers' skills in operational and scientific monitoring following an oil spill are included in the Petrel-3 and Petrel-4 Monitoring and Decommissioning Operational and Scientific Monitoring Plan (OSMP) (000694_DV_ES.HSE.0286.000_00).

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 180 / 427
				Validity Status	Rev. No. B	

4. Annual Sediment and Shellfish Surveys

Sediment and shellfish sampling around the Blacktip produced water outfall and at reference sites offshore of Wadeye region.

Other field-based projects in collaboration with the Thamarrurr Rangers may be completed in the future. These include:

5. Understanding Mangrove Habitat Change in the Thamarrurr Region

Mangroves play an important role in coastal ecosystem health because they limit coastal erosion and are important nursery grounds for demersal fish and sharks. A change in mangrove habitats along the west coast of the Gulf of Carpentaria, NT has been identified.

The Traditional Owners of the Thamarrurr Region have also identified this change along the east coast of the Bonaparte Gulf, NT. While studies are underway to understand the change in the Gulf of Carpentaria, the cause, rate and extent of the changes of mangrove habitat along the coast near Wadeye have not been examined. This project, in collaboration with Rangers and Traditional Owners, would use participatory mapping techniques to document the change identified by Traditional Owners, in combination with analysis of remote sensing satellite imagery, to elucidate the observed patterns and to assess other environmental variables that may have attributed to this change. Understanding the location of mangrove decline within the Thamarrurr Region may facilitate the identification of factors driving the decline and to develop potential strategies for mangrove rehabilitation projects.

6. Interpreting Megafauna Data and Designing Monitoring Program for Rangers

During the mapping exercise, Rangers and Traditional Owner identified foraging locations for turtles and dugongs as well as movement patterns of rays along the coast. This project may collate Traditional Owners' knowledge as well as data to provide information about the status of species in the area. The outcomes from the project would be a monitoring program designed based on priority species and areas.

Eni sees the benefit of the Thamarrurr Rangers program and is keen to understand what other relevant programs are available in the region.

In addition to the Thamarrurr Rangers program, Eni notes that under NT Fisheries, Aboriginal people living in a remote community who want to fish and sell the fish they catch, can apply for an Aboriginal Coastal Fishing Licence. There are currently 5 Aboriginal Coastal Fishing Licences in Wadeye, and these people will be approached for comment regarding this EP, through Eni's relevant person consultation process.

4.6.8.6 Indigenous Protected Areas

An IPA is an area of Indigenous-owned land or sea where Traditional Owners have entered into an agreement with the Australian Government to promote biodiversity and cultural resource conservation. IPAs are managed by First Nations groups in accordance with Traditional Owners' objectives. The boundaries of IPAs may be aligned with Native Title boundaries, or wholly contained within. In 2022, the Australian Government announced a program (the Sea Country IPA Program) to expand the IPA network to include coastal and marine areas.

The IPA program is jointly administered by DCCEEW and NIAA.

There are no IPAS within the Operational Area oir the EMBA.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 181 / 427
			Validity Status	Rev. No.	
				B	

There are three IPAs within proximity to the EMBA (the Marri-Jabin, Balanggarra and Unguu IPAs), which are further described below.

Marri-Jabin IPA

Gazetted in 2009, the Marri-Jabin covers an area of approximately 71,200ha and was dedicated under IUCN category IV (DCCEEW, 2024f) (Figure 4-35). The Thamarrurr Land and Sea Rangers oversee the management of the IPA and carry out a range of critical activities, such as surveying and managing invasive weeds, feral animals, marine invertebrates, and diseases. The rangers also monitor the habitats of threatened species, including sea turtles, while managing fire and documenting and preserving significant cultural sites. Additionally, they are committed to passing on traditional knowledge to the next generation, ensuring the continuation of cultural practices and values for years to come (NIAA, 2024).



Figure 4-35: Marri-Jabin Indigenous Protected Area (Source: NIAA, 2024)

Balanggarra IPA

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 182 / 427
				Validity Status	Rev. No. B	

The Balanggarra IPA, declared in 2013 has a gazetted area of 1,083,000ha and supports the long-term management of Balanggarra traditional Country (DCCEEW, 2024f) (Figure 4-36). The IPA is dedicated under IUCN Category VI. The IPA is situated in the northern-Kimberley region and intersects with five major river systems, namely the King, Forest, Pentecost, Durack, and Ord Rivers, as well as the Cambridge Gulf and the Timor Sea. The IPA is managed by the Balanggarra Rangers (NIAA, 2024a).

The Balanggarra Rangers look after Country both ways, using traditional knowledge and western scientific methods. Walking in both worlds with this knowledge allows Balanggarra Rangers to do 'right-way-fire management', look after cultural sites, undertake wildlife surveys and conduct weed management activities (NIAA, 2024a).

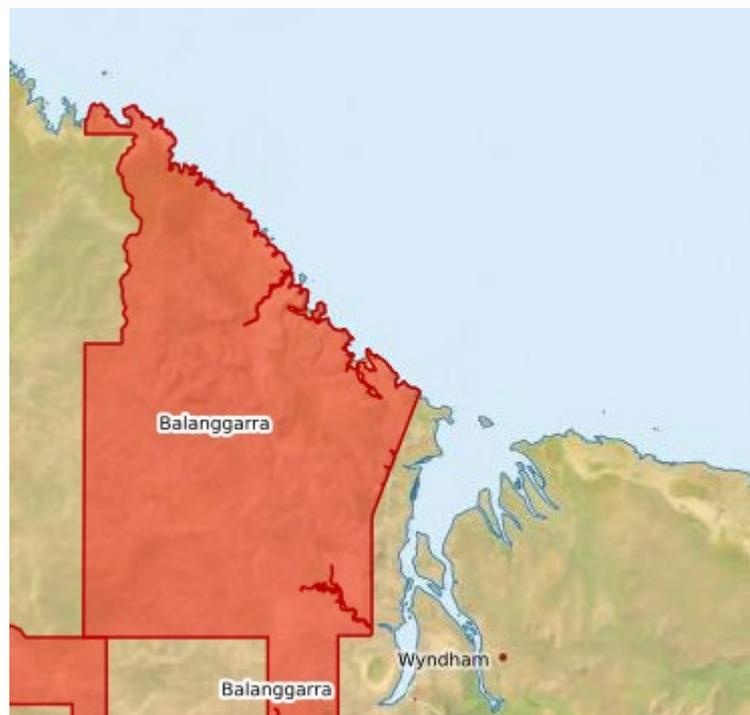


Figure 4-36: Balanggarra Indigenous Protected Area (Source: DCCEEW, 2024f)

Uunguu IPA

The Uunguu IPA, dedicated in 2010, is located in north Kimberley and covers an area of over 760,000ha on the land of the Wunambal Gaambera people (Figure 4-37). The IPA was dedicated under IUCN category VI (DCCEEW, 2024f).

The Uunguu Rangers are responsible for the management of land and sea Country. Key tasks include pest control, cultural heritage conservation, monitoring the health of plants and animals, and implementing Right-way Fire, a method of fire management that involves a mosaic of fires being burnt in the cool season to prevent wildfires in the hot, dry season. The Uunguu Rangers are also responsible for visitor management through the Uunguu Visitor Pass and have established a seasonal base at Garmbemirri on Anjo Peninsula, as well as working out of Kandiwal Community at Ngauwudu (Mitchell Plateau). The Uunguu IPA is a vital area for the Wunambal Gaambera people and requires continued conservation and management efforts (NIAA, 2024b).

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 183 / 427
				Validity Status	Rev. No. B	

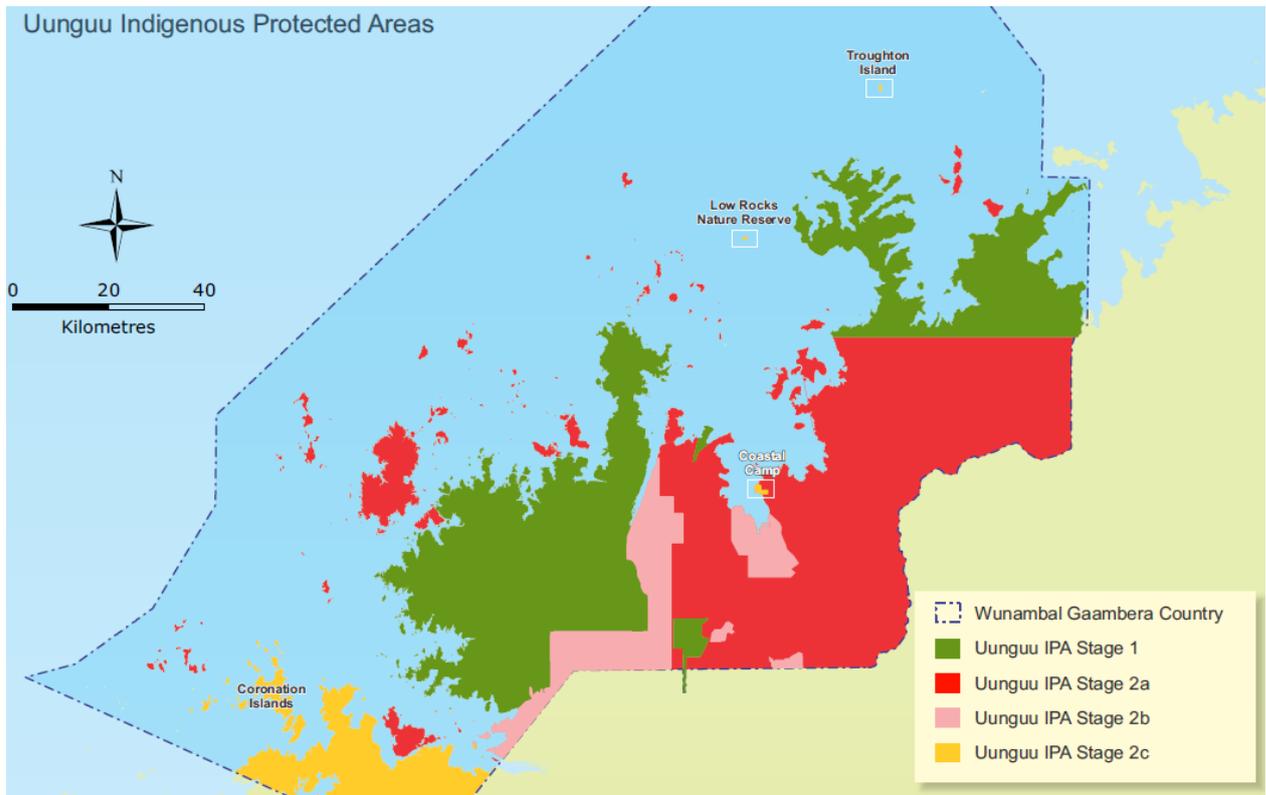


Figure 4-37: Uunguu Indigenous Protected Area (Source: Wunambal Gaambera, 2021)

4.6.8.7 Aboriginal Heritage Sites

There are no Aboriginal heritage sites under applicable Aboriginal heritage legislation within the Operational Area or the EMBA.

There are multiple Aboriginal heritage sites along the northern Kimberley coastline; within close proximity to the EMBA (ACHIS, 2024). These include:

- Cassini Island in the Uunguu IPA, which has two registered Aboriginal Sites, the Cassini Stone Line and Cassini Stone Circles, both human-made structures. Cassini Island itself is a registered Heritage Place;
- Reverley Island within the Balangarra IPA, which has two middens as registered Aboriginal Sites; and
- Ganggarryu and Lacrosse Island (Burrungu) which are both listed as sites with ritual/ceremonial importance and Dreaming narratives.

4.6.8.8 Australian Marine Parks

The EMBA for this EP overlaps with features of the North Marine Parks Network Management Plan (DNP, 2018a), which identify natural, cultural and spiritual values associated with AMPs in the EMBA (refer Section 4.5.1). The Oceanic Shoals AMP is referred to in the North Marine Parks Network Management Plan (DNP, 2018a) and the WA North Kimberley Marine Park is referred to in the North Kimberley Marine Park Joint Management Plan (Department of Parks and Wildlife, 2016).

Eni acknowledges Commonwealth and State Marine Park Management Plans recognise cultural features of Traditional Owner groups. AMPs describe taking 'values into account' when

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 184 / 427
			Validity Status	Rev. No. B	

making decisions and taking action in relation to AMPs. Furthermore, the WA North Kimberley Marine Park Joint Management Plan describes the opportunity for Parks and Wildlife and Traditional Owners to work together, with the wider community, to achieve cultural, ecological and social management of the marine park. Traditional knowledge and understanding of Saltwater Country will be incorporated into the management of the marine park, and Traditional Owners will be actively involved in managing the area.

Natural, cultural, heritage and socioeconomic values are associated with the Oceanic Shoals AMP and have been detailed in Section 4.5.1.1.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 185 / 427
				Validity Status	Rev. No. B	

5 RELEVANT PERSON CONSULTATION

5.1 Overview

This section of the EP, in conjunction with Appendix C: Relevant Person Consultation, describes consultation undertaken by Eni in 2024 for the Petrel-3 and Petrel-4 Monitoring and Decommissioning Environmental Plan.

In accordance with Regulation 24 of the OPGGS Regulations, the EP must contain:

b) a report on all consultations between the titleholder and any relevant person, that contains:

- i) a summary of each response made by a relevant person, and*
- ii) an assessment of the merits of any objection or claim about the adverse impact of each activity to which the environment plan relates, and*
- iii) a statement of the titleholder's response, or proposed response, if any, to each objection or claim.*

The Petrel Operational Area is located in the Joseph Bonaparte Gulf, ~100km north of Eni's Northern Territory Blacktip activities. Eni has been operating its Blacktip activities since 2009, and as a result, is quite familiar with local communities and other users of the coastal and marine environment across the region.

As per part 2.3 of Appendix C1: Bridging Document, stakeholders have been previously identified through the associated Blacktip Stakeholder Management Plan (SMP) [0000_DV_PR.DPM.0110.000], where Eni maintains a database of interested persons, being those individuals, groups and/or organisations who may have an interest in current onshore and offshore activities. Eni has an ongoing engagement strategy to monitor and maintain its already strong relationships, and these interested persons (along with other identified stakeholders) have been identified as relevant persons for the Petrel-3 and Petrel-4 Monitoring and Decommissioning EP.

There are 4 key appendices that support this 'Relevant Person Consultation' Section:

- Appendix C1: Bridging Document – the relevant persons consultation methodology that has been developed for this Environment Plan that takes into account both Eni's corporate requirements and requirements under the OPGGS(E) regulations;
- Appendix C2: Relevant Persons Register – a register identifying all relevant persons that have been approached for this Environment Plan;
- Appendix C3: Consultation Materials – All evidence/copies of all materials that were used for consultation such as advertisements, public notices, correspondence, PowerPoint slide sets etc; and
- Appendix C4: Relevant Persons Consultation Evidence – a comprehensive report of all relevant persons' engagement records made up of two documents:
 - Appendix C4a - Relevant Persons Consultations Log: a spreadsheet showing all efforts and methods (email, letter, phone, text) made to seek two-way dialogue with relevant persons;
 - Appendix C4b - Relevant Persons Feedback Assessment: a record of all relevant person claims and objections – with Eni's assessment, response (where required) and action.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 186 / 427
				Validity Status	Rev. No. B	

For the consultation described in this section of the EP and further presented throughout Appendices C1 to C4a and C4b, the guidance documents considered were as listed in Table 3-1 of the Petrel Bridging Document (Appendix C1: Bridging Document).

5.2 Identified Relevant Persons

Also outlined in part 2.3 of Appendix C1: Bridging Document, Eni's ongoing strategy for stakeholder engagement is to develop and maintain long-term relationships with stakeholders (including relevant persons) in and around its general areas of operations.

As the Operational Area is located in such close proximity to Eni's Blacktip activities, Eni was able to review its stakeholder database from its Blacktip Stakeholder Management Plan as a source document to identify relevant persons for the Petrel-3 and Petrel-4 Monitoring and Decommissioning EP.

To further identify relevant persons, further desktop work was carried out to ensure that all relevant persons were identified that traverse the petroleum activity's:

- Overall spatial extent, which encompasses the Operational Area, ZPI and EMBA; and
- General zone, which extends beyond the overall spatial extent and involves communities within approximately 250km from the Operational Area (Figure 5-1).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 187 / 427
			Validity Status	Rev. No.	
				B	

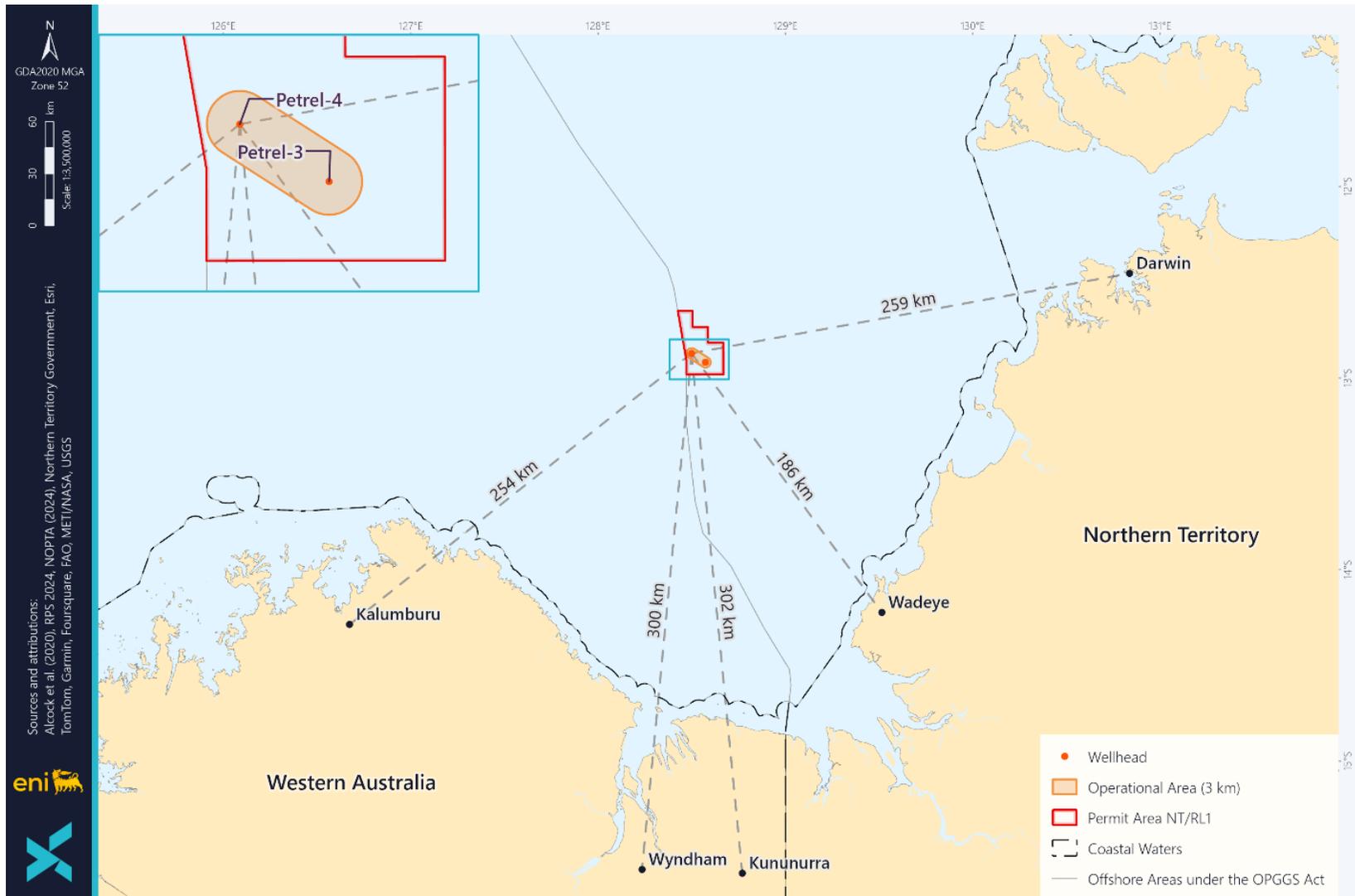


Figure 5-1: Communities within Petrel's General Zone

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 188 / 427
			Validity Status	Rev. No. B	

5.2.1 Petrel Internal Stakeholder Mapping Workshop

Eni further developed Petrel relevant person identification and analysis through the strategic implementation of an internal Stakeholder Mapping Workshop held on 10 May 2024. This was an important first step to not only identify and profile relevant persons, but also to be able to assess their target groupings as specified in part 5.2.1 of Appendix C1: Bridging Document. The following attendees participated in the Workshop:

- Eni Executive Leadership;
- Eni Petrel Project Team;
- Eni Health, Safety, Environment and Quality Team;
- Eni Stakeholder Engagement and Sustainability Team;
- Third party subject matter experts.

Participants deliberated on a number of matters including a Project overview; confirming roles and responsibilities; professional learning, relevant person identification, analysis, and target group classification; and communications tools.

As result of the workshop, Eni was able to finalise the Petrel Relevant Person Register fully encompassing of all categories as defined by sub-regulation 25(1) (a)-(e) of the OPGGS (E) Regulations. Relevant persons that were identified include (but is not limited to) industry bodies and associations; commonwealth, state/territory and local government departments; commercial operators; marine user groups; Traditional Owner groups; local businesses; and non-government organisations and interest groups.

Further to the process described above, additional opportunities for identifying relevant persons were implemented throughout the consultation period – including being informed of others through local connections, in face-to-face meetings and in relevant person self-identification through the approach outlined in part 6.2 of Appendix C1: Bridging Document.

In summary, a complete list of relevant persons applicable to the Petrel-3 and Petrel-4 Monitoring and Decommissioning EP is presented in Appendix C2: Relevant Person Register.

5.3 Preparing for Consultation

As outlined in part 5 of Appendix C1: Bridging Document, Eni undertook the following strategic planning and preparation to ensure effective and appropriate consultation could take place:

- Collation of all technical information for consultation materials;
- Development of materials for initial consultation information package (e.g., email script, web landing page, activity flyer / fact sheet, NOPSEMA information brochure, and dedicated email/phone contacts);
- Development of relevant person slide-set for scheduled in-person presentations;
- Mapping the prioritisation of relevant persons into target groups (to plan for the tracking of effective consultation); and
- Planning the consultation effort to be applied for each of the target groups.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 189 / 427
				Validity Status	Rev. No. B	

5.3.1 Collation of Information for Consultation Materials

Both Eni's project and stakeholder engagement teams collaborated to ensure the provision of all related information. This included information about the specific location of the Operational Area, the ZPI and the EMBA; an overview of the required activities; images of the wells; a schedule of planned timings and duration; a frequently asked questions document; and environmental impacts and associated management measures.

5.3.2 Development of Materials for Initial Consultation Information Package

A scripted email was drafted to include the following general information:

- Company Name and plan for Petrel-3 and Petrel-4 monitoring and decommissioning;
- Summary of activity description, including location, timing and duration, including distances from the Australian coastline and a map with coordinates listed;
- Notification of web landing page (petreleni.com.au);
- Invitation to provide feedback and management of sensitive information; and
- The option to 'opt out'.

An attached activity flyer / fact sheet was developed for distribution with the email. This information flyer had the following information included within it:

- Further detailed information regarding the company, the location, the two wells, planned activities, timing and duration;
- Information regarding the need to consult with information about NOPSEMA and the OPGGS (E) Regulations;
- Contact details for the provision of stakeholder comment and feedback,
- Information about the EMBA;
- Inclusion of QR code and website links;
- A specific project-related email (info@petreleni.com.au) and a dedicated 1300 telephone answering service (to provide a constantly monitored service);
- Summary tables of potential planned and unplanned environmental impacts/risks associated with the activity, including a high-level description of emissions, discharges and wastes and summary of key management controls to be implemented.

The web landing page (petreleni.com.au) was developed and made 'live' with the following inclusions as a part of the data:

- An explanation of what an environment plan is;
- A simple map showing the location;
- A repeat of all information from the activity flyer / fact sheet and a link to it as well;
- A link to frequently asked questions (FAQs);
- High-level descriptions of the Operational Area, Zone of Potential Impact (ZPI) and environment that may be affected (EMBA);
- An explanation box 'Should I be consulted' with a link to the definition of relevant person and further link to NOPSEMA's information brochure, 'Consultation on offshore petroleum environment plans; Information for the community';

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 190 / 427
			Validity Status	Rev. No. B	

- Contact details with dedicated email and 1300 phone number; and
- A 'register your interest in engagement' section with user fields for completion.

Examples and copies of the above initial consultation materials are presented in Appendix C3: Consultation Materials

5.3.3 Development of Advertisements

As further elaborated on in Section 5.4.3, efforts were made to develop a series of newsletter advertisements, posters, local newspaper advertisements and scripts for radio station advertisements.

These were made up of similar information to that outlined above for the initial scripted email, attached activity flyer / fact sheet, and web landing page. Importantly these contained the information for the specific project-related email (info@petreleni.com.au), dedicated 1300 phone answering service, and for the visual media, the inclusion of the QR code and web landing page (petreleni.com.au).

Examples and copies of all advertising materials are presented in Appendix C3: Consultation Materials.

5.3.4 Development of Relevant Person Slide Set

Prior to consultation, a slide set for in-person presentations was developed with the intention of summarising the content of the EP for monitoring and decommissioning of the Petrel wells in the format most suitable for the public and align with Regulation 25(2), and NOPSEMA's Guideline: Consultation in the course of preparing an environment plan. The slides were collaboratively developed with input from Eni's project team, environment team, well intervention team and stakeholder engagement team.

Whilst this slide set was presented to most relevant persons that Eni met face-to-face, it was adapted slightly in a few cases (language, terminology, relevance) and this was dependent on the specific relevant person that Eni was meeting with.

In any case a copy of the base slide set as well as each and every adapted slide-set that is available in Appendix C3: Consultation Materials.

5.3.5 Mapping Prioritisation of Relevant Persons

As outlined in part 5.2.1 in Appendix C1: Bridging Document, once identified, Eni assessed all relevant persons that were identified in the Stakeholder Mapping Workshop (Section 5.2.1) and arranged them into target groups based on the following criteria:

- Group 1 - Relevant persons with functions, interests or activities that are associated with the Operational Area who may be affected by planned activities. (Of the total 96 RPs, 24% fell into target group 1 - 23)
- Group 2 - Relevant persons with functions, interests or activities that are associated with the ZPI (moderate exposure zone) who may be affected by unplanned activities (i.e. spills) and who require information. (Of the total 96 RPs, 18% fell into target group 2 - 17)
- Group 3 - Relevant persons with functions, interests or activities that are associated with the EMBA (but not the Operational Area or ZPI) who may be affected by unplanned activities and who may have an interest and/or expectation to be informed about the unplanned activities. (Of the total 96 RPs, 26% fell into target group 3 - 25)

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 191 / 427
				Validity Status	Rev. No. B	

- Group 4 - Any other relevant persons who may be indirectly impacted or have interests in the unplanned activities. Includes extended enquiry for persons who may not be known to Eni. (Of the total 96 RPs, 32% fell into target group 4 - 31).

5.3.6 Implementing Planned Consultation Effort for Target Groups

In considering target groupings, where those relevant persons interests overlapped the operational area (Group 1), Eni ensured extreme effort to assure two-way dialogue with these relevant persons. Where relevant persons' interests overlapped the ZPI (Group 2), Eni still looked to ensure relatively intensive efforts. For those relevant persons whose interests overlapped the EMBA (Group 3), Eni also made considerable efforts to engage. For relevant persons who may be indirectly impacted or have interests in potential unplanned activities (Group 4), whilst Eni made significant effort to consult, it was expected that these relevant persons would make equal effort to reply to consultation efforts.

For Group 1 relevant persons (extreme effort implemented), Eni ensured direct engagement between all key focal points across disciplines through providing tailored information with scheduled phone/email/meeting follow-up to invite comments. Group 1 relevant persons were focused on first and foremost, in the knowledge that the best outcome was to ensure engagement with relevant persons in two-way dialogue to the fullest extent. As a result, Eni was successful in engaging with 22 of the 23 Group 1 relevant persons.

For Group 2 relevant persons (relatively intensive effort implemented), the Eni consultation focal point/s provided tailored information to relevant persons through targeted emails and phone calls. An initial default response period (inviting comments) of 30 business days was provided, and throughout this period, further scheduled phone/email follow up occurred. As well as this, Eni engaged in regional roadshow visits; meetings and/or presentations; and provision of detailed responsive correspondence upon request, to Group 2 relevant persons. With the understanding that two-way dialogue with Group 2 relevant persons needed to be optimised as much as possible, these relevant persons were also strongly focused on. Primarily due to all the commercial fishers being in this grouping, (to be explained further in Section 5.4.2.2) Eni was only able to engage with 8 of the 17 Group 2 relevant persons.

With Group 3 relevant persons (considerable effort implemented), targeted emails with tailored information were sent and follow-up phone calls also occurred. The same initial default response period of 30 business days inviting comments was also enacted. Multiple follow-up calls and emails again occurred to ensure receipt of information and to invite comments. With a strong commitment to ensure any relevant persons with functions, interests or activities that may overlap with the EMBA had the chance to engage in two-way dialogue, Eni also engaged in regional roadshow visits with meetings and presentations to Group 3 relevant persons. Consequently, Eni was successful in engaging with 24 of the 25 Group 3 relevant persons.

Eni utilised extended enquiry to aim to reach Group 4 relevant persons, with informative radio advertisements providing contact details; and newspaper advertisements and posters with a QR code that linked the audience to the tailored information package. Given significant effort was still a requirement, Eni still made key effort to call and follow up with these relevant persons. Accordingly, Eni was successful in engaging with 24 of the 31 Group 4 relevant persons.

In total across all relevant persons and regardless of groupings, Eni was successful in engaging in two-way dialogue with 81% of all relevant persons. For those relevant persons that did not respond please see Section 5.5.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 192 / 427
			Validity Status	Rev. No. B	

5.4 Consultation Approaches and Activities

Eni commenced consultation on 20 June 2024, and invited feedback to be provided by the end of the consultation period - initially set at 2 August 2024. The intention was to ensure at least 30 business days to allow a reasonable opportunity for consultation to occur. As the development of the EP progressed and regional face-to-face consultation continued to play out, Eni extended the consultation period to 15 September. This almost 3-month period encompassed double the amount of business days than was initially planned.

Following identification of relevant persons, and as outlined in part 6.1 of the Petrel Bridging Document (Appendix C1: Bridging Document), Eni's undertook the following:

1. Established a dedicated Petrel web landing page with deep information about the activities (petreleni.com.au); a dedicated email address (info@petreleni.com.au); and a dedicated phone number (1300 155 616) for any relevant persons to either get in contact, or to self-identify as per Section 5.2.1.
2. Issued emails to all identified relevant persons with information packages, and seeking feedback should they wish to provide this (initial response period of 30 business days).
3. Sourced direct postal addresses for selected identified relevant persons who historically, have not responded to emails for other EP consultation campaigns (e.g. Commercial Fishers), and mailed a hard copy of correspondence with information pack.
4. Further follow up emails, text messages (for known mobile contacts) and phone calls to all identified relevant persons who had received the initial email – especially to relevant persons in Target Groups 1, 2 and 3.
5. Repeated mail out correspondence with a second round to those relevant persons who were posted a hard copy of the information pack.
6. Reviewed/tracked the Relevant Persons Consultations Log (Appendix C4: Consultation Efforts Log) to ensure appropriate consultation with relevant person target groups was succeeding as expected and implemented remedial interventions for relevant persons not responding.
7. Held targeted regional roadshow visits to (already emailed) relevant persons in Kimberley and Northern Territory communities within Petrel's general footprint (refer Figure 5 1), with Eni stakeholder engagement and subject matter experts presenting slide-sets with question-and-answer sessions to individuals, groups and associations.
8. Issued materials (e.g., slide sets) in a follow up email to in-person presentations to each relevant person that partook in a face-to-face session.
9. Continued to offer to present slide-sets with question-and-answer sessions (both in person and online) to any relevant person requesting further information (one Group 1 relevant person took advantage of this).
10. Implemented extended enquiry approach as outlined in part 6.2 of Appendix C1: Bridging Document to seek out relevant persons who may wish to self-identify and potentially log an objection of claim (also refer to Section 5.4.3).

5.4.1 Consultation During Environment Plan Development

On 20 June 2024, Eni commenced the consultation campaign with relevant persons for the proposed planned activities described in this EP. As described above, activity consultation material was sent to each identified relevant person (Appendix C2: Relevant Person Register).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 193 / 427
			Validity Status	Rev. No. B	

The consultation period was initially outlined within the consultation material as closing on 2 August 2024 (approximately 30 business days from commencement).

Print, digital and radio advertising for the activity commenced on 15 July 2024 and then an updated deadline for receiving comments was set to 28 August 2024 (approximately 30 business days from the date of advertising). The advertising transgressed from 15 July 2024 through to 17 August 2024.

In a full effort to ensure appropriate consultation, Eni continued to follow up with relevant persons beyond 28 August to 15 September. Multiple attempts were made to contact each relevant person, and where no response was received, Eni engaged alternative methods of contact (e.g., phone call, personal texts, in-person approaches, alternative contacts). Where still no response or feedback was received, Eni determined that this almost 3-month consultation period was reasonable time for relevant persons to have had opportunity to provide feedback. Note that Eni undertook exhaustive research through already established relationships, further desktop research and third parties to seek alternative contacts.

Over the course of consultation for the EP, some relevant persons requested or may have required a different level of engagement. In these instances, additional information was provided to allow that person to make an informed decision about whether there were any consequences or impacts to their specific functions, interests, or activities with regards to the proposed Petrel monitoring and decommissioning activities. Similarly, other relevant persons may have requested a lower level of engagement, such as indicating a preference for email rather than in-person meetings.

As outlined in the Relevant Persons Consultations Log (Appendix C4: Consultation Efforts Log), there were several relevant persons that communicated they were either under-resourced or were challenged in terms of having available time to consult. Other relevant persons (a relative minority, compared to the successful two-way dialogue that occurred for 81% of the total number of relevant persons) chose not to engage with or provide feedback to Eni.

As per Section 26(8) of the OPGGS (E) Regulations, the full records of all correspondence and interactions with relevant persons are discretely provided in the sensitive information part of this Environmental Plan.

5.4.2 Specific Consultation Approaches for Relevant Persons

As outlined in Sections 5.3.5 and 5.3.6, specific requirements for consultation were carefully considered to ensure each relevant person received information and materials, and the appropriate amount of opportunity to be able to provide feedback. In most circumstances, consultation engagement was through the process outlined in Section 5.3.6.

Eni sent a Petrel consultation team on to travel directly to locations in the Northern Territory, the East Kimberley and Broome in order to hold face-to-face 'regional roadshow' presentations with relevant persons. All relevant persons within the locations as per Figure 5-1 were contacted prior via email, text and phone to pre-organise the visits and to seek an audience.

5.4.2.1 Approaches to Other Petroleum or Greenhouse Gas Titleholders

Eni approached titleholders who have ongoing interests within proximity (~100 km) of the Operational Area. Noting other titleholders have industry understanding, Eni provided a factsheet via email, and was successful in obtaining feedback.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 194 / 427
			Validity Status	Rev. No. B	

5.4.2.2 Approaches to Commercial Fishers

As mentioned in part 5.2.2 of Appendix C1: Bridging Document, the designated licenced areas of many of the fisheries are extensive over the Australian coast, including within the EMBA. The EP provides an assessment of the potential interaction of the various fisheries with the petroleum activities, based on the nature of the fishery and historic effort and catch data.

Given the lack of commercial fishing activity identified in the location of the proposed activities, interaction with commercial fishers is not anticipated. Nevertheless, as Eni considers, as a general principle, that the peak bodies representing the commercial fisheries would be the established representatives of the fishing licence holders, Eni approached the peak bodies representing the commercial fisheries for Commonwealth, WA and NT, and provided consultation materials. Where Eni had the opportunity, the support of peak bodies was utilised to share information on their regular newsletter to their members. In addition, and to ensure the widest reach for consultation for commercial fishers as possible, Eni engaged with Commonwealth, State and Territory government bodies responsible for commercial fishers.

Whilst some peak bodies replied on behalf of those fisheries that they represented, Eni went further to seek to ensure direct engagement with individual license holders.

Updated licensee data was sourced in June 2024, and all individual NT and WA license holders whose fishing management or licence area may overlap the EMBA were sent hard copies of information packs by registered mail on two occasions in June and July 2024. Of the 65+ letters that went out (twice), Eni received feedback from only 4 commercial fishers.

Eni was fortunate to gain an in-person meeting with one WA commercial fisher. Whilst his comments cannot be attributed to every other commercial fisher, these comments did provide an on-the-ground perspective as to why license holders may not respond to titleholders:

- license holders are often at sea for extended periods of time;
- license holders are undergoing major consultation fatigue - being inundated with emails and receiving up to 7 mail-outs per quarter from titleholders with many being irrelevant;
- Nevertheless, the hard copies were considered useful and would often be placed with correspondence to be taken offshore to be read at sea. However, consultation feedback, if required, could not be provided until returning;
- Email is not a preferred method of contact for many, who are offshore without wifi, and when they return to shore there are so many emails that they are generally disregarded.
- print, digital and radio advertising to reach individual licensees were considered appreciated modes of providing information about the activities.

A final target group highlighted by NT Fisheries were the Aboriginal Coastal Licence Holders. A review of the location of those fishers' activity determined they were located well away from the EMBA. Regardless, Eni's intention was to hold a meeting with these individuals in-person when visiting Wadeye Community where they all were based. Unfortunately, as outlined below, the visit to Wadeye never eventuated and the opportunity was lost. However as for all commercial fishers, this group of fishers were sent hard copies of information packs by registered mail on two occasions, and in fact one licence holder contacted Eni through the contact channels provided. This person expressed appreciation for the information provided and confirmed his activities were not impacted by the activity.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 195 / 427
			Validity Status	Rev. No. B	

In summary, Eni certainly implemented its best endeavours to consult with commercial fishers authentically and genuinely. This is evidenced (see Appendix C4: Consultation Efforts Loga) by engagement with a large array of Commonwealth, State and Territory government bodies responsible for commercial fishers; some commercial license holders (including an in-person meeting); and a number of cooperative peak bodies.

5.4.2.3 Approaches to First Nations Relevant Persons

As described in Appendix C1: Bridging Document, for the Petrel consultation, Eni made concerted efforts to target coastal land councils, Prescribed Bodies Corporate (PBCs), and other Native Title organisations representing First Nations people that have potential to overlap Petrel’s overall spatial extent (- being within the Operational Area, the ZPI and/or the EMBA).

Through other company activities, Eni has been continuously proactive in seeking to develop and build relationships with the land councils, and in addition to an already sound relationship with the administration of the Tiwi Land Council, was excited in this process to gain an audience with the administration of the Northern Land Council.

These land councils, although relevant persons in their own right, have indicated the importance of engaging directly with Traditional Owners and Eni has sought to do this through engagement with the relevant PBCs.

Once initial email information packs had been issued directly to CEOs and/or Chairpersons, Eni commenced active engagement through contacting land councils, PBCs and other Native Title organisations directly, offering to hold in-person presentations in its regional roadshows to continue relationship building and to provide opportunities for the PBC’s to understand Eni’s general activities and specifically in relation to the Petrel consultation.

Subject matter experts provided guidance on culturally appropriate consultation approaches for First Nations people to account for culturally appropriate engagement, and to ensure local traditions, customs and protocols were considered prior to scheduling engagements.

Although consultation for the purposes of compliance with the OPGGS(E) Section 25 has been completed, Eni continues to maintain ongoing communication with both land councils and PBCs to enable any opportunity for feedback during and post acceptance of this EP in accordance with part 9 of Appendix C1: Bridging Document and Section 5.6.

5.4.2.4 Thamarrurr Region Consultation (Northern Territory)

With the community of Wadeye in close proximity and already linked to Eni’s other activities, Eni already partners, both contractually and from an engagement perspective, with the Thamarrurr Development Corporation (TDC). Eni is resolute in facilitating an ongoing engagement process in the Thamarrurr Region through attendance to monthly community meetings; investigation of increased Ranger servicing opportunities; and progression towards more regular community interaction.

Eni initially consulted through providing the email/information pack on 20 June, and then on numerous occasions, sought to follow up to coordinate in-person consultation via a targeted site visit. Once having confirmed a visit to the community, it was planned to also liaise with West Daly Regional Council’s Wadeye Office to also provide information about Eni’s activity.

Initially Eni reached out to TDC to inform of a scheduled visit to Wadeye for Tuesday 23 July (whilst on an NT Regional Roadshow). Also proposed was the plan to meet with the Thamarurr Rangers and the five local Aboriginal Coastal Fishers. However, TDC reverted to inform that

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 196 / 427
			Validity Status	Rev. No. B	

there was a funeral on this day and so the community could not be available. Although Eni then proposed to visit the TDC Winnellie Office on 23 July, no further discussion eventuated regarding this. On 22 July, TDC reverted inviting Eni to join their Board meeting for 31 July, however at that stage, Eni had already committed to and locked in meetings for a Kimberley Regional Roadshow at this time.

With Eni motivated to present to the Thamarrurr community within the consultation period, the concept of providing a presentation over TEAMS was discussed, but it was agreed that in order to have authentic two-way dialogue, this (or other online approaches) was not an appropriate medium for delivery to these relevant persons.

In mid-August, it was then agreed with TDC for Eni to visit Wadeye on 18/19 September. Even though this was after the designated consultation period close date, Eni wanted to ensure the Thamarrurr community had every opportunity to participate in the consultation and so extended their process. TDC confirmed the meeting on 27 August and also provided contacts who could assist with ensuring all relevant persons were in attendance. However unfortunately in early September, TDC informed that there were now 3 funerals scheduled the week of the 18/19 of September, and that all relevant traditional owners would now be unavailable during this time.

Eni advised TDC that with a visit to Wadeye now unable to occur until October, that despite all parties committed to trying to make it happen, the opportunity to present in person regarding the Petrel 3 and Petrel 4 Monitoring and Decommissioning Environmental Plan prior to submission had lapsed. Eni reiterated its commitment to maintain strong relationships with the TDC and Rangers and will seek the most opportune time for face-to-face consultation with local peoples regarding Petrel (post-acceptance of this EP) and other associated activities.

Throughout this process of trying to organise a visit, Eni's consultation team has continued to liaise with TDC Administration seeking input on feedback on the petrel information package that was provided.

As a result of being unable to attend Wadeye within the consultation period, Eni was unable to publish a Petrel information advertisement in the monthly TDC Newsletter. The aim of this publication was to facilitate relevant persons to self-identify and/or attend any on-Country consultation meeting. However, in order to publish this, Eni determined that it was important to be able to liaise in-person with TDC so as to prepare them for any reader enquiries.

Eni considers that the Wadeye/TDC consultation has concluded following numerous efforts to consult face-to-face as well as the initial, and follow-up emails and calls to relevant persons. That said, and as outlined in Appendix C1, an ongoing engagement process will occur in the Thamarrurr Region through Eni's attendance to monthly community meetings, and Eni will continue to maintain efforts to engage in continued dialogue with TDC and Thamarrurr Rangers to allow for relevant interested persons engagement throughout the execution of the planned activities, as per section 22(15) of the OPGGS(E) Regulations.

A complete overview of efforts to engage with TDC can be found in the Relevant Persons Consultations Log (Appendix C4: Consultation Efforts Log).

5.4.2.5 Kimberley Region Consultation (Western Australia)

With the Kimberley (and specifically East Kimberley) being in proximity to Petrel's general zone and including the communities of Kununurra, Wyndham and Kalumburu and Broome, Eni initiated a Kimberley Regional Roadshow from 29 July to 9 August 2024.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 197 / 427
				Validity Status	Rev. No. B	

Initial Kimberley region consultation (as per all relevant person initial consultation) was through the provision of emails and information packs, and Eni then immediately followed up with one-on-one emails, phone calls and text messages to relevant individuals and groups to offer in-person consultation.

Eni's long-standing engagement with National Indigenous Australians Agency continued to facilitate the fostering of relationships across Traditional Owner groups, and NIAA Kununurra was particularly helpful in offering advice and support and even co-attending some meetings.

With a similar narrative to the process of full commitment and attempts to consult as per Section 5.4.2.4, and whilst already having a strong relationship with MG Corporation, Eni was unfortunately unable to secure a face-to-face consultation meeting in either their first Regional Roadshow visit (29 Jul - 9 Aug) or their later visit on to Kununurra when visiting Wyndham (2 Sept).

At the time of the Roadshow visit, Eni was unable to secure an opportunity to meet with some important traditional custodian groups including the Balangarra people in Wyndham, the Kalumburu community, the Balangarra Guini people in Kalumburu and the Wunambal Gaambera people in Kalumburu. As a result, a special convoy was organised to visit Kalumburu community and hold a joint meeting there on 28 August. Following that Eni was able to secure a Balangarra Community meeting in Wyndham to meet with key people from that area.

Eni utilised its current sound relationships with Broome-based KRED Enterprises (<https://www.kred.org.au/>) as well as NIAA Kununurra, to facilitate engagement with the Kalumburu community, and both entities sent representatives to the Kalumburu meeting to support the process. The presence of these representatives facilitated ease in relating to, and connecting with, the local community. The extensive network of connections that both people had supported the information sharing process greatly. With the presence of these representatives, community leaders and Traditional Owners showed comfort in entering into conversations with Eni's consultation team.

Whilst Eni was unable to secure a face-to-face meeting with Kimberley Land Council and Dambimangari Aboriginal Corporation, Appendix C4: Consultation Efforts Log will show the persistent efforts implemented to seek consultation feedback.

Kimberley regional consultation was not restricted to Traditional Owner groups alone and included all relevant Kimberley stakeholders that were identified as relevant persons. This included locally based commonwealth, state and local government departments, and all other Kimberley individuals or groups whose functions, interests or activities may be affected by the activities to be carried out under this Environment Plan.

As a member of the East Kimberley Chamber of Commerce (EKCCI), Eni was able to advertise in their newsletter, and also presented a 'Business After Hours' event to reach a broad audience of East Kimberley business owners to share information about the activities. An invitation to the event was sent to members and included in the EKCCI newsletter (Appendix C3: Consultation Materials).

Kimberley Roadshow face-to-face meetings were successfully held with representatives from Shire of Wyndham; East Kimberley CCI; DBCA Broome; DBCA Kununurra; DPIRD Fisheries Kununurra; Wyndham Port; NIAA Kununurra; and a commercial fisher. For each of these meetings, Eni presented the prepared slides and then followed up with tailored emails to each relevant person.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 198 / 427
			Validity Status	Rev. No. B	

Eni considers that consultation has concluded following the Kimberley engagements and Roadshow meetings, including follow-up emails sent to relevant persons. That said, and as outlined in Appendix C1, Eni will continue to maintain efforts to engage in continued dialogue with all Kimberley stakeholders to allow for relevant and interested persons engagement throughout the execution of the planned activities, as per section 22(15) of the OPGGS(E) Regulations.

A complete overview of efforts to engage with Kimberley Region relevant persons can be found in the Relevant Persons Consultations Log (Appendix C4: Consultation Efforts Log).

5.4.2.6 Broader Northern Territory Consultation (including Tiwi Islands)

Initial NT region consultation (as per all relevant person initial consultation) was through the provision of emails and information packs, and Eni then immediately followed up with one-on-one emails, phone calls and text messages to relevant individuals and groups to offer in-person consultation. Eni then initiated a NT Regional Roadshow from 22 to 27 July 2024.

At the time of the Roadshow visit, Eni was able to secure an opportunity to meet, present to, and conclude consultation efforts with some important traditional custodian representative groups including executives from Northern Land Council (NLC); Tiwi Land Council (TLC); Larrakia Development Corporation (LDC); Larrakia Nation (LN):

- TLC proposed that the activities did not have a direct impact on the Tiwi Islands or community, and chose not to view the presentation or provide any feedback on the EP.
- NLC is in the process of recruiting a new CEO. Given NLC were not in a position to organise meetings with Traditional Owners, they confirmed no further consultation was required, but that any updates for the proposed activities continue to be directed to the CEO email.
- LDC were thankful to be consulted and said they would forward the activity flyer to other potentially interested persons.
- LN confirmed that given the proximity of Petrel, the face-to-face consultation could be dealt with at a management level and that no further consultation was required.

NT regional consultation was not restricted to Traditional Owner groups alone and included all NT identified relevant persons. This included locally based State government departments, and other NT groups whose functions, interests or activities may be affected by the activities to be carried out under the Environment Plan. As such, further Darwin-based Roadshow face-to-face meetings were successfully held with the N.T. Seafood Council and the NT Fisheries Department. Unfortunately, due to their resource constraints and despite our repeated efforts, we were unable to secure a meeting with the N.T. Guided Fishing Industry Association.

For each of all the above held face-to-face meetings, Eni presented the prepared slides and then followed up with tailored emails to each relevant person.

Eni considers that consultation has concluded following the broader NT engagements and meetings, including follow-up emails sent to relevant persons. That said, and as outlined in Appendix C1, Eni will continue to maintain efforts to engage in continued dialogue with the broader NT and Tiwi Islands to allow for relevant interested persons engagement throughout the execution of the planned activities, as per section 22(15) of the OPGGS (E) Regulations.

A complete overview of efforts to engage with the broader NT can be found in the Relevant Persons Consultations Log (Appendix C4: Consultation Efforts Log).

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 199 / 427
				Validity Status	Rev. No.	
					B	

5.4.3 Extended Enquiry – Broader Consultation

In the knowledge that there may be instances where other persons, organisations, departments or agencies may consider themselves relevant and wish to be included in the consultation process, as an additional proactive step, Eni undertook the following:

- Local/regional newspaper advertisement campaigns;
- Local/regional radio advertisement campaigns;
- Newsletter distribution via the East Kimberley Chamber of Commerce (EKCCI);
- Hosting an EKCCI regional roadshow event to business owners in the East Kimberley;
- Newsletter distribution via the NT Seafood Council (NTSC) Weekly Wrap Newsletter; and
- Posting of information posters in the regional Shire Offices and EKCCI public space.

As mentioned previously, due to Eni being unsuccessful in gaining a face-to-face meeting with the Thamarrurr Development Corporation (TDC), we were unable to secure the posting of an information poster in their office or for their newsletter distribution.

The objective of this approach was to help identify any other relevant persons that may not have already been identified. Whilst providing an opportunity to identify new relevant persons, the extended enquiry activities also provided another means of broadcasting information to existing relevant persons, and we were given positive feedback when meeting with relevant persons in-person, that they appreciated this far-reaching approach.

Table 5-1 provides details on the broader enquiry efforts including newspapers, radio and other mediums where the consultation information was broadcasted.

Table 5-1: Broader Enquiry Efforts

Method	Broadcast Medium	Dates
Print & Digital	NT News (daily edition)	July 2024: 16, 17, 23, 24, 29, 30 August 2024: 5, 8, 12, 15, 17
	The West Australian (daily edition)	July 2024: 15, 20, 22, 27, 29 August 2024: 1, 6, 8, 13, 15
Digital	Kimberly Echo (fortnightly edition)	July 2024: 18, 25 August 2024: 1, 8, 15
	EKCCI Newsletter (3-weekly)	July 2024: 29 August 2024: 9
	NTSC Weekly Wrap Newsletter (weekly)	July 2024: 26
	Shire Wyndham East Kimberley Office Posters	Posted Kununurra from 30 July Posted Wyndham from 31 July
	EKCCI public space posters	Posted from 23 July
	TDC Newsletter (monthly)	Not achieved (refer Section 5.4.2.4)
	Radio	Darwin's Mix 104.9
	First Nations FM 94.5	July 2024: 15, 16, 17, 18, 19, 20 - 1 min in length
	First Nations AR 913 National	July 2024: 15, 16, 17, 18, 19, 20 - 1 min in length

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 200 / 427
				Validity Status	Rev. No. B	

	Palmerston FM 88	July 2024: 15, 16, 17, 18, 19, 20 - 1 min in length
Event	EKCCI Business After Hours	July 2024: 31 (5.00pm-7.30pm) (invites issued via EKCCI social media and via email)

Whilst Eni have undertaken a range of approaches to capture a broad audience and recognise the benefits of this, Eni have made considerable in-person efforts during the consultation process, which arguably outweigh the efforts made through advertisement campaigns.

In terms of Eni reaching out to a broader audience, the EKCCI 'Business After Hours' event was very successful with EKCCI reaching out to potential interested persons via their social media pages and their issuing of an invitation to their membership via email. The event not only attracted already identified relevant persons, but also business owners from industries including professional consultancies; construction and civil engineering; port services; hospitality and tourism; horticulture; careers training; and Aboriginal development.

Other than the EKCCI example above, at the conclusion of the consultation effort on 15 September and notwithstanding the potential for future self-identified relevant persons identified post submission of this EP, no enquiries have been identified as having been received as a result of the extended enquiry efforts.

5.4.4 Requests for Fees and Service Agreements

There have been a number of incidences throughout the consultation period where Relevant persons have responded with a request for fees via a financial consultation agreement.

Eni maintains its clear commitment towards genuine consultation, which includes:

- Relevant persons being issued with a Consultation Information Pack with links to further comprehensive information on its web landing page (petreleni.com.au); and
- Offering availability to discuss alternative consultation options such as providing information in a different format; providing more time to consider information; and/or providing help to understand the information.

Eni does not consider that on all occasions and in all instances, that a financial consultation agreement is necessary to allow consultation to occur, and also notes that various titleholders have differing levels of activities going on. There is also the issue that providing financial payment to 'facilitate' stakeholders to enter into consultation conflicts with company values.

Eni has communicated with a number of relevant persons, highlighting that they have already been provided with a comprehensive Stakeholder Consultation Information Pack – which is sufficient to allow them to make an assessment.

In the spirit of authentic and genuine consultation, Eni also asserted full availability to discuss alternative options including discussing further how the relevant person can participate; visiting relevant persons face-to-face; providing materials in a different format; providing more time to consider information; having technical staff provide presentations, explanations and clarifications; and/or providing help to understand the information.

5.5 Consultation Outcomes

In accordance with Section 24(b) of the OPGGS (E) Regulations, reports on all consultations from the Petrel consultation campaign are presented as Appendix C4. Appendix C4 has been

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 201 / 427
				Validity Status	Rev. No. B	

deconstructed into Appendix C4a and Appendix C4b to clearly reflect the Relevant Persons Consultations Log and Relevant Persons Consultations Feedback Assessment respectively.

Appendix C4b also outlines Eni’s statements of responses to objections or claims.

As outlined in part 7.3 of Appendix C1, and in alignment with OPGGS (E) Regulation 24, application, interpretation and responsiveness with regards to all feedback received from relevant persons was undertaken at all times. For relevant persons who provided feedback, and following assessment of the merits of their objection or claim, Eni provided a response to the relevant person advising them of the assessment and invited them to further respond. This is reflected in the Relevant Persons Consultations Feedback Assessment (Appendix C4b). For statements issued by Eni of both acceptance and rejection of objections and/or claims, there were numerous relevant persons that chose not to further respond.

Despite Eni’s best efforts, there was a small percentage of relevant persons that chose not to reply or engage with Eni at all, and as described in part 6.4 of Appendix C1, where no response or acknowledgement of receipt of consultation materials was received by Eni, the actions undertaken were:

- Continued follow-up emails post issue of initial consultation materials; and
- Alternative methods of contact where appropriate and available (e.g., phone call, personal texts, in-person approaches, alternative contacts).

Eni consulted with all relevant persons since issuing initial information regarding this EP, and then made subsequent consultation efforts to engage non-responders in accordance with its consultation approach (outlined throughout Appendix C1). Eni ensured provision of sufficient information to allow relevant persons to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests, or activities, and provided a reasonable period for relevant person to provide objections or claims in relation to the EP and for consultation to occur.

Given multiple attempts were exhausted for this minority of non-responders, and that the consultation period was extended and then closed just prior to EP submission, under these circumstances, Eni deems consultation in the course of the preparation of the EP has been completed in accordance with OPGGS (E) regulations.

There were some instances where Eni attempted to identify relevant persons but were unable to confirm individual contact details (contact details of individual commercial fishers and some associations were an example of this). Eni undertook the following best endeavours to ensure contact with relevant persons:

- Contacting government departments who may have had contact details of individual relevant persons;
- Contacting associated organisations and/or advocacy groups who may have had contact details of individual relevant persons;
- Leveraging off other relevant persons who had contact details of certain individual relevant persons; and
- Comprehensive desktop research to exhaust all public domains of information of potential contact details.

To conclude, the in-total 3-month duration with appropriate follow-up of relevant persons since the consultation period commenced in June 2024, is considered a reasonable time for relevant persons to have had opportunity to make an informed assessment of the possible

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 202 / 427
			Validity Status	Rev. No. B	

consequences of the petroleum activities on their functions, interests or activities, in accordance with the requirements of sub-regulation 25(3) of the OPGGS (E) Regulations and provide a response.

5.6 Ongoing Consultation

Relevant and interested person consultation for the Petrel monitoring and decommissioning activities will be ongoing, post-acceptance of this EP in accordance with section 22(15) of the OPGGS (E) Regulations. Eni will continue to work with relevant and interested persons and organisations to develop and maintain a current and comprehensive view of relevant persons' and organisations' functions, interests and activities, and provide opportunity for enquiries, objections or claims in the lead up to and during the conduct of the planned activities. As outlined in part 4.1 of Appendix C1, should any new relevant persons and/or organisations be identified, they will be added to the stakeholder database and included in all future consultation as required, including specific activity notifications.

As outlined in parts 2.3 and 9 of the Petrel Bridging Document (Appendix C1: Bridging Document), outside of regulatory compliance and hence outside of this 'preparation of EP' consultation, Eni's 'best practice' strategy has always been to develop and maintain long-term relationships with stakeholders (which includes relevant persons) in and around its operations, both onshore and offshore. Eni sees that it is good corporate social responsibility to engage with stakeholders within or near our footprint; we look to build partnerships and potential long-term value proposition opportunities; and by continuing to talk to stakeholders, we gain better knowledge of the context, needs and interests of these stakeholders.

So outside of, and well before, the consultation period for this specific 'preparation of EP', Eni has already been conducting 'meet and greets' across the Kimberley and Northern Territory regions. Whilst this may assist in building and maintaining of relationships with prospective relevant persons, it was not considered a part of any Environment Plan consultation process.

As such, Eni's intention is to now consistently plan multiple visits to NT (including Tiwi Islands) and Kimberley communities. The purpose of this will be to engage in an ongoing way, with interested and relevant persons and organisations. Where the opportunity arises, Eni will seek to consistently engage with the various groups in order to:

- Continue to provide bi-monthly updates about the progress of the activities;
- Respond in person to clarifications raised in collaboratively coordinated meetings across the two regions;
- Respond in person to informal clarifications; and
- Invite and respond to feedback from relevant persons and where necessary adjust the EP through the Management of Change processes.

Eni will continue to accept feedback from all relevant and interested persons and organisations during the assessment of this EP and throughout the duration of the accepted EP. Where any new information is received, that is assessed as a new relevant matter or objection/claim with merit, the EP will be updated in accordance with the management of change (MoC) process described in Section 10.12 ensuring risks remain managed to ALARP and acceptable levels.

Additional consultation with relevant persons will occur in the event there is a significant change to the proposed activities.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 203 / 427
			Validity Status	Rev. No. B	

6 ENVIRONMENTAL RISK ASSESSMENT METHODOLOGY

6.1 Risk Assessment

In accordance with Section 21(5) of the OPGGS Regulations 2023, the EP must contain:

- (a) details of the environmental impacts and risks for the activity, and
- (b) an evaluation of all the impacts and risks, appropriate to the nature and scale of each impact or risk, and
- (c) details of the control measures that will be used to reduce the impacts and risks of the activity to as low as reasonably practicable and an acceptable level.

To meet this requirement, Eni has implemented its HSE Risk Management and Hazard Identification Procedure (ENI-HSE-PR-001). The purpose of the procedure is to ensure the HSE, asset and reputational hazards are identified, risk-assessed and managed in a systematic and consistent way. In this way, risks associated with projects and operational changes are effectively managed and addressed in compliance with company and legislative requirements.

The procedure is based on Eni's philosophy that to manage environmental risks is to eliminate or mitigate the risk during the planning phase. Managing risks through design is contingent upon identifying, at an early stage in the project, the sources and pathways by which environmental impacts can occur, and the sensitivities of the receiving environment in which the project is situated. Where risks and impacts are unable to be eliminated at the project planning phase, the HSE Risk Management and Hazard Identification Procedure provides a robust framework that must be applied to understand the residual risk and impact from the key project activities covered in this EP.

The procedure is consistent with the Australian Standard for Risk Management: ISO 31000:2018 Risk Management – Principles and Guidelines and ISO 14001:2015 Environmental Management Systems. A general outline of the formal risk management process is provided in Figure 6-1.

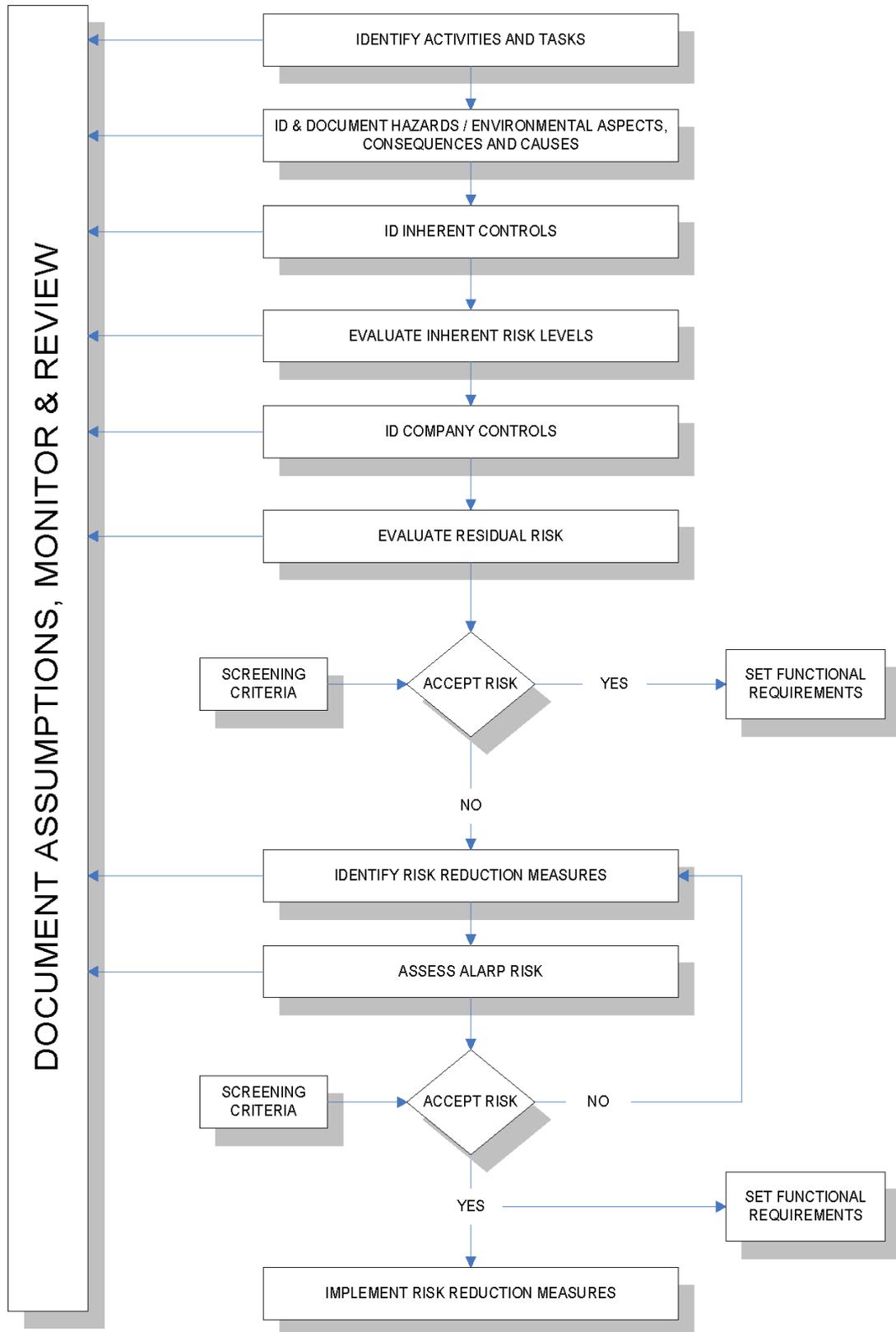


Figure 6-1: Overview of the risk management process

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 205 / 427
				Validity Status	Rev. No. B	

Before commencing a systematic risk assessment process, it is essential to ensure the context of the risk assessment (why, when, who, what, where) is fully understood. This is achieved by identifying the:

1. Project activities and tasks, the sources of impact and risk, and the associated environmental aspects; and
2. Environmental values and sensitivities within and adjacent to the Zone of Potential Impact, Operational Area and the EMBA.

Using that information, the process continues by:

- Defining the potential environmental effects (impacts and risks) of aspects identified in Step 1 on the values identified in Step 2;
- Identifying the potential environmental consequences and severity of the impact (Table 6-1);
- Identifying the likelihood of occurrence of the consequence, according to a six-level scale (Table 6-2);
- Evaluating overall environmental risk levels using the Eni environmental risk matrix (Figure 6-2); and
- Identifying mitigation measures, assigning management actions and further recommended risk reduction measures according to the hierarchy of controls (Table 6-3), with consideration of the risk management actions (Table 6-4), to reduce the risk to an acceptable level.

Inherent risk levels assume inherent controls are in place. Residual risk levels are based on the inherent controls and the application of additional risk reduction measures.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 206 / 427
				Validity Status	Rev. No.	
					B	

Table 6-1: Environmental consequence descriptors

		Description	
		Descriptor	Description
Descriptor	(1) Slight	<p>No stakeholder impact OR temporary impact on the area.</p> <p>Involved area less than 0.1 sq mile.</p> <p>Spill less than 1m³ – no sensitive impact on ground.</p> <p>Small discharges with confined and temporary impact on the area. No noticeable impact on water/air/soil and biodiversity. Negligible impact due to GHG emissions. Good materials/energy/water selection and use. Negligible financial consequences.</p>	
	(2) Minor	<p>Some local stakeholder concern or less than one week for clean-up OR one year for natural recovery OR impact on a small number of uncompromised species.</p> <p>Involved area less than 1 sq mile.</p> <p>Spill less than 10m³ – impact on localised ground.</p> <p>Sufficiently large discharges to impact the environment, but no long-lasting effect. Short-term, localised impact on water/air/soil and biodiversity (on a limited number of non-threatened species).</p> <p>Slight impact due to GHG emissions. Adequate materials/energy/water selection and use. Single breach of statutory or prescribed limit, or single complaint.</p>	
	(3) Local	<p>Regional stakeholder concern OR one to two years for natural recovery OR one week for clean-up OR threatening to some species or impact on protected natural areas.</p> <p>Involved area less than 10 sq miles.</p> <p>Spill less than 100m³.</p> <p>Limited discharges affecting the neighbourhood and damaging the environment with longer effects. Short-term, more widespread impact on water/air/soil and biodiversity (on a higher number of non-threatened species).</p> <p>Limited impact due to GHG emissions. Inadequate materials/energy/water selection and use. Repeated breaches of statutory or prescribed limit, or many complaints.</p>	
	(4) Major	<p>National stakeholder concern OR impact on licences OR 2 to 5 years for natural recovery OR up to 5 months for clean-up OR threatening to biodiversity or impact on interesting areas for science.</p> <p>Involved area less than 100 sq miles.</p> <p>Spill less than 1000m³.</p> <p>Large discharges with severe and long-lasting environmental damage. Medium-term, widespread impact on water/air/soil and biodiversity (on some threatened species and/or one ecosystem function).</p> <p>Extensive measures (financially significant) required to restore the impacted area. Significant impact due to GHG emissions. Poor materials/energy/water selection and use. Extended breaches of statutory or prescribed limits, or widespread nuisance.</p>	
	(5) Extensive	<p>International stakeholder concern OR impact on licences/acquisitions OR greater than 5 years for natural recovery OR greater than 5 months for clean-up OR reduction of biodiversity OR impact on special conservation areas.</p> <p>Involved area greater than 100 sq miles.</p> <p>Spill greater than 1000m³.</p> <p>Large discharges with severe and persistent environmental damage. Long-term, large-scale impact on water/air/soil and biodiversity (likely permanent species loss and impact on ecosystem function).</p> <p>Very poor materials/energy/water selection and use. Extensive impact due to GHG emissions. Major financial consequences for the Company. Ongoing breaches well above statutory or prescribed limits.</p>	

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 207 / 427
			Validity Status	Rev. No.	
				B	

Table 6-2: Likelihood scale

ID	Likelihood	Frequency (occurrence per year)	Description
0	Non-credible	$<10^{-6}$ occ/y	Theoretically possible but not known or reasonably expected to have occurred in the exploration and production industry.
A	Rare	$10^{-6} \leq \text{occ/y} < 10^{-4}$	Known or reasonably expected to have occurred in the exploration and production industry under similar circumstances.
B	Unlikely	$10^{-4} \leq \text{occ/y} < 10^{-3}$	Known or reasonably expected to have occurred in company under similar circumstances.
C	Credible	$10^{-3} \leq \text{occ/y} < 10^{-1}$	Known or reasonably expected to have occurred in the company more than once under similar circumstances.
D	Probable	$10^{-1} \leq \text{occ/y} < 1$	Known or reasonably expected to have occurred in the company more than once a year under similar circumstances.
E	Frequent	≥ 1 occ/y	Known or reasonably expected to have occurred at the considered location, more than once a year under similar circumstances.

Table 6-3: Hierarchy of controls

Control Category	Description
Elimination	The causes of the hazardous event are removed such that it is no longer credible it will occur.
Substitution (alternatives)	Replace with a less hazardous substance or method; for example, use a wet method instead of dry and introduce a non-dusting powder for one that is friable.
Engineering (plant and equipment)	Physical controls; for example, containment, exhaust ventilation, mechanical aids.
Procedural (signage, warnings or administrative)	Human controls; for example, supervision, work methods, housekeeping, personal hygiene, information, instruction and training.
Personal protective equipment	In all cases, use of personal protective equipment should be considered as the only barrier only when control measures within the above categories are not practicable.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 208 / 427
			Validity Status	Rev. No. B	

Table 6-4: Risk management actions

Risk Rating	Significance	Risk Management Actions
Low (green)	Continuous improvement	The level of risk is broadly acceptable and generic control measures are required, aimed at avoiding deterioration ¹ .
Medium (yellow)	Risk reduction measure	The level of risk can be tolerable only once a structured review of the risk reduction measures has been performed; where necessary, the relevant guidance from the local authorities should be adopted for application of ALARP. ALARP is a concept that applies well to personnel and environmental risk. Asset risk is often most easily judged on a basis of costs and benefits alone.
Medium-High (orange)	Risk reduction measure	The level of risk can be tolerable only once a structured review of the risk reduction measures has been performed; where necessary, the relevant guidance from the local authorities should be adopted for application of ALARP. ALARP is a concept that applies well to personnel and environmental risk. Asset risk is often most easily judged on a basis of costs and benefits alone ² .
High (red)	Intolerable risk	The level of risk is not acceptable and risk control measures are required to lower the risk to another level of significance.

Note 1: The exception to the appropriate risk management actions for the Low risks are where a low risk to people is identified on the matrix position A3, then risk reduction measures are required.

Note 2: The exception to the appropriate risk management actions for Medium-High risk is the case of a 4B risk where the impact is on third parties onshore and is considered intolerable.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 209 / 427
			Validity Status	Rev. No.	
				B	

Consequence					Likelihood or Annual Frequency					
Severity	Company Reputation	People (Health & Safety)	Environment	Assets / Project	0	A	B	C	D	E
					0 - Non credible / Could happen in E&P industry (Freq <10-6 /y)	A - Rare / Reported for E&P industry (Freq 10-6 to 10-4 /y)	B - Unlikely / Has occurred at least once in Company (Freq 10-4 to 10-3 /y)	C - Credible / Has occurred several times in Company (Freq 10-3 to 10-1 /y)	D - Probable / Happens several times per year in Company (Freq 10-1 to 1 /y)	E - Frequent / Several times per year at one location (Freq >1 /y)
1	1-Slight impact	1-Slight health effect / injury	1-Slight effect	1-Slight damage	Low	Low	Low	Low	Low	Low
2	2-Minor impact	2-Minor health effect / injury	2-Minor effect	2-Minor damage	Low	Low	Low	Medium	Medium	Medium
3	3-Local impact	3-Major health effect / injury	3-Local effect	3-Local damage	Low	Low	Medium	Medium - High	High	High
4	4-National impact	4-PTD or single fatality	4-Major effect	4-Major damage	Low	Medium	Medium - High	High	High	High
5	5-International impact	5-Multiple fatalities	5-Extensive effect	5-Extensive damage	Medium	Medium - High	High	High	High	High

Figure 6-2: Eni environmental risk matrix

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 210 / 427
			Validity Status	Rev. No. B	

6.1.1 Environmental Risk

An environmental risk identification and assessment workshop for the petroleum activities was undertaken in June 2024. The workshop was attended by a representative cross-section of the Petrel-3 and Petrel-4 workforce, including Eni drilling engineers and HSE personnel.

All the credible risks from the petroleum activities were assessed and Environmental Performance Objectives (EPOs), Environmental Performance Standards (EPSs) and Measurement Criteria (MC) to reduce impacts and risks to ALARP and acceptable levels were developed, as detailed in Sections 7 and 8; and summarised in Section 9.

6.2 Risk Reduction

Impacts or risks identified as requiring additional controls (the application of mitigation and management measures beyond what is standard practice for offshore petroleum activities) are subject to further review to identify the controls that are required to be provided or modified in order to reduce the residual risk.

Risk assessment is an iterative process of:

- Identifying a risk;
- Assessing a risk;
- Deciding whether residual risk is tolerable;
- If not tolerable, generating a new risk or mitigation measures; and
- Assessing the effectiveness of the mitigation measures.

The acceptability of a risk, after controls and mitigation measures have been applied, is determined in accordance with ratings and associated management actions outlined in Table 6.4.

6.3 As Low as Reasonably Practicable and Acceptance Criteria

6.3.1 As Low as Reasonably Practicable Criteria

The ALARP principle recognises no industrial activity is entirely risk free. ALARP is defined as a level of impact and risk that is not unacceptable and cannot be reduced further without the expenditure of costs that are disproportionate to the benefit gained. Cost may be in terms of financial, health, safety and schedule implications.

Section 34 of the OPGGS Regulations require a demonstration that environmental impacts will be reduced to ALARP. For risks to be considered as reduced to ALARP, one of the following criteria must apply:

- There are no reasonably practicable alternatives to the activity; and
- The cost (in other words, sacrifice) for implementing further measure is disproportionate to the reduction in risk.

When deciding whether risks are managed to ALARP, the items considered were:

- Risk level;
- Existing layers of protection, including both preventive and mitigative controls;

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 211 / 427
			Validity Status	Rev. No. B	

- Feasibility of additional controls or alternative arrangements;
- Practicality of additional controls or alternative arrangements;
- Cost of additional controls or alternative arrangements;
- Effectiveness of additional controls or alternative arrangements; and
- Impact on risks from additional controls or alternative arrangements.

6.3.2 Acceptance Criteria

Section 34 of the OPGGS Regulations requires a demonstration that environmental impacts are of an acceptable level.

Eni considered a range of factors when evaluating the acceptability of environmental impacts associated with its activities. The evaluation criteria are outlined in Table 6-5.

Table 6-5: Eni acceptability factors

Demonstration of acceptability	
Compliance with legal requirements, laws, and standards	Considers the legal aspect, particularly compliance with applicable legislative prescriptions and regulations in force which imply specific procedures to be performed by the Titleholder to control the environmental aspect.
Policy compliance	The risk or impact must be compliant with the objectives of Eni policies.
Social acceptability	Considers the 'social' aspects that can alter stakeholder perception of the Titleholder's commitment regarding the safeguard and protection of the environment and that can cause serious harm to the Titleholder's public image.
Area sensitivity/biodiversity	The proposed risk or impact controls, EPOs and EPSs must be consistent with the nature of the receiving environment.
Environmentally sustainable development principles	The overall activity is consistent with principles of ESD ¹ .
ALARP	There is a consensus among the risk assessment team that risks, or impacts are ALARP.

Note 1: The principles of ESD (as defined in Section 3A of the Commonwealth EPBC Act), including:

- *Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations (the 'integration principle').*
- *If there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation (the 'precautionary principle').*
- *The principle of intergenerational equity – that the present generation should ensure the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations (the 'intergenerational principle').*
- *The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making (the 'biodiversity principle').*
- *Improved valuation, pricing and incentive mechanisms should be promoted (the 'valuation principle').*

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 212 / 427
			Validity Status	Rev. No. B	

7 ENVIRONMENTAL RISK ASSESSMENT - PLANNED OPERATIONS

7.1 Seabed Disturbance

7.1.1 Summary of Environmental Risk Assessment

Hazard	Seabed Disturbance		
	Frequency	Severity	Risk
Inherent Risk	B	1	L
Residual Risk	C	1	L

7.1.2 Description of Hazard

During the petroleum activities, seabed disturbance will occur as a result of:

- Geotechnical survey;
- MODU positioning;
- Marine growth removal;
- Establish secondary well control;
- Cutting of the wellhead; and
- Retrieval of infrastructure from the seabed.

The greatest seabed disturbance footprint is from MODU positioning, for the moored MODU option. Discharges associated with cementing and milling is assessed in Section 7.8.

7.1.2.1 Geotechnical survey

During the geotechnical survey, samples of the seabed are taken and testing is carried out.

Core hole sampling involves removing a sample of rock or soil. The total disturbance area for core hole sampling is 2.4m² per well. Piezo cone penetrometer testing (PCPT) involves placing equipment on the seabed and pushing some of the equipment into the seabed. All equipment is removed, but a hole with a diameter of ~10cm remains on the seabed which will eventually collapse and infill with seabed sediments.

7.1.2.2 MODU positioning

If a moored MODU is used, up to 12 anchors and mooring lines will be used to secure the MODU. The maximum footprint will be up to 1,944m² per well, which assumes up to 12 anchors and associated mooring chains.

If the jack-up option is used, the 3 spud cans (on the bottom of the legs) will be lowered. These are expected to partially penetrate into the seabed, creating a depression ~18m in diameter around each spud can, resulting in total area of ~750m² of temporary seabed disturbance at each well location.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 213 / 427
			Validity Status	Rev. No. B	

7.1.2.3 Marine growth removal

Marine growth may be removed using high-pressure water jetting, mechanical cleaning or chemical cleaning. The high-pressure water jetting may disrupt the sediment around the wellheads. The organic matter dislodged during cleaning will fall to the seabed.

7.1.2.4 Establishment and recovery of secondary well control

For the BOP installation from a semi-submersible, ROV-operated winches will be lowered with a crane and placed on the seabed. The winches are gravity-based and will be set out ~50m from the wellhead. 4 winches will be used per well, and each winch is ~20.6m², giving a total footprint of ~83m² per well location.

When the 4 winches are recovered, lifting equipment will be attached and they will be retrieved to the MODU. It is anticipated that there will be minor seabed disturbance as the winches are lifted, however, dredging or the use of Mass Flow Excavation is not expected.

7.1.2.5 Cutting of wellhead

The cutting of the wellhead will either be internal or external. If the cutting is performed internally, the cutting material is discharged below the seabed and no external swarf is expected.

If the cutting is performed externally, swarf is expected to settle on the seabed near the wellhead. Dredging around the wellhead may also be required, prior to cutting.

7.1.2.6 Wellhead removal

If the wellheads are removed following permanent abandonment, there are two options – partial and full removal.

A subsea basket may be used to remove infrastructure. The basket is placed temporarily on the seabed and has a footprint of ~30m².

Bags of cement/barite may be present within the Temporary Guide Base (TGB) – if these are removed, or if the TGB is lifted; they may break apart during retrieval.

7.1.3 Potential Environmental Impact

Seabed disturbance has the potential to result in:

- Change in water quality;
- Change in habitat; and
- Change in cultural heritage.

Potential receptors that may be impacted are:

- Water quality;
- Benthic habitats and communities; and
- Cultural heritage values.

There are no marine protected areas or KEFs within the Operational Area.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 214 / 427
			Validity Status	Rev. No. B	

7.1.3.1 Water quality

Change in water quality

A change in water quality may result from a temporary increase in turbidity near the seabed when infrastructure is placed on the seabed, samples are taken, or swarf or other materials fall to the seabed.

Past surveys show the seabed within the Operational Area is characterised predominantly by sand, with gravel, silt and clay (Section 4.3.6).

The greatest seabed disturbance footprint is from MODU positioning of the moored MODU option. The maximum footprint will be up to 1,944m² per well, which assumes up to 12 anchors and associated mooring chains. The temporary turbidity associated with the moored MODU is not considered likely to cause environmental impact given the sparseness of benthic cover and the highly localised impact zone. The high settling velocity of sand (and coarser) material would ensure that the particles do not remain in suspension for an extended period of time.

High pressure saltwater jetting may be used to remove marine growth from the wellhead structures. This will result in temporary suspension of organic matter and localised increase in turbidity; however, water jetting will be limited to what is necessary to perform an effective inspection.

If the cutting of the wellhead is performed externally, swarf is expected to settle on the seabed. During removal of the barite/cement bags, they may break apart and the materials will fall back to the seabed. Both these activities would cause suspension of only a small volume of sediment.

The location of the Operational Area within a homogenous seabed area, and lack of sensitive benthic features, means that turbidity resulting from the described activities is expected to result in only temporary and very localised change in water quality.

7.1.3.2 Benthic habitats and communities

Change in habitat

Benthic habitat may be disturbed when infrastructure comes into contact with the seabed. The seabed within the Operational Area is characterised by sand (with gravel, silt and clay) and sparse sessile epibenthic organisms, as shown by past surveys (Section 4.3.6). Unvegetated soft sediments are a widespread habitat in the region.

The greatest seabed disturbance footprint is from MODU positioning of the moored MODU option. The maximum footprint will be up to 1,944m² per well, which assumes up to 12 anchors and associated mooring chains. Any impact will be limited to the immediate vicinity of each of the anchors and chains, and thus the extent of potential impact is considered to be very localised.

Benthic habitat may also be disturbed through high pressure water jetting and external cutting of the wellhead. The organic matter and swarf that will fall to the seabed as a result of these activities are expected to cause only a small volume of suspended material, in close proximity to the activities.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 215 / 427
			Validity Status	Rev. No. B	

During removal of the barite/cement bags, they may break apart and the materials will fall back to the seabed. The spatial extent of this would be small and a portion is likely to resettle in the same location the bag had occupied.

PCPT and jack-up spud cans are likely to leave holes in the seabed sediment. The sediments are very soft and the holes are expected to collapse and fill in with sediment.

Given the lack of sensitive benthic receptors, and that potential damage would only occur within a small area, it is expected that any areas impacted would rapidly recolonise and recover from any disturbance.

7.1.3.3 Cultural heritage values

Change in heritage values

There are no identified shipwrecks within the Operational Area, with the closest being the Sedco Helen, which is ~4km from Petrel-4.

There are no known Traditional Owners artefacts or specific sites of cultural value associated with the seabed within the Operational Area.

No claims or objections were made by Traditional Owner stakeholder groups regarding seabed disturbance within the Operational Area.

7.1.3.4 Residual risk summary

The worst-case residual severity to water quality, benthic habitat and cultural heritage values from seabed disturbance is evaluated as Slight (1), given the temporary, localised nature of the disturbance, and the lack of sensitive benthic features and sites of cultural heritage value.

The likelihood of impact from seabed disturbance occurring as a result of the activities is considered Credible (C).

Therefore, the residual risk of seabed disturbance due to the petroleum activities is considered Low.

7.1.4 Environmental Performance Outcomes and Control Measures

Environmental Performance Outcomes (EPOs) relating to this risk include:

- Seabed disturbance limited to planned activities (EPO-01).

Control measures (CMs) relating to this risk include:

- MODU move and anchoring procedure (including mooring analysis) (CM-01);
- MODU station keeping system (for DP and DP-assisted MODU option) (CM-02);
- Recovery of all deployed equipment (CM-03);
- Post-activity ROV survey (CM-04); and
- Lifting Operations Standard (ENI HSE ST 007) (CM-05).

Environmental Performance Standards (EPSs) and Measurement Criteria (MC) relating to the above are presented in Section 9.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 216 / 427
				Validity Status	Rev. No.	
					B	

7.1.5 As Low as Reasonably Practicable Demonstration

Demonstration of ALARP			
Type	Control/ Management	Evaluation	Adoption?
Eliminate	Eliminate use of geotechnical survey	This control would eliminate seabed disturbance from seabed sampling, however, geotechnical survey is required for safe positioning if the jack-up MODU option is used. The footprint of the geotechnical survey is comparatively small.	*
	Eliminate marine growth removal	This control would prevent benthic disturbance resulting from water jetting activities, however the failure to remove marine growth means that visual inspections and work on the wells would be impeded.	*
	No placing of equipment on the seabed	This would prevent seabed disturbance from this equipment. However, use of a basket is required in order to safely retrieve subsea equipment.	*
	No removal of wellheads, TGB or PGB	<p>This would eliminate seabed disturbance caused by the removal of subsea equipment and permanent abandonment.</p> <p>However, the option for partial and full removal of the wellheads, TGB, PGB is retained, as per the Options assessment in Section 3.7.</p> <p>Leave in-situ is the most preferred decommissioning option based on the options evaluation undertaken in Table 3-8. Full or partial removal options were evaluated against the leave in-situ option. The leave in-situ option was ranked 'most preferred' for 6 of the 11 sub-criteria. The full and partial removal options was ranked 'most preferred' for only two of the 11 sub-criteria for ecological services, and residual risk to other marine users.</p> <p>It is important to note that Eni have included partial and full removal of the wellheads as part of the scope of this EP should such action become necessary in the future such as future regulatory changes. The full or partial removal options are not preferred given the lower preference rankings in environment, technical feasibility, health and safety, and economic criteria.</p> <p>The potential risks to the environment, health and safety, challenges to technical feasibility and the cost of the full or partial removal options are considered disproportionately high to the low environmental benefits that full or partial removal of equipment would provide. Given ongoing risks from the leave in-situ option from the physical presence of equipment in-situ are assessed as Low and demonstrated to be acceptable.</p>	Optional

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 217 / 427
			Validity Status	Rev. No. B	

Demonstration of ALARP			
Type	Control/ Management	Evaluation	Adoption?
Substitute	MODU option with no anchoring requirements	<p>The use of a dynamically positioned floating MODU which does not moor instead of a moored MODU or jack-up MODU would remove the impact to seabed from the MODU positioning.</p> <p>The selection of MODU type is determined by MODU availability, feasibility of MODU positioning, feasibility of interfacing with the legacy wellheads for which the structural integrity requires further investigation and confirmation of P&A methodology pursuant to the accepted WOMP.</p> <p>Moored and jack-up MODUs are retained as an option.</p>	*
Engineering	Not applicable	N/A	N/A
Isolation	Not applicable	N/A	N/A
Administrative	Lifting operations	This control manages safe lifting operations during retrieval of subsea equipment.	✓ (CM-05)
	MODU move and anchoring procedure (mooring analysis)	If a MODU on DP is selected, this control manages the mooring plan, accidental contact with the seabed and subsea infrastructure and reduces risk to seabed habitat.	✓ (CM-01)
	Recovery of deployed equipment	Prevents ongoing impact to the seabed due to equipment being left in situ. Minimal additional cost to recover equipment.	✓ (CM-03)
	Post-activity ROV survey	Confirms understanding of physical environment in operational area post activities. Costs resulting from up to 2 days if separate campaign is required.	✓ (CM-04)

7.1.6 Acceptability Demonstration

Demonstration of acceptability	
Compliance with Legal Requirements, Laws and Standards	<p>The petroleum activities will be undertaken to ensure there is no impact upon cultural heritage properties protected under the <i>Underwater Cultural Heritage Act 2018</i>.</p> <p>There are no known cultural heritage sites of significance or shipwreck sites within the Operational Area.</p>
Policy Compliance	<p>The management of seabed disturbance is aligned with Eni policies and standards. The residual risk is Low, which is acceptable.</p> <p>The EPOs, CMs and EPSs that will be implemented are consistent with Eni internal requirements.</p>
Social Acceptability	<p>Stakeholder consultation has been undertaken (refer Section 5).</p> <p>No claims or objections were made by stakeholders regarding seabed disturbance within the Operational Area.</p> <p>An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.</p>

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 218 / 427
				Validity Status	Rev. No. B	

Area Sensitivity/ Biodiversity	The benthic environment within the Operational Area is characterised by sand (with gravel, silt and clay) and sparse sessile epibenthic organisms (Section 4.3.6). Impacts to the marine environment from seabed disturbance will be highly localised. There are no KEFs or AMPs overlapping the Operational Area. The evaluation of impacts and risks indicates significant impacts to MNES will not result from seabed disturbance. Seabed disturbance has not been identified as a threat in any recovery plans or conservation advice for threatened and migratory species.
ESD Principles	The activity is consistent with the principles of ESD because: the impacts associated with this hazard do not result in 'threats of serious or irreversible harm' as detailed within the EPBC Act and biodiversity and ecological integrity will be maintained there are no identified health, diversity or productivity impacts that may affect the biodiversity or ecological function for future generations.
ALARP	The residual risk has been demonstrated to be ALARP.

Given the localised seabed disturbance from these activities, and lack of sensitive benthic habitat or features, the potential impacts associated with seabed disturbance are considered to be Slight (1). The residual risk is considered Low, which is acceptable in accordance with Eni's acceptability criteria (Table 6.5). Potential impacts associated with seabed disturbance are acceptable and ALARP.

7.2 Physical Interaction - Other Marine Users

7.2.1 Summary of Environmental Risk Assessment

Hazard	Physical Interaction - Other Marine Users		
	Frequency	Severity	Risk
Inherent Risk	B	1	L
Residual Risk	A	1	L

7.2.2 Description of Hazard

During the petroleum activities, interaction with other marine users may occur as a result of:

- MODU Operations; and
- Vessel Operations.

The presence of the MODU and vessels within the Operational Area during the petroleum activities has the potential to result in interactions with other marine users. The Operational Area is a 3km radius around the 2 wells and the corridor between them. There is no formal Petroleum Safety Zone, however exclusion and cautionary zones will be in place during activities.

Vessel and MODU transit outside of the Operational Area is not within scope of this EP and comes under the *Navigation Act 2012*.

The monitoring and pre-decommissioning vessel-based campaigns have an expected duration of 14 to 40 days. The As-left survey has a duration of 2 days per well, but this campaign is likely to occur at the same time as the decommissioning campaign. The decommissioning campaign using the MODU has an expected duration of up to 60 days (30 days per well).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 219 / 427
			Validity Status	Rev. No. B	

The closest wellhead to the shore is Petrel-3, which lies approximately 250km WSW of Darwin (NT) and 280km N from Wyndham, on the northern coast of WA.

The physical interaction with other marine users as a result of leaving partial or full wellheads in-situ is assessed in Section 8.1.

7.2.2.1 MODU Operations

The MODU will be in the Operational Area for up to 60 days undertaking decommissioning activities. Once decommissioning is completed at the first well, it will move to the second well; and then demobilise from the Operational Area once the activities are complete.

During operations, other marine users may be temporarily displaced from the area surrounding the activity by the presence of exclusion zones around the MODU, which includes:

- A 2km radius cautionary zone around the MODU to allow for anchors, mooring chains and wire to be placed within the Operational Area during decommissioning activities; and
- A safety exclusion zone of 500m around the MODU for each well. The safety exclusion zone will be communicated via a 'Notice to Mariners' outlining the exclusion zone and timeframe for the decommissioning activities.

7.2.2.2 Vessel Operations

Vessels are expected to be present in the Operational Area for all the campaigns covered in this EP. The maximum number of vessels in the Operational Area at a single time is expected to be 3 AHSVs plus the MODU during the decommissioning campaign.

The presence of vessels has the potential to exclude or displace some activities by other marine users.

7.2.3 Potential Environmental Impact

Interaction with other marine users has the potential to result in:

- Change to the functions, interests and activities of other marine users.

Potential receptors that may be impacted are:

- Commercial fisheries;
- Offshore industry; and
- Defence.

Due to the distance from shore, there is not expected to be any recreation or traditional fishing in the Operational Area; nor are there any commercial shipping routes. There are no subsea cables in the Operational Area.

7.2.3.1 Commercial Fisheries

Change to the functions, interests and activities of other marine users

A number of Commonwealth and State (WA and NT) fishery management areas are located within the Operational Area (Section 4.6.1); and an assessment was undertaken to identify potential interactions based on historic catch data and intensity, sourced from relevant datasets and for data periods.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 220 / 427
				Validity Status	Rev. No. B	

Of the Commonwealth-managed fisheries with designated management areas that overlap the Operational Area, none of these are considered active. Of these fisheries, only the Northern Prawn Fishery (NPF) has historical fishing effort that overlaps the EMBA only (not the Operational Area). Highest intensity fishing efforts during the 2016-2022 seasons took place in the nearshore coastal NT waters (Butler et al., 2023). The Operational Area does not fall within any effort fishing intensity area, as indicated through the Commonwealth Fishery Status Reports (Butler et al., 2023). Engagement with the NPF confirmed there is no NPF fishing effort in the immediate vicinity of the wellheads, and that the JBG fishery is closed from 1st December to 1st August each year (Section 5).

The Open Access in the North Coast Fishery is the only WA-managed fishery active that is considered active within the Operational Area, with 60NM CAES block reporting six vessels for the Operational Area; and between <3-37 active vessels across the 2017-2022 seasons (DPIRD, 2023).

Four Northern Territory-managed fisheries are active in the Operational Area and may interact with activities (Section 4.6.1):

- Northern Territory Aquarium Fishery: Hand-held equipment. Analysis of five years of NT fishing effort data (2017-2021) shows 1 licence operating in the Operational Area (NT GOV, 2021);
- Demersal Fishery: Line and fish-trap gear. Analysis of five years of NT fishing effort data (2017-2021) shows 3 licences operating in the Operational Area (NT GOV, 2021);
- Offshore Net and Line Fishery: Demersal/pelagic long-lines. Analysis of five years of NT fishing effort data (2017-2021) shows 1 licence within the Operational Area (NT GOV, 2021);
- Spanish Mackerel Fishery: Troll/floating long lines. Analysis of five years of NT fishing effort data (2017-2021) shows 1 licence within the Operational Area (NT GOV, 2021); and
- Note fishing tour operators are permitted to fish in Territory waters, and do not have management areas. Analysis of five years of NT fishing effort data (2017-2021) shows 1 licence within the Operational Area (NT GOV, 2021).

The petroleum activities are anticipated to only result in a temporary disruption to commercial fishing, as the exclusion and cautionary zones are small, fishing intensity in the Operational Area is low, and the duration is relatively short (with the longest campaign being 60 days).

7.2.3.2 Defence

Change to the functions, interests and activities of other marine users

The Northern Australia Exercise Area military zone overlaps the Operational Area. This zone is mainly utilised for activities associated with border protection including surveillance, illegal immigration, and illegal fishing. This area is occasionally used for live firing military exercises.

The petroleum activities are anticipated to only result in a temporary disruption to Defence exercise activities, as the exclusion and cautionary zones are small and the duration is relatively short (with the longest campaign being 60 days).

Consequently, it is unlikely that the petroleum activities will pose a challenge to future Defence activities in the Operational Area.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 221 / 427
			Validity Status	Rev. No. B	

7.2.3.3 Offshore industry

Change to the functions, interests and activities of other marine users

Interaction with other activities from the offshore industry is not expected to occur. There are several petroleum or CCS activities within the Bonaparte Basin, however none of the activities accepted or proposed overlap with the Petrel-3 and Petrel-4 Operational Area (Section 4.6.5).

No CCS permits overlap with the NT/RL1 and WA-6-R permits, therefore direct interference with any future CCS activities is not expected. Eni is the titleholder of NT/RL1 and WA-6-R; and any future development within the title would be evaluated and undertaken by Eni.

The closest platform is the Blacktip Wellhead Platform, which is also operated by Eni, located ~100km southeast of the Operational Area.

EOG Resources Australia and Inpex were engaged during stakeholder consultation (Section 5). Both companies have proposed activities in the area, outside the Operational Area, but within the EMBA. They raised the possibility of simultaneous operations and Eni have committed to ongoing communication with both titleholders.

The petroleum activities are anticipated to only result in a temporary disruption to Defence exercise activities, as the exclusion and cautionary zones are small and the duration is relatively short (with the longest campaign being 60 days).

Consequently, it is unlikely that the petroleum activities will pose a challenge to future other offshore industries in the Operational Area.

7.2.3.4 Residual risk summary

The worst-case residual severity to commercial fisheries and offshore industry from the presence of vessels and MODU is evaluated as Slight (1), given the low activity of commercial fishing activity and offshore industry in the Operational Area.

The likelihood of changing the functions, interests and activities of other marine users from Petrel-3 and Petrel-4 petroleum activities is considered Rare (A) due to:

- Low intensity of fishing effort in the Operational Area; and
- No offshore industry activities within the Operational Area.

Therefore, the residual risk of interactions with other marine users due to the petroleum activities is considered Low.

7.2.4 Environmental Performance Outcomes and Control Measures

EPOs relating to this risk include:

- Information is provided to relevant persons to manage impacts on their functions, interests, and activities (EPO-02); and
- Activities are managed in accordance with navigational and safety requirements (EPO-03).

CMs relating to this risk include:

- Navigation equipment and procedures (CM-06); and
- Consultation with relevant persons (including notification requirements) (CM-07).

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 222 / 427
				Validity Status	Rev. No. B	

EPSs and MC relating to the above are presented in Section 9.

7.2.5 As Low as Reasonably Practicable Demonstration

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
Eliminate	Eliminating the use of MODU and support vessels in the Operational Area	Not considered feasible as a MODU and support vessels are the only form of equipment that can undertake the activities.	*
	Timing of activities to avoid NPF JBG fishing season (August to November)	<p>During 2024 consultation, the NPMI confirmed there is no NPF fishing effort in the immediate vicinity of the wellheads, but advises the preference for activities to be scheduled when the NPI JBG fishery is closed, to limit any impacts on fishing operations from Eni vessel transit (Section 5).</p> <p>The timing of the Petrel monitoring and decommissioning activities is subject to vessel and MODU availability in the region as well as weather conditions; and given the nature of the work, it is not feasible to commit to limiting work to specific periods of the year.</p> <p>The petroleum activities will occur at the two wellheads, within the 3km radius identified as the Operational Area. Given the short duration of the longest campaign (up to 60 days) and the relatively small radius of the exclusion and cautionary zones, there are no benefits in timing the activities to avoid NPF JBG fishing season.</p> <p>The potential impact to commercial fish species and fisheries from the petroleum activities is assessed in relevant sections in Section 7 and 8; and is considered acceptable and reduced to ALARP.</p>	*
Substitute	N/A	N/A	N/A
Engineering	Navigation equipment and procedures	<p>Ensures the MODU and vessels are seen by other marine users.</p> <p>Reduces risk of environmental impact from vessel collisions due to ensuring safety requirements are fulfilled.</p> <p>Negligible costs of operating navigational equipment.</p> <p>A requirement under Marine Orders, requires vessels to have navigational equipment to avoid collisions.</p>	✓ (CM-06)
Isolation	N/A	N/A	N/A
Administrative	Consultation with relevant	Relevant persons consultation ensures marine users are aware of the drilling activities, reducing	✓

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 223 / 427
			Validity Status	Rev. No. B	

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
	persons (refer Section 5)	<p>the likelihood of unplanned interactions. Provides marine users an opportunity to request practicable interface control measures.</p> <p>Enables identification of potential Sea Country protection or enhancement initiatives, and implementation where practicable.</p> <p>To ensure Eni activities do not conflict with Defence training in the future, Eni will notify Defence a minimum of five weeks before the actual commencement of activities. Notification will need to be provided to offshore.petroleum@defence.gov.au.</p> <p>Minor administrative costs in notifying Defence.</p> <p>Ensures Defence is aware of the activities, reducing likelihood of interactions.</p>	(CM-07)

7.2.6 Acceptability Demonstration

Demonstration of acceptability	
Compliance with Legal Requirements, Laws and Standards	<p>Physical presence of petroleum activities is managed in accordance with relevant legislative requirements, including compliance with international maritime conventions and Australian legislation, being:</p> <ul style="list-style-type: none"> • International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978 • International Convention for the Safety of Life at Sea 1974 • International Regulations for Preventing Collisions at Sea 1972 • <i>Navigation Act 2012</i>, including, as appropriate to vessel class: <ul style="list-style-type: none"> – Marine Order 21: Safety and emergency arrangements) – Marine Order 30: Prevention of Collisions) – Marine Order 71: Masters and Deck Officers. <p>Eni will not interfere with the rights of other marine users to a greater extent than is necessary for the reasonable exercise of right conferred by the titles granted, as per Section 280 of the OPGGS Act.</p>
Policy Compliance	<p>The management of physical presence of the petroleum activities is aligned with Eni policies and standards. The residual risk is Low, which is acceptable.</p> <p>The EPOs, CMs and EPSs that will be implemented are consistent with Eni internal requirements.</p>

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 224 / 427
				Validity Status	Rev. No. B	

Demonstration of acceptability	
Social Acceptability	<p>Engagement with the NPFI confirmed that NPF operators do not have any objection to the decommissioning of Petrel-3 and Petrel-4; and confirmed there is no NPF fishing effort in the immediate vicinity of the wellheads (Section 5). NPF advised the preference for activities to be scheduled when the NPI JBG fishery is closed, to limit any impacts on fishing operations from Eni vessel transit. However, the timing of the Petrel monitoring and decommissioning activities is subject to vessel and MODU availability in the region as well as weather conditions; and given the nature of the work, it is not feasible to commit to limiting work to specific periods of the year. Given the short duration of activities (with the longest campaign <60 days), the potential impact to the NPF from transiting vessels is considered acceptable.</p> <p>NTSC, AFMA, Northern Wildcatch Seafood Australia (NWSA), RecFishWest, DITT NT Fisheries, the Wilderness Society and EOG Resources and Inpex requested to be notified prior to activities commencing (Section 5); and have been included in routine external notifications (Table 10-3).</p> <p>Eni will notify Defence a minimum of five weeks before the actual commencement of activities.</p> <p>An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.</p>
Area Sensitivity/ Biodiversity	<p>The Operational Area overlaps the management area of the NPF however there has not been any historical fishing effort recorded based on data from 2010-2022 (Summerson, 2024).</p> <p>The Operational Area overlaps with low effort fishing area and/or low number of licences for the following fisheries:</p> <ul style="list-style-type: none"> • WA Open Access in the North Coast Fishery (6 vessels) • NT Aquarium Fishery (1 licence) • NT Demersal Fishery (3 licences) • NT Offshore Net and Line Fishery (1 licence) • NT Spanish Mackerel Fishery (1 licence) • NT fishing tour operator (1 licence). <p>No CCS permits overlap with the NT/RL1 and WA-6-R permits, therefore direct interference with any future CCS activities is not expected. Eni is the titleholder of NT/RL1 and WA-6-R; and any future development within the title would be evaluated and undertaken by Eni.</p> <p>Physical presence of infrastructure has not been identified as a threat in any recovery plans or conservation advice for threatened and migratory species.</p>
ESD Principles	<p>The petroleum activities are consistent with the principles of ESD because:</p> <ul style="list-style-type: none"> • the nature and scale of potential impacts from physical presence is not inconsistent with the integration principle • the precautionary principle was applied, and the analysis of available fishing data and usage information was supplemented with consultation where knowledge gaps were identified.
ALARP	The residual risk has been demonstrated to be ALARP.

Given the low volume of other marine users within the Operational Area, the small spatial extent of the Operational Area and short duration of activities, the potential impacts are Slight

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 225 / 427
			Validity Status	Rev. No. B	

(1). The residual risk is considered Low, which is acceptable in accordance with Eni's acceptability criteria (Table 6-5). Potential impact associated with interactions with other marine users is considered acceptable and ALARP.

7.3 Physical Presence – Equipment in-situ

7.3.1 Summary of Environmental Risk Assessment

Hazard	Physical Presence – Equipment in-situ		
	Frequency	Severity	Risk
Inherent Risk	A	1	L
Residual Risk	A	1	L

7.3.2 Description of Hazard

During the petroleum activities, interaction with equipment may occur as a result of:

- The permanent presence of the wellhead or other equipment, if these are left in-situ; depending on final selection of wellhead removal option following the pre-decommissioning inspection.

Leave in-situ has been identified as the worst-case option for physical presence – equipment in-situ, and is used as the basis for impact assessment in this section (as per options assessment in Section 3.6).

7.3.2.1 Wellhead removal options

If the wellheads or other equipment (i.e. the TGB and PBG) are left in-situ following decommissioning, the permanent physical presence will continue to:

- Provide a hard substrate resulting in the creation of a new habitat;
- Potentially interrupt natural sediment movement in the immediate vicinity of the wellhead remaining in-situ permanently; and
- Introduce contaminants to the water column and sediment surrounding the wellhead as it degrades over time.

The wellheads have been in place since the 1980s, and protrude ~3m above the seabed. The wellheads are constructed of steel. The TGB may have bags of concrete or barite originally used as ballast during installation.

Removal of the cement patio is not proposed under the activities performed in this EP. According to previous wellhead surveys, this item is buried, and the removal would create additional seabed disturbance.

The unplanned interaction with other marine users due to the presence of the wellheads is assessed in Section 8.1.

7.3.3 Potential Environmental Impact

The physical presence of equipment left in-situ has the potential to result in:

- Change in water or sediment quality;

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 226 / 427
				Validity Status	Rev. No. B	

- Change in habitat; and
- Injury / mortality to marine fauna.

Potential receptors that may be impacted are:

- Water and sediment quality;
- Benthic habitats and communities; and
- Threatened and migratory fauna.

There are no marine protected areas or KEFs within the Operational Area. No Traditional Owner heritage sites were identified within the Operational Area during consultation with stakeholders.

7.3.3.1 Water and sediment quality

Change in water quality

If the wellheads, TGB, and PGB are left in-situ, they will degrade slowly over a long period of time, gradually releasing corrosion materials. The material used in the construction of 1980s-era wellheads was low-alloy steel. Table 7-1 provides the typical composition of low-alloy steel, based on the range of minimum and maximum percentage compositions across three commonly used wellhead material specifications (AISI 8630, AISI 4130, ASTM A182 F22). There is not expected to be any other material components, such as plastic coatings.

Table 7-1 Typical wellhead composition

Frequency	Typical wellhead material composition ranges	
	Minimum %	Maximum %
Iron	95.04	98.22
Carbon	0.05	0.33
Chromium	0.4	2.5
Molybdenum	0.15	1.13
Manganese	0.3	0.95
Nitrogen	0	0.75
Silicon	0	0.5
Sulphur	0	0.04
Phosphorous	0	0.04

Source: AISI 8630, AISI 4130, ASTM A182 F22

If the TGB is left in-situ, it may have bags of concrete or barite inside that were originally used as ballast during installation. Where possible these bags will be removed. If deemed unsafe, these bags will remain in situ and would degrade over time and enter the water column or fall to the seabed.

As corrosion materials are gradually released over time, they will gradually enter the water column and surrounding sediments. Given water depth and open ocean location, it is expected corrosion products will rapidly disperse. Studies of erosion and accretion around subsea structures (e.g. shipwrecks, artificial reefs) indicate indirect impacts may be limited to within 20m of the structure (Smiley 2006; Lewis and Pagano 2015).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 227 / 427
			Validity Status	Rev. No. B	

The Petrel-3 and Petrel-4 wellheads and associated equipment are 2-3m tall and 1x1m wide. They are relatively small structures; and therefore, the 20m potentially affected area identified in these studies is considered reasonable.

7.3.3.2 Benthic habitats and communities

Change in habitat

Benthic habitat surveys indicated that the soft sediment seabed is comprised primarily of sand, coarse shell fragment and silt. Sediments in the Petrel field were dominated by sand with similar gravel, silt and clay proportions (ERM, 2011). Unvegetated soft sediments are a widespread habitat in both intertidal and subtidal areas, particularly in areas beyond the photic zone.

The wellheads, TGB, and PGB are comprised of low-alloy steel (Table 7-1) – of which the main component is iron (typically 95-98%). The toxicity of iron is only acute to marine organisms at extremely high concentrations; which are not expected to be reached to be reached in this situation. Corrosion of the wellhead is likely to be a relatively slow process of ~0.2mm/year (Melchers, 2005).

Given the water depth and open ocean location, it is expected that corrosion products will rapidly disperse. The trace elements of metals released by gradual degradation are not expected to cause toxicity to benthic or infauna species.

Over time as the wellhead integrity reduces, sections of the wellheads, TGB, and/or PGB may break off and fall to the seabed, causing a small area of seabed disturbance and smothering in direct proximity to the wellhead. Relevant studies of erosion and accretion around subsea structure indicate impacts may be limited to within 20m of the structure.

Over time as the TGB degrades, surrounding cement/barite bags may deteriorate, releasing their contents onto the seabed and surrounding waters. Cement/barite and associated metals diffused in the water column are expected to disperse rapidly from strong ocean currents in the area. Metals diffused in the seabed are expected to be limited to the immediate surrounds of the wellhead location, and within 20m of the structure. Under certain oceanic conditions, metals diffused in the seabed may resuspend into the water column and deposit further from the well head, preventing the build-up of high concentrations immediately around the wellhead. Given the widespread nature of the benthic environment and the limited scale of the impact to the seabed and water column, no significant long-term effects on habitat or ecosystem function are anticipated.

7.3.3.3 Marine fauna

Injury / mortality to marine fauna

The wellheads, TGB, and PGB are comprised of low-alloy steel (Table 7-1) – of which the main component is iron (typically 95-98%). The remainder making up the approximate combined percentage by weight are chromium, molybdenum, manganese, and <1% of trace alloys including nickel, silicon, sulphur and phosphorous. Cement/barite contained in bags used around the TGB, has the potential of containing trace heavy metals including barium, manganese, iron, chromium, copper, and/or lead. Despite the potential of trace metals, cement/barite is considered virtually inert (Elswick and Maynard, 2014). Potential trace heavy metals in the cement/barite have been shown to have a low bioavailability as they tend to remain in a non-ionic form and remain bound to other compounds, presenting a low toxicity risk to marine fauna (Neff 2005). The main constituents of the wellhead, TGB, and PGB (Table 7-1) are only toxic to marine organisms at high concentrations (ANZECC, 2000). These

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 228 / 427
				Validity Status	Rev. No. B	

concentrations are not expected to be reached in this situation (i.e. the gradual decay of solid metal structures in deep water).

Iron, carbon, nitrogen, silicon, sulfur, and phosphorus are abundant in the marine environment and generally poses minimal risk to marine life (Grimwood and Dixon 1997). While molybdenum, and manganese is essential for living organisms, it is also present in seawater (ANZECC, 2000). The concentrations of these constituents from the degradation of the wellheads, TGB, and PGB are unlikely to reach the high in-water or sediment concentrations required to harm marine ecosystems given strong ocean currents diluting potential suspended metals and in-water metal concentrations surrounding the wellhead. Given the water depth and open ocean location, it is expected that corroded and trace metals will rapidly disperse. The potential build-up of corroded metals in the sediments around the wellhead from deposition would be counteracted by gradual dissipation because of local sediment movements (Morelli and Gasparon, 2019). The disturbance of sediments from storms, waves and strong ocean currents is likely to redistribute the build-up of deposited corroded metals. The dissipation fates of deposited corroded metals are also expected for the potential trace heavy metals within cement/barite bags around the TGB if released to the marine environment. As a result, corroded metals and trace heavy metals will be quickly dispersed, preventing the on-going presence of metals at concentrations needed to cause injury or mortality to marine fauna.

Marine fauna in the Operational Area, such as marine mammals, marine reptiles, fish, sharks and rays, are generally mobile and unlikely to have prolonged contact to in-water concentrations of any corroded wellhead constituents. The rapid dispersal of well constituents with the transient nature of marine animals means that exposure times are expected to be minimal and unlikely to cause harm. Impacts to benthic fauna is likely be temporary and localised (within 20 m of the wellhead). While a decrease in local population size may occur to benthic fauna, rapid recolonisation is expected and therefore, no loss or disruption of habitat critical to the survival of a species or disruption to the breeding cycle of any marine fauna is expected.

Surveys on the Petrel-3 and Petrel-4 wellheads shows they have significant marine growth (Section 3.1.1). Several studies undertaken on wellheads in the NWS have observed a diverse range of reef dependant and transient pelagic species associating with structures including commercially fished species (Pradella et al. 2013). Wellheads in the NWS at depths between 82 and 135m were found to sustain full populations of *Prurizonatus* from juveniles through to adults (Fowler and Booth 2012). The physical presence of the wellhead is likely to have a localised increase in the abundance of some fish species; thereby providing the potential for fish assemblages (Stephens 1998 cited in Frumkes 2002).

There are no marine protected areas or KEFs in the Operational Area.

7.3.3.4 Residual risk summary

The worst-case residual severity from the physical presence of equipment left in-situ is evaluated as Slight (1), given the low toxicity of the main constituents of the wellheads and equipment, small size and slow degradation.

The likelihood of impact as a result of the activities is considered Rare (A).

Therefore, the residual risk of physical presence of equipment left in-situ due to the petroleum activities is considered Low.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 229 / 427
			Validity Status	Rev. No.	
				B	

7.3.4 Environmental Performance Outcomes and Control Measures

The potential changes to the marine environment from leaving the wellhead in situ are risks that are considered Low and undetectable. Outcomes of the ALARP and acceptability demonstrations determined no control measures are required to be adopted. With no control measures adopted for physical presence of equipment in-situ, no environmental performance outcomes are required and have not been included.

ALARP and acceptability demonstrations are detailed in Sections 7.3.5 and 7.3.6.

7.3.5 As Low as Reasonably Practicable Demonstration

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
Eliminate	Full or partial removal	<p>Eni will undertake a pre-decommissioning inspection to clean the wellheads and record various observations and measurements to assess the integrity status of the wellheads and inform MODU/vessel selection feasibility. The outcomes of this inspection will also inform final selection of the wellhead removal option. Leave in-situ is the most preferred decommissioning option based on the options evaluation undertaken in Table 3-8. Full or partial removal options were evaluated against the leave in-situ option. The leave in-situ option was ranked 'most preferred' for 6 of the 11 sub-criteria. The full and partial removal options was ranked 'most preferred' for only two of the 11 sub-criteria for ecological services, and residual risk to other marine users.</p> <p>The full or partial removal options are not preferred given the lower preference rankings in environment, technical feasibility, health and safety, and economic criteria. Justification is summarised as follows.</p> <p>In terms of environment criteria, the full or partial removal options introduces new risks to the environment compared to the leave in-situ option, including:</p> <ul style="list-style-type: none"> • Release of fluid within the annulus • Rupture of cement/barite bags serving as ballast for the TGB • Generation of underwater noise emissions, GHGs, waste. <p>In terms of technical feasibility and health and safety:</p> <ul style="list-style-type: none"> • Challenges may arise from the age and integrity of the equipment when lifted • Introduce risk to safety and health from possibility that equipment may break apart during lifts. 	Optional

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 230 / 427
			Validity Status	Rev. No. B	

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
		<p>In terms of economic financial cost, the full or partial removal options would amount to ~\$4 million in total for each option.</p> <p>The potential risks to the environment, health and safety, challenges to technical feasibility and the cost of the full or partial removal options are considered disproportionately high to the low environmental benefits that full or partial removal of equipment would provide. Given ongoing risks from the leave in-situ option from the physical presence of equipment in-situ are assessed as Low and demonstrated to be acceptable, in the event this option is selected following the pre-decommissioning inspection.</p>	
Substitute	N/A	N/A	N/A
Engineering	Wellheads monitoring	<p>If the wellheads are left in-situ, there is no compelling reason for wellhead monitoring given the environmental assessment is predicting negligible impacts. There is a low level of uncertainty associated with the prediction of impacts.</p> <p>A monitoring campaign is estimated to cost approximately AUD \$200,000. Numerous monitoring campaigns would be required to collect meaningful data. Impacts are unlikely to be detectable beyond the immediate area surrounding the wellhead; or be detectable for decades, given the slow rate of decay (Melchers, 2005).</p> <p>The environmental impacts and risks associated with additional vessel campaigns, and health and safety risks associated with an offshore monitoring program are considered disproportionately high to the low environmental benefits that a monitoring program would possibly provide.</p>	*
	Wellheads maintenance	<p>If the wellheads are left in-situ, there is no justification for maintaining the wellheads (if left in-situ), following permanent abandonment; as there is no risk of LOWC. The reservoir is sub-hydrostatic, meaning it will not flow without being pumped. The wells will be permanently plugged and abandoned.</p> <p>The wellheads will slowly degrade, lose their structural integrity and eventually break apart. This is inevitable, and the desired outcome.</p>	*
Isolation	N/A	N/A	N/A
Administrative	N/A	N/A	N/A

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 231 / 427
				Validity Status	Rev. No. B	

7.3.6 Acceptability Demonstration

Demonstration of acceptability	
Compliance with Legal Requirements, Laws and Standards	<p>Section 572(3) of the OPGGS Act allows for deviations to the base case should the alternative decommissioning approach deliver equal or better environmental and safety outcomes compared to complete removal. The pre-decommissioning inspection (Section 3.2.3) will assess well integrity, status of cleaning and modification, and identify the appropriate MODU type; and will inform final selection of the wellhead removal option.</p> <p>Leave in-situ is the most preferred decommissioning option based on the options evaluation undertaken in Section 3.6.4. Full or partial removal options were evaluated against the leave in-situ option; and the leave in-situ option was ranked 'most preferred' for 6 of the 11 sub-criteria. The residual risk of the physical presence of equipment in-situ was evaluated as Low, in the event this option is selected.</p> <p>The physical presence of equipment in-situ is managed in accordance with the <i>Sea Dumping Act 1981</i>. Eni has reviewed the <i>Sea Dumping Act 1981</i> and engaged with DCCEEW (Section 5), and determined the temporary P&A activities for Petrel-3 predates the Act and therefore Petrel-3 equipment abandonment does not require a permit.</p> <p>However, temporary P&A activities for Petrel-4 were conducted after the Act was in place. If any equipment is left in-situ as a result Petrel-4 abandonment, a Sea Dumping permit will be required.</p>
Policy Compliance	<p>No controls are proposed for the management of physical presence of the wellheads and equipment which is aligned with Eni policies and standards, given the residual risk is Low, which is acceptable.</p>

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 232 / 427
				Validity Status	Rev. No. B	

Demonstration of acceptability	
Social Acceptability	<p>Eni consulted with the NPFI and WAFIC (as described in Section 5), and no concerns were raised regarding the physical presence of the wellheads or potential snag risk, if the wellheads are left in-situ. The NPFI confirmed that NPF operators do not have any objection to the decommissioning of Petrel-3 and Petrel-4, and confirmed there is no NPF fishing effort in the immediate vicinity of the wellheads.</p> <p>During consultation, the Wilderness Society advised that they object to anything other than complete removal of the wellheads (Section 5). Eni confirmed that a pre-decommissioning inspection needs to be conducted to assess the integrity of the structures and come to a final decision on the end state of the infrastructure; and that the options will be evaluated considering impacts to the environment, cultural heritage and other marine users; and as per regulatory requirements. The options assessment undertaken in Section 3.6 demonstrates that the leave in-situ option is the most preferred decommissioning option, and was ranked 'most preferred' for 6 of the 11 sub-criteria. The full and partial removal options was ranked 'most preferred' for only two of the 11 sub-criteria for ecological services, and residual risk to other marine users. The full or partial removal options are not preferred given the lower preference rankings in environment, technical feasibility, health and safety, and economic criteria, as they introduce new risks to the environment, including:</p> <ul style="list-style-type: none"> • Release of fluid within the annulus • Rupture of cement/barite bags serving as ballast for the TGB • Generation of underwater noise emissions, GHGs, waste. <p>Given ongoing risks from the leave in-situ option from the physical presence of equipment in-situ are assessed as Low and demonstrated to be acceptable, in the event this option is selected following the pre-decommissioning inspection.</p> <p>During consultation, DPIRD advised that given the uncertainty of the overall integrity of the structures drilled in the 1980s, they requested Eni considers risks associated with any partial removal options carefully, including in relation to the future risk of any structures or equipment left behind in the environment (Section 5). As described above, Eni confirms that the pre-decommissioning inspection will assess well integrity, status of cleaning and modification, and inform final selection of the wellhead removal option. The options assessment undertaken in Section 3.6 considers all impacts and risks against environmental, technical, health and safety, social and economic criteria. This assessment identified leave in-situ is the most preferred decommissioning option. Given ongoing risks from the leave in-situ option from the physical presence of equipment in-situ are assessed as Low and demonstrated to be acceptable, in the event this option is selected following the pre-decommissioning inspection.</p> <p>An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.</p>

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 233 / 427
			Validity Status	Rev. No. B	

Demonstration of acceptability		
Area Biodiversity	Sensitivity/	<p>The Operational Area does not intersect with any State or Territory marine protected areas, AMPs, wetlands of international or national importance, World, National or Commonwealth heritage properties or places, or KEFs.</p> <p>The Operational Area overlaps foraging BIAs for green turtle and Olive Ridley turtle.</p> <p>Physical presence of equipment in-situ has not been identified as a threat in any recovery plans or conservation advice for threatened and migratory species.</p>
ESD Principles		<p>The petroleum activities are consistent with the principles of ESD because:</p> <ul style="list-style-type: none"> the nature and scale of potential impacts from physical presence is not inconsistent with the integration principle the precautionary principle was applied and the analysis of available fishing data and usage information was supplemented with consultation where knowledge gaps were identified the worst-case option of leave in-situ was used as the basis for the impact assessment, and the residual risk was evaluated as Low.
ALARP		The residual risk has been demonstrated to be ALARP.

The worst-case wellhead removal option of leave in-situ was used as the basis for the impact assessment. Given the localised impacts to water and sediment quality, benthic habitats and communities and marine fauna, potential impacts associated with physical presence of equipment in-situ are considered to be Slight (1). The residual risk is considered Low, which is acceptable in accordance with Eni's acceptability criteria (Table 6-5: Eni acceptability factors). Potential impact associated with physical presence of equipment in-situ is considered acceptable and ALARP.

7.4 Atmospheric Emissions and Greenhouse Gas

7.4.1 Summary of Environmental Risk Assessment

Hazard	Atmospheric Emissions and Greenhouse Gas		
	Frequency	Severity	Risk
Inherent Risk	B	1	L
Residual Risk	C	1	L

7.4.2 Description of Hazard

7.4.2.1 Scoping

During the petroleum activities, atmospheric and greenhouse gas (GHG) emissions will be generated from:

- MODU operations;
- Vessel operations;
- Helicopter operations;

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 234 / 427
			Validity Status	Rev. No. B	

- Cut and recover casing;
- Material use; and
- Waste retrieval and end-of-life treatment.

GHG emissions are described as Scope 1, 2 or 3, which relate to who has operational control of those emissions (Clean Energy Regulator, 2021). Scope 1 is defined as direct emissions created as a result of the activities, for example, emissions released as a result of burning fuel during offshore campaigns. Scope 2 is related to GHG emissions when electricity is purchased from the grid. Scope 3 emissions occur as a consequence of the activities of a facility, but from sources not owned or controlled by that facility's business, for example, material use and waste disposal.

7.4.2.2 Boundary of Assessment

Non-GHG emissions include sulphur oxides (SO_x), volatile organic compounds (VOC) and nitrous oxides (NO_x), and may be released to the atmosphere during fuel combustion and vessel operations. Vessels may utilise ozone-depleting substances (ODS) in closed-system rechargeable refrigeration systems. There is no planned release of ODS to the atmosphere.

The vessels and MODU will not use an incinerator to dispose of waste.

The boundary of assessment for the GHG emissions estimation is outlined in Table 7-2. As there is no planned flaring or venting, the direct Scope 1 emissions cover fugitive emissions resulted from the activities, including the emissions from the casing retrieval.

During the retrieval of the casing, when the seal is broken, a small volume of gas might be released (~1m³). This procedure may be executed once for Petrel-3 and twice for Petrel-4, as the latter has an additional casing that requires removal. Each instance will follow the same controlled release process through the choke manifold to manage any gas emissions.

There are no Scope 2 emissions. Scope 3 emissions sources include MODU and vessel operations, helicopter travels, material use (only the major items are included) and waste generated.

The use of fuel (specifically marine-grade diesel) to power MODU and vessel engines, generators, and mobile and fixed plant (e.g., ROV, back-deck crane, generator), will result in GHG emissions of greenhouse gases such as carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). These gases are recognised to also contribute to the GHG emissions loading globally, which could in turn contribute to climate change.

Table 7-2: Boundary of assessment for GHG emissions estimation

Scope / Project Activities	Monitoring and Pre-decommissioning Activities	Decommissioning Activities	Post-decommissioning Activities
Scope 1	N/A	• Fugitives	N/A
Scope 2	N/A	N/A	N/A

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 235 / 427
			Validity Status	Rev. No.	
				B	

Scope 3	<ul style="list-style-type: none"> • Vessels¹ 	<ul style="list-style-type: none"> • MODU¹ • Vessels¹ • Helicopter • Materials² • Waste³ 	<ul style="list-style-type: none"> • Vessel¹
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¹ The general transit to and from the Operational Area is excluded from the scope of the EP.

² Assumed major items only - cement, casing and drilling fluid.

³ Assumed 100% retrieval of wellhead, TGB, PGB and guideposts.

7.4.2.3 GHG Modelling

GHG emissions were estimated by multiplying the activities with the emissions factors in accordance with the methods in NGER Determination 2008. Diesel oil for transportation and kerosene emissions factors from NGER Determination were used for estimating the emissions from vessel operations and helicopter, respectively. The embodied carbon emissions factors of the major materials used were taken from the ICE database. It was assumed that all the retrieved materials will be landfilled as industrial waste, with the emissions factor taken from UK GHG Conversion Factors.

Table 7-3 shows the GHG emissions for the project activities. Scope 1 emissions were calculated to be immaterial (less than 1% of the total emissions). The total Scope 3 emissions were estimated to be approximately 29.5 kt CO₂-e, less than ~0.0015% of the Australian carbon budgets for the duration 2025 to 2030.

Figure 7-1 shows the breakdown of the GHG emissions by source. Vessel operations, MODU operations and material use generated most of the GHG emissions, contributing ~66%, 17% and 15% of the total emissions respectively, with helicopter and waste emissions less than ~1% of the total emissions.

Table 7-3: GHG emissions estimation for the project activities

Emissions Scope	Monitoring and Pre-decommissioning Activities	Decommissioning Activities	Post-decommissioning Activities	Total Emissions (t CO ₂ -e)
Scope 1 (t CO₂-e)	0	< 0.1	0	< 0.1
Scope 2 (t CO₂-e)	0	0	0	0
Scope 3 (t CO₂-e)				
Vessels ¹	6,760	12,630	210	19,600
MODU ²	0	4,950	0	4,950
Materials ³	0	4,480	0	4,480
Helicopter ⁴	0	260	0	260
Waste ⁵	0	200	0	200
Total (t CO₂-e)	6,760	22,520	210	29,490

¹ Assumed contingencies included in the durations/timing, transit speed of 4 knots within the OA.

² Based off a semisubmersible MODU on DP for conservatism.

³ Assumed 400 t cement/well, 300 t casing/well and 300 t WBM/well.

⁴ Assumed fuel consumption 550 L/h, travel speed 140 knots, 20% of travel time taxiing.

⁵ Assumed retrieved materials weigh 200 t /well, 100% retrieval from field and landfilled (for conservatism).

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 236 / 427
				Validity Status	Rev. No.	
					B	

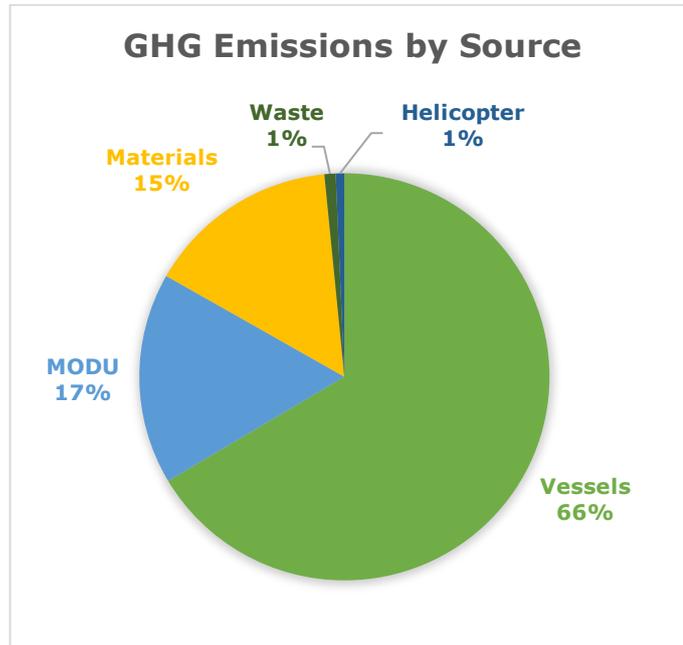


Figure 7-1: Total GHG emissions (Scopes 1, 2 and 3) by source

7.4.3 Potential Environmental Impact

Atmospheric and GHG emissions have the potential to result in:

- Change in air quality.

Potential receptors that may be impacted are:

- Air quality.

Given the relatively short duration of the campaigns and therefore minimal fuel usage, the contribution of GHG emissions to the global carbon budget is expected to be insignificant and is not evaluated further.

There are no marine protected areas or KEFs within the Operational Area.

7.4.3.1 Air quality

Change in air quality

Hydrocarbon combustion may result in a temporary, localised reduction of air quality in the environment immediately surrounding the emission source.

The quantities of gaseous emissions are small and will quickly dissipate into the surrounding atmosphere. Atmospheric emissions will be similar to other vessels operating in the region for both petroleum and non-petroleum activities.

Local impacts typically associated with the atmospheric emissions are mitigated by the dispersive nature of the offshore environment. Any potential local elevated concentrations of emissions will be short-lived and unlikely to be detectable, except in the near vicinity of the release (i.e., within a 500m radius).

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 237 / 427
				Validity Status	Rev. No.	
					B	

As the activity will occur in open-ocean offshore waters, the combustion of fuels in such remote location will not impact on air quality in coastal towns, considering that the nearest township is Wadeye, located ~180km southeast of the Operational Area. The quantities of CO₂ emissions are relatively small (29,490t CO₂-e for all of the monitoring and decommissioning campaigns) and will quickly dissipate into the surrounding atmosphere.

Accidental release and fugitive emissions of Ozone Depleting Substances (ODS) has the potential to contribute to ozone layer depletion. Maintenance of refrigeration systems containing ODS is on a routine, but infrequent basis, and with controls implemented, the likelihood of an accidental ODS release of material volume is considered rare.

Potential impacts are expected to be short-term, localised air quality changes, limited to the air shed local to the Operational Area. Atmospheric emission impacts are not expected to have direct or cumulative impacts on sensitive environmental receptors, or above National Environmental Protection (Ambient Air Quality) measures. Given the low sensitivity of the receiving environment – open offshore location away from coastal communities – the impact on air quality is anticipated to be slight.

Emissions will be small in quantity and will dissipate quickly into the surrounding atmosphere, therefore any reduction in air quality is not expected to result in any measurable effect.

7.4.3.2 Residual risk summary

The worst-case residual severity to air quality from atmospheric emissions is evaluated as Slight (1), given the low volume of emissions from the activity.

The likelihood of atmospheric and GHG emissions occurring as a result of the activities is considered Likely (D).

Therefore, the residual risk of atmospheric and GHG emissions due to the petroleum activities is considered Low.

7.4.4 Environmental Performance Outcomes and Control Measures

EPOs relating to this risk include:

- No significant decrease in air quality (EPO-04).

CMs relating to this risk include:

- Drilling contractor bulk solids transfer procedure (CM-08);
- Waste Incineration (CM-09);
- Vessel fuel quality (CM-10);
- International Air pollution prevention certification (CM-11);
- Ozone-depleting substance handling procedures (CM-12);
- Eni E&P Marine Manual (Marine assurance standard) (CM-13); and
- Planned Maintenance System (PMS) (CM-14).

EPSs and MC relating to the above are presented in Section 9.

Monitoring and reporting of emissions are presented in Section 10.8.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 238 / 427
				Validity Status	Rev. No. B	

7.4.5 As Low as Reasonably Practicable Demonstration

Demonstration of ALARP			
Type	Control/management	Evaluation	Adoption?
Eliminate	Eliminate the use of the MODU or vessels in the Operational Area	Vessels are required to perform equipment removal activities and vessel use cannot be eliminated.	*
	No incineration of waste on MODU or vessels	Eliminates the potential for emissions due to waste incineration impacting air quality. However, increase in health risk from storage of wastes and transport to land.	✓ (CM-09)
Substitute	Use green energy sources on the MODU and vessels	Alternatives such as renewable energy generators (wind and sun) are not viable options as they are weather-dependent and do not supply continuous base load power. Vessels powered by renewables is not currently accepted technology, are not widely available and engaging them would have significant cost and schedule impacts. For the short duration of the campaigns, the benefit is considered grossly disproportionate. The vessels and MODU will use MDO, which is low in sulphur dioxide, in accordance with Marine Order 97.	*
	Vessel fuel quality (in compliance Marine Order 97)	Reduces emissions through use of low-sulphur fuel in accordance with Marine Order 97. Minimal cost as vessels are required to comply with Marine Orders.	✓ (CM-10)
Engineering	N/A	N/A	N/A
Isolation	N/A	N/A	N/A
Administrative	Vessel air pollution prevention certificate (in compliance Marine Order 97)	Reduces the probability of potential impacts to air quality. Minimal cost, as vessels are required to comply with Marine Orders.	✓ (CM-11)
	ODS procedures	Where present, ensure vessel's ODS are managed in a way that is responsible and as per international standards.	✓ (CM-12)
	Planned Maintenance System	Ensures vessels and MODU is running efficiently and are as per manufacture specifications. Routine maintenance endeavours to ensure emissions are minimal. No additional costs, is industry best practice.	✓ (CM-14)

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 239 / 427
			Validity Status	Rev. No. B	

7.4.6 Acceptability Demonstration

Demonstration of acceptability	
Compliance with Legal Requirements, Laws and Standards	<p>Atmospheric emissions will be managed in accordance with relevant legislative requirements, including compliance with international maritime conventions and Australian legislation, specifically:</p> <ul style="list-style-type: none"> MARPOL 73/78: Annex VI: Regulations for the prevention of air pollution from ships Marine Order 97: Marine Pollution Prevention – Air Pollution relevant requirements of the National Pollutant Inventory National Environmental Protection Measure.
Policy Compliance	<p>The management of atmospheric emissions from the petroleum activities are aligned with Eni policies and standards. The residual risk is Low, which is acceptable.</p> <p>The EPO, CM and EPS that will be implemented are consistent with Eni internal requirements.</p>
Social Acceptability	<p>To date, no relevant person concerns have been raised regarding atmospheric emission impacts (refer Section 5).</p> <p>The Clean Energy Regulator advised that NGER requirements and potentially Safeguard Mechanism requirements need to be considered in the EP. Emissions reporting requirements are captured in Table 10-3.</p> <p>An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.</p>
Area Sensitivity/ Biodiversity	<p>Offshore location means winds will disperse and dilute emissions rapidly. The estimated volume of total CO₂ emissions (29,490t CO₂-e for all of the monitoring and decommissioning campaigns) is relatively low.</p> <p>No human settlements nearby.</p> <p>Atmospheric emissions have not been identified as a threat in any recovery plans or conservation advice for EPBC Act listed threatened and migratory species.</p>
ESD Principles	<p>The activity is consistent with the principles of ESD because:</p> <ul style="list-style-type: none"> the impacts associated with atmospheric emissions do not result in 'threats of serious or irreversible harm' as detailed within the EPBC Act and biodiversity and ecological integrity will be maintained there are no identified health, diversity or productivity impacts that may affect the biodiversity or ecological function for future generations.
ALARP	The residual risk has been demonstrated to be ALARP.

Potential impacts associated with atmospheric emissions are Slight (1) due to the relatively low total volume of emissions. The residual risk is considered Low, which is acceptable in accordance with Eni's acceptability criteria (Table 6-5). Potential impact associated with atmospheric emissions is considered acceptable and ALARP.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 240 / 427
				Validity Status	Rev. No.	
					B	

7.5 Noise Emissions

7.5.1 Summary of Environmental Risk Assessment

Hazard	Noise Emissions - Continuous		
	Frequency	Severity	Risk
Inherent Risk	B	1	L
Residual Risk	C	1	L

7.5.2 Description of Hazard

During the petroleum activities, continuous noise emissions will be generated from:

- Geophysical survey;
- MODU mobilisation and positioning;
- Cutting of the wellheads/casing;
- MODU operations;
- Vessel operations;
- Helicopter operations; and
- ROV operations.

7.5.2.1 Geophysical survey

Geophysical survey instrumentation specifically MBES, SSS, and sub-bottom profiling (SBP), are designed to characterise the seabed topography, bathymetry, potential geohazards, and other seafloor features using impulsive sound sources. Impulsive noise can be defined as a series of pulsed sound events that are brief, broadband, atonal and transient. The geophysical surveys will be undertaken using a multi-purpose survey vessel and are expected to last for approximately 20 days at each well location.

Impulsive sound sources generated by relevant geophysical survey equipment are detailed in Table 7-4.

MBES and SSS operate at high frequencies (10-900kHz) producing narrow sound beams primarily directed at the seabed (Seiche, 2020). This results in limited horizontal sound spread and rapid sound energy dissipation. The high frequency pulses of sound are produced in a highly directional and narrow beams, which rapidly attenuate outside of the beam (JASCO, 2013).

SBP use lower frequencies (2-16kHz) within the hearing range of most marine fauna. SBP also focuses sound energy towards the seabed, minimizing horizontal sound propagation. SBPs produce directional beams of sound towards the seabed and therefore sound propagation tends to be downwards in the water column with limited horizontal propagation.

Noise modelling studies conducted by McPherson and Wood (2017), Wood and McPherson (2019), prepared for the Beach Energy Geophysical and geotechnical seabed survey EP modelled impulsive noise sources of a geophysical surveys. Predictions for these studies found limited impulsive effect criteria to be reached within metres of an SBP sound source, including:

- Fish (swimbladder) mortality/potential mortal injury – 0.3m;

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 241 / 427
				Validity Status	Rev. No. B	

- Fish (swimbladder) recoverable injury – 0.1m;
- Fish (no swimbladder) mortality/potential mortal injury – 0.1m;
- Fish (no swimbladder) recoverable injury – 0.1m;
- Turtle mortality/potential mortal injury – 0.3m;
- Marine mammals behavioural – 2.0m;
- Low-frequency cetaceans TTS – 10m;
- Very-high frequency cetaceans PTS – 0.6m; and
- Very-high frequency cetaceans TTS – 1.2m.

It is noted that effect criteria for invertebrates and lobster were not reached. Consequently, no potential impact is expected for invertebrates and crustaceans from geophysical surveys.

Sound propagation from geophysical surveys is unlikely to exceed effect criteria range of two metres from the sound source. This distance is significantly lower than the range predicted for exceedance of effect criteria from vessel operations, where the maximum distance to effect criteria for vessel operations was predicted to be 11.8km (Table 7-9). It is expected that the underwater noise generated by geophysical surveys will be largely indistinguishable from background survey vessel noise at lower frequencies. Consequently, the noise produced by geophysical surveys will be considered as part of the noise generated by vessel operations (Section 7.5.2.5).

Table 7-4: Summary of noise emissions source levels of geophysical activities

Noise Source	Source levels	Literature source
MBES	SPL: 210-247dB re 1µPa @ 1m	(Seiche, 2020)
Side-Scan Sonar (SSS)	SPL: 200 – 234dB re 1µPa @ 1m	(Seiche, 2020)

7.5.2.2 MODU mobilisation and positioning

Long baseline or ultra-short baseline (USBL) transponder arrays may be installed on the seabed for metrology and MODU positioning. These arrays, consisting of transponders within a 1500-1800 metre radius of the wellheads, will emit short, intermittent acoustic pulses (impulsive sound). Transponder transmissions, typically between 21 and 31kHz, last 3 to 40 milliseconds and occur in bursts of up to six hours per well. For general positioning, a pulse is emitted every five seconds for approximately four hours, while precise positioning requires a pulse every second for about two hours.

Estimated sound pressure levels (SPL) from transponders are 180 to 206dB re 1µPa at 1 metre (Jimenez-Arranz et al., 2020).

Based on sound propagation study by Warner and McCrodan, (2011), transponder noise is unlikely to exceed the behavioural response criteria for cetaceans (160dB re 1µPa) beyond 42 metres. This distance is significantly smaller than range predicted for cetacean behavioural response from vessel operations. Such that the maximum distance to the continuous noise effect criteria was predicted by underwater sound modelling for MODU operations was 11.8km for behavioural response to marine mammals (Table 7-9).

It is expected that the underwater noise generated by transponder arrays will be largely indistinguishable from background survey vessel noise at lower frequencies. Consequently,

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 242 / 427
				Validity Status	Rev. No. B	

the noise produced by transponders for MODU mobilisation and positioning will be considered as part of the noise generated by MODU operations (Section 7.5.2.4).

7.5.2.3 Cutting of casing/wellhead

A casing cutting tool will be used to cut the well casing. The tool performs the cut inside the well and will take approximately 10 minutes. This is likely to be performed once for Petrel-3 and twice for Petrel-4 (see Section 3.3.7 for further details).

Removal of the wellhead will be performed by either internal or external cutting. For internal cutting, the process will take an estimated 10 to 14 hours per well and some continuous noise will be produced. If external cutting is employed, a diamond wire saw will generate greater underwater noise emissions, 161.4dB re 1µPa, (Koessler and McPherson, 2021) for approximately 36 hours per wellhead.

Pangerc et al., (2016) found that the continuous noise generated during diamond wire cutting of a 32-inch conductor in approximately 80 meters of water was largely indistinguishable from background vessel noise at lower frequencies. This finding aligns with acoustic modelling by JASCO (Koessler and McPherson, 2021) which showed minimal increase in noise levels when comparing a cutting operation to standard drilling activities. Consequently, the noise produced by wellhead cutting will be considered as part of noise generated by MODU operations (Section 7.5.2.4).

7.5.2.4 MODU Operations

The decommissioning campaign is currently maintaining the flexibility to use either a moored MODU, a DP-assisted moored MODU, a MODU on DP, or a jack-up MODU (see Section 3.5.1). Therefore, the MODU will generate continuous sound from onboard equipment vibrations (e.g., pumps, generators, and machinery) and from the thrusters if a MODU on DP or DP-assisted is considered. The decommissioning campaign using the MODU is expected to take up to 60 days (30 days per well) (see Section 3.1.3).

Review of sound source levels for each potential drill rig option found a MODU under DP is considered the noisiest scenario of all the options identified above (Austin et al., 2023; Austin et al., 2018; McPherson et al., 2021). The underwater sound measurements obtained for the West Aquarius semisubmersible whilst on DP identified within Austin et al., (2023) has been used for this assessment. The modelling report identified broadband frequency levels of 10Hz to 25kHz with a mean monopole source level of 183–187dB re 1µPa m for a MODU on DP.

7.5.2.5 Vessel Operations

Vessel operations generate continuous noise from propeller cavitation, thrusters, hydrodynamic flow around the hull, and the operations of machinery and equipment. In the event that a light well intervention vessel (LWIV) is considered for decommissioning options instead of MODU, it will generate continuous noise from the operation of on-board machinery, including diesel engines, cement pumping unit, ventilation fans (and associated exhaust), electrical generators, and from propeller cavitation and thrusters used to maintain position whilst under DP.

The vessel-based monitoring and pre-decommissioning campaigns have an expected duration of 14 to 40 days; with the decommissioning campaign using a potential LWIV is expected to take up to 60 days (30 days per well) (see Section 3.1.3). The vessel-based post-decommissioning survey has a duration of 2 days per well, this campaign has the potential to occur at the same time as the decommissioning campaign. For all the activities, there will be a maximum of three vessels within the Operational Area at any one time.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 243 / 427
			Validity Status	Rev. No.	
		B			

Vessels typically produce sound levels around 160-180dB re 1µPa at 1 m, generally dominated by low frequencies during transit and drop with reduced speed. The sound produced usually increases with increasing vessel size; varying from 160 to 175dB (re 1µPa) for small vessel (<50m), to 165 to 180dB (re 1µPa) for vessels in the 50 to 100m size class, and up to 190dB re 1µPa SPL for large ships (Gotz et al., 2009). Noise levels are the highest when vessels are holding position, with the use of thrusters to maintain position (under DP). A vessel using DP produces noise of low frequency, less than 1kHz, with broadband values from 177dB re 1µPa at 1m (Simmonds et al., 2004). More recently, Welch et al., (2023), modelled underwater sound levels from a support vessel as 173.0dB re 1µPa whilst slowly transiting, up to 190.0dB re 1µPa whilst under DP. Similar noise levels are expected to be generated by the vessels used for the decommissioning activity.

Whilst there are no direct studies or data for underwater noise relating to a LWIV operating on DP, the LWIV is considered likely to have similar DP thruster power to a MODU (see Section 7.5.2.4).

7.5.2.6 Helicopter operations

The presence of the helicopter and its associated sound field will be highly transient during take-off and landing on the MODU. On approach to the drill rig the helicopter will descend to the helideck where there is greatest potential to ensonify the water column with continuous sound. Sound pressure will be greatest at the sea surface and rapidly diminish with increasing depth. Helicopters will be used for crew changes during the decommissioning campaign with flights potentially occurring up to once per day during this time. Helicopters will only be required for the abandonment campaign, therefore, for a maximum of 60 days.

Helicopter engine sound is emitted at a range of frequencies generally, below 500Hz (Richardson et al., 1995). Richardson et al., (1995) reported helicopter sound (for Bell 214 type) being audible in air for four minutes before it passed over receivers, but only detectable underwater for 38 seconds at 3m depth and for 11 seconds at 18m depth for the same flight path. Thus, the predicted extent of impact is between 3 to 18m for a period of 11 – 38 seconds twice a day (landing and take-off). It is expected that the upper water column ensonified by helicopter operations will be largely indistinguishable from background MODU noise at lower frequencies. Consequently, the noise produced by helicopter operations will be considered as part of noise generated by MODU and vessel operations.

7.5.2.7 ROV operations

ROV operations will be undertaken during the petroleum activities, notably cleaning of the wellhead and during support operations and in the event of dropped objects. The ROV will be deployed from the MODU or LWIV, and the continuous noise generated will typically be of considerably lower intensity than the DP vessel noise. It is expected that the underwater noise generated by ROV operations will be largely indistinguishable from background MODU or LWIV noise at lower frequencies. Consequently, the noise produced by ROV operations will be considered as part of noise generated by MODU and vessel operations.

Table 7-5 provides a summary of the continuous sound sources relevant to this activity and the relevant literature sources for each.

Table 7-5: Summary of noise emissions source levels from decommissioning activities

Noise Source	Source levels	Literature source
Sub-Bottom Profiler (SBP)	SPL: 191.7dB re 1µPa @ 1m Per-pulse SEL: 171.4dB re 1µPa2-s	(Martin et al., 2012)

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 244 / 427
				Validity Status	Rev. No. B	

Cutting operations	Broadband SPL: 161.4dB re 1µPa	(Koessler and McPherson, 2021)
MODU under DP	183–187dB re 1µPa m	(Austin et al., 2023)
LWIV under DP	183–187dB re 1µPa m	N/A
Support Vessel under DP	Broadband SPL: 190.0dB re 1µPa	(Welch et al., 2023)
Support Vessel in slow transit	Broadband SPL: 173.0dB re 1µPa	(Welch et al., 2023)
Helicopter	SPL: 162dB re 1µPa m	(Richardson et al., 1995)

Broadband SPL calculated over 10 Hz to 25 kHz range.

7.5.2.8 Noise Criteria Thresholds

This assessment focuses solely on continuous noise criteria thresholds. This approach is based on the description of hazards which identified that continuous noise sources generate the largest areas of underwater noise exposure.

Different species groups perceive and respond to sound differently, and so a variety of exposure criteria for the different types of impacts and species groups are considered. The following noise effect thresholds used in the impact and risk assessment are based on current best available science, such as:

- Frequency-weighted accumulated sound exposure levels (SEL24h) from the NOAA Technical Guidance (NMFS, 2018) and Southall et al., (2019) for the onset of PTS and TTS in marine mammals;
- Un-weighted SPL for behavioural threshold for marine mammals based on NOAA, (2019);
- Frequency-weighted accumulated sound exposure levels (SEL24h) from Finneran et al., (2017) for the onset of PTS and TTS in marine turtles;
- Sound exposure guidelines for fish, fish eggs, and larvae (Popper et al., 2014);
- Current available literature on the sound exposure impacts to marine invertebrates for continuous noise is limited. Information is only available to define threshold levels for assessment for impulsive sources. Consequently, impacts to invertebrates have not been discussed further in this section; and
- There are no thresholds for underwater sound impacts to birds.

Recent Commonwealth guidance has defined “injury to blue whales” as both PTS and TTS hearing impairment, as well as any other form of physical harm arising from anthropogenic sources of underwater sound (DAWE, 2021).

Numerous studies on marine mammal behavioural responses to sound exposure have not resulted in consensus in the scientific community regarding the appropriate metric for assessing behavioural reactions (Koessler and McPherson, 2021). The NOAA, (2019) behavioural threshold for marine mammals of a SPL at 120dB re 1µPa is likely to represent a highly conservative threshold in relation to behavioural disturbance resulting in displacement. This is based on Southall et al., (2007) reviewing extensive literature and studies in relation to marine mammal behavioural response to both impulsive continuous sound emissions and finding that most marine mammals exhibited varying responses between 140 and 180dB re 1µPa.

The Southall et al. (2021) paper on behavioural response criteria does not provide new numerical thresholds for onset of behavioural responses for marine mammals, and thus has

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 245 / 427
				Validity Status	Rev. No.	
					B	

not been applied in this assessment. This paper does provide significant context and guidance for future work to better determine such thresholds.

Table 7-6 to Table 7-8 provide a summary of the continuous noise criteria thresholds identified within the relevant literature that has been used for the assessment of fish, marine turtles, and marine mammals, respectively.

Table 7-6: Continuous noise: criteria for noise exposure for fish

Receptor	Behaviour	Mortality and Potential mortal injury	Impairment		
			Recoverable injury	TTS	Masking
Fish: No swim bladder (particle motion detection)	(N) Moderate (I) Moderate (F) Low	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate
Fish: Swim bladder not involved in hearing (particle motion detection)	(N) Moderate (I) Moderate (F) Low	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate
Fish: Swim bladder involved in hearing (primarily pressure detection)	(N) High (I) Moderate (F) Low	(N) Low (I) Low (F) Low	170 dB SPL for 48 h	158 dB SPL for 12 h	(N) High (I) High (F) High
Fish eggs and fish larvae	(N) Moderate (I) Moderate (F) Low	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) High (I) Moderate (F) Low

Source: Popper *et al.*, 2014.

Relative risk (high, moderate, low) is given for animals at three distances from the source defined in relative terms as near (N), intermediate (I), and far (F).

Table 7-7: Continuous noise: criteria for noise exposure for marine turtles

Receptor	Masking	Behaviour	PTS	TTS
			Weighted SEL _{24h} (LE _{7,24h} ; dB re 1µPa ² ·s)	
Marine turtle	(N) High (I) High (F) Moderate	(N) High (I) Moderate (F) Low	220	200

Note: Relative risk (high, moderate, low) is given for animals at three distances from the source defined in relative terms as near (N) – tens of meters, intermediate (I) - hundreds of meters, and far (F) – thousands of meters.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 246 / 427
				Validity Status	Rev. No. B	

Source: Popper et al., 2014; Finneran et al. 2017.

Table 7-8: Continuous noise: criteria for noise exposure for mammal mammals

Hearing group	Behavioural	PTS	TTS
	SPL (Lp; dB re 1µPa)	Weighted SEL24h (LE,24h; dB re 1µPa ² ·s)	
Low-frequency (LF) cetaceans	120	199	179
Mid-frequency (MF) cetaceans		198	178
High-frequency (HF) cetaceans		173	153
Very High-frequency (VHF) cetaceans		219	199

Source: NMFS, (2018); Southall et al., (2019).

Lp denotes sound pressure level period and has a reference value of 1 µPa.

LE denotes cumulative sound exposure over a 24 h period and has a reference value of 1 µPa²·s.

7.5.2.9 Modelling

The use of DP systems for maintaining a stationary vessel during certain activities was identified as likely to be the noisiest activity associated with the decommissioning activity. The activity of MODU mobilisation and positioning identified the requirement of up to potentially three support vessels under DP, whilst manoeuvring the MODU, on idle, into position.

The noise assessment approach taken was to contrast the noise associated with the decommissioning campaign to relevant existing information as site-specific modelling was not conducted. The approach utilised a conservative approach, primarily using available literature and relevant modelling. Table 7-5 summarises the sound sources relevant to the planned petroleum activity and the associated sound frequencies, levels and literature references.

An assessment conducted by Welch et al., (2023) prepared for the ConocoPhillips Otway Drilling Program modelled a scenario for the positioning of the MODU for the drilling campaign; with three vessels under DP in the presence of the MODU on idle. The modelling results for this scenario presented in Welch et al., (2023) have been used for the assessment below as they represent the scenario anticipated to produce the highest levels of continuous noise emissions for the petroleum activities for this EP.

While acknowledging the distinct characteristics of the Otway and Bonaparte basins, employing underwater sound modelling from the ConocoPhillips Otway Drilling Program can provide valuable insights. The fundamental principles of sound propagation in marine environments are consistent across regions, and the Otway Basin, with its established modelling framework for multiple vessel operations, offers a conservative foundation for initial predictions which considers high sound source levels representative of this activity and multiple vessels operating at the same time.

See Section 7.5.2.8 for further details on the applicable noise criteria thresholds that have been used for the assessment below.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 247 / 427
				Validity Status	Rev. No.	
					B	

The maximum effect distances of the behavioural disturbance to marine mammals and fish, and to PTS and TTS thresholds for marine mammals and turtles are presented in Table 7-9 from the representative modelled MODU mooring scenario from Welch et al., (2023).

Table 7-9: Maximum distance (km) from the continuous sound source to each the noise effect criteria during mooring (source: Welch et al., 2023)

Hearing Group	Threshold	Behavioural	Impairment			Injury	
			Masking	TTS	Recoverable injury	PTS	Mortality or potential mortal injuries
<i>SPL (Lp; dB re 1µPa)</i>		<i>km</i>					
Fish (no swim bladder)	170	N/A	N/A	N/A	0.02	N/A	N/A
Fish (swim bladder involved in hearing)	158	N/A	N/A	0.13	N/A	N/A	N/A
LF cetaceans	120	11.8	N/A	N/A	N/A	N/A	N/A
<i>SEL24h threshold (LE,24h; dB re 1µPa²·s)</i>		<i>km</i>					
LF cetaceans	199	N/A	N/A	3.11	N/A	0.29	N/A
HF cetaceans	198	N/A	N/A	0.09	N/A	-	N/A
VHF cetaceans	173	N/A	N/A	1.43	N/A	0.12	N/A
Otariid Seals	219	N/A	N/A	0.08	N/A	-	N/A
Marine Turtles	220	N/A	N/A	0.22	N/A	-	N/A

Note: A dash indicates the level was not reached within the limits of the modelled resolution.

7.5.3 Potential Environmental Impact

Continuous noise emissions have the potential to result in:

- Change in fauna behaviour; and
- Auditory impairment [masking, recoverable injury, Temporary Threshold Shift (TTS)] or auditory injuries [mortality or potential mortal injuries, Permanent Threshold Shift (PTS)] to marine fauna.

Potential receptors that may be impacted are:

- Fish;
- Marine reptiles; and
- Marine mammals.

Studies have identified marine mammals, fish and sharks and marine reptiles to be susceptible to behavioural change from vessel noise, with documented observations of behavioural and acoustic responses, auditory masking, and avoidance (Erbe et al., 2019, Chapius et al., 2019, Popper et al., 2014).

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 248 / 427
				Validity Status	Rev. No. B	

Auditory impairment may be in the form of a temporary threshold shift (TTS) from which an animal recovers within minutes or hours, or a permanent threshold shift (PTS) from which the animal does not recover. Marine fauna exposed to continuous underwater sound generated by the petroleum activities are not expected to experience auditory impairment or loss of hearing sensitivity, either temporarily or permanently.

The onset of auditory impairment, TTS and PTS to marine mammals, fish and sharks and marine reptiles requires either chronic exposure (over 24 hours) or sudden intense sound exposure (Southall et al., 2019, Popper et al., 2014).

7.5.3.1 Fish

Fish and sharks in the Operational Area and surrounds are expected to be transient individuals, based on the absence of BIAs and critical habitat (see Section 4.4.6).

Change in behaviour

Behavioural impacts to fish, including and sharks, from the petroleum activities, such as avoidance behaviour of continuous sound sources, may potentially occur (Popper et al., 2014). However, all of the EPBC listed fish species identified to potentially occur in the area (Table 4-5, Appendix B: Environmental Values and Sensitivities), are highly mobile species, and therefore are expected to be transitory in nature. Mobile species are expected to actively move away from the sound source. Based on the absence of suitable habitat for site-attached fish, only transient individuals are expected to be within the Operational Area and subject to temporary behavioural changes close to the source of continuous noise emissions. Potential localised and temporary behavioural changes to individual fish in the Operational Area is not expected to impact fish populations.

Auditory impairment to marine fauna

Fish were modelled to reach the criteria for 48-hour recoverable injury within 20m, and the criteria for 12-hour TTS within 130m of the MODU mooring scenario for the petroleum activity (see Table 7-9). No habitats likely to support site-attached fish have been identified within the Operational Areas. Therefore, it is unlikely that fish species would be present within 20m for a period of 48 hours, or 80m for 12 hours whilst MODU positioning is occurring. Given the transient nature of fish and their ability to move away from noise sources, the potential of individuals experiencing TTS due to continuous underwater noise within the Operational Area is not considered credible.

7.5.3.2 Marine reptiles

The Operational Area overlaps BIAs for four species of marine reptiles that are sensitive to changes in underwater noise emissions as identified by the EPBC Act Protected Matters Search:

- Green turtle – foraging;
- Olive Ridley turtle – foraging;
- Flatback turtle – foraging and internesting; and
- Loggerhead turtle – foraging.

The only species which has habitat critical to the survival of the species identified within the EMBA was the flatback turtle (see Section 4.4.8.1 for further details).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 249 / 427
			Validity Status	Rev. No. B	

Importantly, no marine turtles were sighted during two last marine surveys in 2022 and 2023 in the Operational Area.

Change in Behaviour

The Recovery Plan for Marine Turtles in Australia (DEE, 2017) highlights noise interference from anthropogenic activities as a threat to marine turtles. The plan refers to vessel noise as a source of chronic (continuous) noise in the marine environment, of which exposure may lead to avoidance of important turtle habitat. Specific data on behavioural response thresholds, such as avoidance or masking, of marine turtles to sound emissions does not exist (Popper et al., 2014).

Marine turtles have been shown to respond to low frequency sound, indicating they have the highest hearing sensitivity in the frequency range 100 to 700Hz (Bartol and Musick, 2003). Marine turtles use sounds for navigation, to avoid predators and to find prey (Dow Piniack, 2012). The Operational Area overlaps a small portion of the foraging BIAs in water depths of 95m (MSL). Olive Ridley and green turtles in the Joseph Bonaparte Gulf are known to forage in depths less than 14m (Galaiduk et al., 2018). The Operational Area is in water depths outside of Olive Ridley and green turtle foraging depths. Loggerhead and flatback turtles are known to feed in reef habitats and around the pinnacles on the mid-shelf of the gulf (Galaiduk et al., 2018). The Pinnacles of the Bonaparte Basin are located ~30km from the Operational Area. The Operational Area does not contain reef or pinnacle habitats suitable for loggerhead, or flatback turtles foraging.

Based on the absence of suitable foraging habitat for marine turtles, only transient individuals are expected to be within the Operational Area and subject to temporary behavioural changes close to the source of continuous noise emissions. Potential localised and temporary behavioural changes to individual marine turtles in the Operational Area is not expected to impact turtle populations (DEE, 2017).

Auditory impairment to marine fauna

The 24-hr TTS criteria was not reached for the MODU positioning scenario modelled. Thus, PTS impacts are not predicted. The 24-hr TTS criteria was reached within 220m of MODU positioning and mooring operations. These activities are expected to take approximately 24-36 hours; therefore, it is possible for TTS impacts to occur. However, it is unlikely that individual marine turtles will remain within 220m for 24 hours whilst MODU positioning activities are occurring. Given the transient nature of marine reptiles and their ability to move away from noise sources, the potential of individuals experiencing TTS due to continuous underwater noise within the Operational Area is not considered credible.

7.5.3.3 Marine mammals

Marine mammals that may occur within the vicinity of the petroleum activities include low frequency (such as baleen whales), high frequency (odontocetes such as orca), and very high frequency (such as dolphins) cetaceans and sirenians (dugongs) (Appendix B: Environmental Values and Sensitivities). Marine mammals in the Operational Area and surrounds are expected to be transient individuals based on the absence of BIAs and critical habitat.

Change in behaviour

Continuous sound levels greater than 120dB re 1µPa (SPL) is currently accepted as the behavioural threshold for marine mammals including otariid seals, low-frequency cetaceans, high-frequency cetaceans and very high-frequency cetaceans (NOAA, 2019). The maximum distance to the behavioural response threshold for marine mammals predicted by the

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 250 / 427
				Validity Status	Rev. No. B	

underwater sound modelling was 11.8km (Table 7-9). Underwater sound generated by the petroleum activities has the potential to cause a wide range of behavioural changes to transient marine mammal individuals including area avoidance, increase or decrease in vocalisations, dive duration, travel speed and number of breaches (Erbe et al., 2019). Vessel noise has also been shown to reduce foraging efficiency for specific species, such as sperm whales (Erbe et al., 2019).

Auditory masking impacts may occur when there is a reduction in audibility for one sound (signal) caused by the presence of another sound (noise). For this to occur the noise must be loud enough and have a similar frequency to the signal and both signal and noise must occur at the same time. Therefore, the closer the marine mammal is to the sound source, and the more overlap there is with their vocalisation frequencies, the higher the probability of masking. The potential for masking and communication impacts is therefore more likely to occur near the source (tens of meters), with decreasing impacts, further from the source (Clark et al., 2009). Given the short duration (i.e., approximately 60 days for decommissioning), and localised extent of potential behavioural changes (e.g., a maximum distance of ~11.8km during MODU positioning), the lack of BIAs or habitat critical to the survival of the species, the consequence has been evaluated to potentially result in localised short-term impacts to individuals of conservation value, however not affecting local ecosystem function or impact populations.

Auditory impairment to marine fauna

Marine mammals that may occur within the Operational Area are outlined in Section 4.4.7. There are no known aggregation, resting, breeding or feeding BIAs identified for marine mammals in proximity to the Operational Area.

Literature provides weighted sound exposure levels (SELs) as the primary metric for assessing auditory impairment in marine mammals (Table 7-8). SEL integrates noise exposure over time, and a 24-hour period is used to estimate this value for TTS and PTS. Given the transient nature of marine mammals and their ability to move away from noise sources, the potential of individuals experiencing TTS or PTS due to continuous underwater noise within the Operational Area is not considered credible.

7.5.3.4 Residual risk summary

The worst-case residual severity to marine fauna from continuous noise emissions is evaluated as Slight (1), given the temporary, localised nature of the disturbance, and the lack of known aggregation, resting, breeding or feeding areas for marine fauna within the area exposed to continuous noise emissions.

The likelihood of a change in behaviour from continuous noise emissions occurring as a result of the activities is considered Credible (C) given:

- Mobile species, such as fish, marine turtles, and marine mammals are expected to actively move away from the sound source;
- The absence of suitable foraging habitat for marine turtles indicating that any potential behavioural changes to individual marine turtles found within the Operational Area are not expected to impact marine turtle populations; and
- Auditory masking impacts to marine mammals may occur, however, due to the short duration, and the lack of BIAs or habitat critical to the survival of the species, the consequence has been evaluated to potentially result in localised short-term impacts to species of conservation value, however not affecting local ecosystem function or impacting populations.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 251 / 427
			Validity Status	Rev. No.	
	B				

Auditory impairment from noise emissions is not considered credible given that marine fauna are expected to actively avoid the sound source, preventing prolonged exposure for the onset of auditory impairment or injury to occur.

Therefore, the residual risk of noise emissions due to the petroleum activities is considered Low.

7.5.4 Environmental Performance Outcomes and Control Measures

EPOs relating to this risk include:

- No injury or mortality to EPBC Act listed fauna during operational activities (EPO-05).

CMs relating to this risk include:

- Eni E&P Marine Manual (Marine assurance standard) (CM-13);
- Planned Maintenance System (PMS) (CM-14); and
- Regulations and measures for interacting with fauna (CM-15).

EPSs and MC relating to the above are presented in Section 9.1.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 252 / 427
				Validity Status	Rev. No. B	

7.5.5 As Low as Reasonably Practicable Demonstration

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
Eliminate	Eliminating the helicopters, vessels and MODU use	The noise associated with the use of helicopters, vessels and MODU/LWIV cannot be eliminated. Elimination of helicopters, vessels and MODU would mean the activities cannot be completed.	✘
Substitute	Substitute vessels	The vessels will be contracted to meet the specifications of the scheduled work and cannot be substituted. They are required to support the MODU operations.	N/A
Engineering	N/A	N/A	N/A
Isolation	N/A	N/A	N/A
Administrative	PMS	Ensures equipment which generates noise on the MODU and vessels is operating optimally and sound sources levels are appropriately verified and within desired operating range. PMS is routine and there are no additional costs.	✓ (CM-14)
	Regulations and measures for interacting with marine fauna (e.g., EPBC Regulations 8 (Part 8))	Minor cost in complying. Reduces risk of physical and behavioural impacts to marine fauna. EPBC Regulations include restrictions such as vessel speed and direction when in proximity to marine fauna and are based on legislated requirements.	✓ (CM-15)
	Scheduling activity outside of sensitive period for marine fauna	The timing of the petroleum activities will be subject to vessel and MODU availability and weather conditions. Given the low risk to marine fauna in the region, rescheduling the activity will not result in significant environmental benefit.	✘
	Dedicated marine fauna observer on vessels to spot marine fauna	May improve ability to spot and identify marine fauna at risk of impact from noise. However, the high cost of contracting marine fauna observers is grossly disproportionate to the low risk (refer to 7.5.3.3) of vessel and MODU noise sources on marine fauna.	✘

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 253 / 427
			Validity Status	Rev. No. B	

7.5.6 Acceptability Demonstration

Demonstration of acceptability	
Compliance with Legal Requirements, Laws, and Standards	<p>Noise from the petroleum activities is managed in accordance with relevant legislative requirements, including:</p> <ul style="list-style-type: none"> Vessels will comply with EPBC Regulations 2000 – Part 8 Division 8.1 (Interacting with cetaceans). Helicopters will comply with EPBC Regulations 2000 – Part 8 Division 8.3 (Regulation 8.07).
Policy Compliance	<p>The management of physical presence of the petroleum activities are aligned with Eni policies and standards. The residual risk is Low, which is acceptable.</p> <p>The EPOs, CMs and EPSs that will be implemented are consistent with Eni internal requirements.</p>
Social Acceptability	<p>To date, no relevant person concerns have been raised regarding noise impacts (refer Section 5).</p> <p>An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.</p>
Area Sensitivity/ Biodiversity	<p>The Operational Area does not intersect with any State or Territory marine protected areas, AMPs, wetlands of international or national importance, World, National or Commonwealth heritage properties or places, or KEFs.</p> <p>The Operational Area does not contain any BIAs for marine mammal species. The Operational Area overlaps foraging BIAs for green turtles and Olive Ridley turtles.</p> <p>Eni has considered information contained in relevant Recovery plans and approved conservation advice that identify noise emissions as a threat (as listed in Table 2-3). This includes:</p> <p>Conservation Advice</p> <ul style="list-style-type: none"> Conservation Advice for <i>Balaenoptera borealis</i> (Sei Whale) (TSSC, 2015) Conservation Advice for <i>Balaenoptera physalus</i> (Fin Whale) (TSSC, 2015a) <p>Recovery/Management Plans</p> <p>The petroleum activity is consistent with the objectives and actions of the plans identified below through adoption of EPO-04 and the control measures outlined in Section 7.5.4:</p> <ul style="list-style-type: none"> Recovery Plan for Marine Turtles in Australia (DEE, 2017) identifies noise interference as a threat to marine turtles. There are no explicit relevant management actions. The long-term recovery objective of minimising anthropogenic threats will be managed through the adoption of the EPO. Conservation Management Plan for the Blue Whale 2015–2025 (DoE, 2015) identifies noise interference as a threat to blue whales. Action Area A.2 from the plan: assessing and addressing anthropogenic noise, will be managed through the adoption of the EPO and CMs. <p>Recovery Plans/ Conservation Advice for other EPBC Act listed threatened and migratory species that may occur in the Operational Area do not identify noise emissions as a key threat or have explicit relevant objectives or management actions related to noise emissions.</p> <p>The control measures outlined in Section 7.5.4 are consistent with the objectives and actions in these publications. The petroleum activities are</p>

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 254 / 427
				Validity Status	Rev. No. B	

Demonstration of acceptability	
	not inconsistent with the objectives and actions in the relevant recovery plans/conservation advice.
ESD Principles	<p>The activity is consistent with the principles of ESD because:</p> <ul style="list-style-type: none"> the impacts associated with noise emissions do not result in 'threats of serious or irreversible harm' as detailed within the EPBC Act and biodiversity and ecological integrity will be maintained conservative assumptions have been applied to the impact assessment there are no identified health, diversity or productivity impacts that may affect the biodiversity or ecological function for future generations.
ALARP	The residual risk has been demonstrated to be ALARP.

Given the relatively short duration of the petroleum activities, and sensitivity of marine fauna to the vessels and MODU noise emissions, potential impacts are Slight (1). Controls have been evaluated above and adopted in accordance with the ALARP criteria (Section 6.3). The residual risk is considered Low, which is acceptable in accordance with Eni's acceptability criteria (Table 6-5). Potential impacts are therefore acceptable and ALARP.

7.6 Light Emissions

7.6.1 Summary of Environmental Risk Assessment

Hazard	Light Emissions		
	Frequency	Severity	Risk
Inherent Risk	A	1	L
Residual Risk	A	1	L

7.6.2 Description of Hazard

Lighting is used to allow safe operations during night hours, as well as to communicate the presence of support vessels to other marine users (i.e. navigation lights). Lighting is required for safe operation and cannot be reasonably eliminated.

During the petroleum activities, light emissions will be generated from support operations including:

- MODU operations; and
- Vessel operations.

7.6.2.1 MODU and Vessel Operations

Lights on the MODU and vessels will be required on a 24-hour basis during the activities for safety and navigational purposes, in accordance with requirements of the *Navigation Act 2012* (Marine Order Part 30 – Prevention of collisions). External lighting on the MODU and vessels is located on the decks, with most external lighting directed towards working areas. However, the external lights on the MODU and vessels will generate light glow and direct illumination of surrounding surface waters.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 255 / 427
				Validity Status	Rev. No. B	

The distance at which direct light and sky glow may be visible from sources within the Operational Area depend on the characteristics of the lighting and environmental conditions.

Vessel-based campaigns have an expected duration of 14 to 40 days; and the decommissioning campaign using the MODU has an expected duration of up to 60 days (30 days per well).

7.6.3 Potential Environmental Impact

Artificial light can be received by the environment in three ways, being:

- Directly visible light;
- Skyglow, the diffuse scattering of light in the atmosphere above the horizon; and
- Light spill, the trespass of light outside the area intended, such as the sea surface.

Potential receptors that may be impacted by light emissions are:

- Seabirds; and
- Marine reptiles.

The characteristics of light emissions associated with sources from petroleum will differ depending upon the number, intensity, spectral output, and type of light.

To inform the impact assessment, Eni is able to draw upon artificial light modelling it has previously commissioned for vessel activities in Australia (Pendoley Environmental, 2022). While this modelling is for a large construction vessel (pipelay vessel), it does provide a useful conservative proxy for light emissions from the MODU and support vessels. In particular as the Petrel-3 and Petrel-4 decommissioning activities do not require any flaring.

The modelling study (Pendoley Environmental, 2022) applied the ILLUMINA model (Aube et al., 2005), which represents light across large areas and distances and across the entire visible spectrum and generates quantitative outputs relevant to the assessment of the impacts of light on wildlife and the night sky.

In the absence of published or generally accepted impact thresholds for evaluating the impact of artificial light on sensitive receptors, an approach based on presenting the light modelling outputs to the visibility of the full moon was used in the modelling.

As the full moon is the brightest natural light source visible within the region of the horizon, presenting modelling outputs as a proportion of full moon equivalent (FME) gives the model outputs some biological relevance for informing impact assessments for marine turtles. Impacts are assessed on a scale of the FME, with different FME ranges assigned an impact level and impact potential criteria that have been developed based on expert opinion (refer Table 7-10). Although the potential effects of artificial light on other marine fauna, such as seabirds or migratory shorebirds, is gaining more recognition, the vulnerability of individuals to negative impacts is highly species specific and can vary depending on the life stage or behaviour being undertaken at the time (DCCEEW, 2023). Accordingly, while presenting radiance as a measure relative to that of a full moon is biologically relevant to other marine taxa, potential impact criteria could not be defined (Pendoley Environmental, 2022).

Furthermore, the sensitivity of a hatchling turtle to directional light can be described by a specific 'cone of acceptance', which indicates a hatchling's field of view. This is defined by Lohmann et al. (1997) as 180° horizontally and 30° vertically. To understand potential

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 256 / 427
				Validity Status	Rev. No. B	

impacts of modelled light emissions on hatchling behaviour, radiance was averaged over the brightest light source with this field of view (orientation field of view) and converted to FME.

The exposure area for light emissions is based on the extent of visible light that has been estimated to occur from the vessel associated with the activity. The visibility of an artificial light does not necessarily imply a measurable change in ambient light (or any subsequent potential impact). The light assessment boundary of 20km from the source will be used as the extent of light exposure, in accordance with National Light Pollution Guidelines for Wildlife (DCCEEW, 2023). Localised light glow may act as an attractant to light-sensitive species.

Table 7-10: Artificial light impact potential for marine turtles (Pendoley Environmental, 2022)

Impact level	FME ranges*	Impact potential criteria for marine turtles
4	10 to 100	Light or light glow visible and impact likely. Represents a very bright light, equivalence of up to 100 times the radiance of one moon. This light radiance will greatly override the moderating influence of the ambient full moon at the time of exposure.
3	1 to 10	Light or light glow visible and impact likely. Represents a bright light, equivalence of up to ten times the radiance of one moon. This light radiance will override the moderating influence of the ambient full moon at the time of exposure.
2	0.1 to 1	Light or light glow visible and behavioural impact possible, depending on ambient moon phase at the time of exposure, which will influence the visibility of the artificial light sources, equivalent to the light output. Artificial lights will be more visible to marine turtles under a first quarter moon than under a full moon.
1	0.01 to 0.1	Light or light glow visible but behavioural impact unlikely; as in, not biologically relevant. Equivalent to the light output from the first quarter moon to new moon.
NA	<0.01	Light or light glow is considered ambient and no impact expected. Equivalent to the light output from a new moon.

* Proportion of radiance of a full moon within orientation field of view, where 100 equals the radiance of one hundred full moons and 0.01 equals 100th the radiance of one full moon.

The distances at which the orientation field of view FME value is predicted to fall below 0.01 (ambient levels) is 16.2km. Light is expected to be visible, but behavioural impacts to marine turtles unlikely, at distances beyond 5.2km. Behavioural impacts to marine turtles are possible within 1.7km of the source (Table 7-11) (Pendoley Environmental, 2022).

Table 7-11: Summary of available artificial light modelling results for a pipelay vessel

Impact level	FME	Distance (m)
4	10 to 100	<540
3	1 to 10	540
2	0.1 to 1	1680
1	0.01 to 0.1	5210
NA	<0.01	>16,150

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 257 / 427
				Validity Status	Rev. No. B	

As a conservative measure, impacts to light-sensitive species have been considered by reviewing the National Light Pollution Guidelines for Wildlife (DCCEEW, 2023), which recommends applying a 20km buffer around the light source. A 20km buffer provides a precautionary limit based on observed effects of sky glow on marine turtle hatchlings, demonstrated to occur at 15 to 18km, and fledgling seabirds grounded in response to artificial light 15km away (DCCEEW 2023). The exact details of the MODU, and support vessels are unknown for the petroleum activities. Given this uncertainty, it is assumed light could be visible on the horizon at distances up to approximately 20km during vessel use, based on review of the National Light Pollution Guidelines for Wildlife (DCCEEW, 2023).

7.6.3.1 Seabirds

Change in fauna behaviour

No BIAs for seabirds occur within the Operational Area. The nearest breeding BIAs for the lesser crested tern and lesser frigatebird are 197km and 164km south-west of the Operational Area, respectively (Table 4-6).

Artificial light can have a variety of effects on seabirds, depending upon the species and the life stage or behaviours being undertaken at the time. Negative responses of birds to artificial light may include collision, entrapment, stranding, grounding, disorientation, or interference with navigation – being drawn off course from their usual migration route – potentially resulting in reduced fitness, in injury or death (DCCEEW, 2023).

Species with a nocturnal component of their life history, such as procellariiforms (shearwaters, petrels and storm petrels), are at greater risk of negative impacts. The most significant impacts recorded, in terms of numbers of individuals impacted, have been associated with the synchronised mass exodus of procellariiform fledglings from nesting sites at night (Deppe et al., 2017; Raine et al., 2007; Rodriguez et al., 2015a; Rodriguez et al., 2015b; Le Corre et al., 2002; Reed et al., 1985).

No important nesting sites for procellariiform species are located within 500km of the Operational Area; therefore, impacts to breeding adults or fledgling procellariiforms are not expected.

Nocturnal foraging at sea is known to occur across the procellariiform order, with preferences for bioluminescent prey (Imber, 1975). This is likely linked to the vertical migration of prey in the water column; the greater abundance of prey closer to the sea surface under darkness enables more efficient foraging by birds compared to during daylight. While no foraging BIAs for procellariiforms overlap with or occur within 500km of the Operational Area, nocturnal seabirds, such as the streaked shearwater, may traverse the area and forage in low numbers.

Reports of procellariiforms being attracted to vessels and oil and gas facilities exist (Black, 2005; Merkel & Johansen, 2011; Montevecchi, 2006); however, interaction events are usually associated with weather conditions providing poor visibility. These conditions are not common within the region, suggesting any interaction between procellariiforms and the MODU or vessels would be limited to individuals rather than populations.

Diurnal seabird species, such as terns, noddies, frigatebirds and tropicbirds, in contrast to procellariiforms, are less vulnerable to impacts of artificial light, given the absence of nocturnal behaviours. However, the presence of facilities can alter foraging behaviours, potentially in response to aggregation of increased prey density around platforms – as described for fish above – or due to light sources artificially extending day length and foraging activities. Although such attraction increases the risk of collision with facilities, incidents of collision of these species, or similar taxonomic groups, are few (Ronconi et al., 2015).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 258 / 427
			Validity Status	Rev. No. B	

7.6.3.2 Marine reptiles

Change to marine fauna behaviour

Wavelength particularly has been shown to significantly affect the vulnerability of individuals to artificial light. In general, artificial light rich in short wavelength blue and green light are most disruptive (Fritsches, 2012; Pendoley, 2005; Witherington, 1991). Although longer wavelengths of light are less attractive than shorter wavelengths, long wavelength light can still disrupt sea-finding of hatchlings (Robertson et al., 2016; Pendoley, 2005; Pendoley & Kamrowski, 2015), and if bright enough, can elicit a similar response to shorter wavelength light (Mrosovsky, 1972; Mrosovsky & Shettleworth, 1968; Pendoley & Kamrowski, 2015; Cruz et al., 2018).

The Operational Area overlaps a foraging BIA for the green turtle and Olive Ridley turtle. The ZPI and EMBA overlap a foraging BIA for the loggerhead turtle and foraging, interesting and interesting buffer BIAs for the flatback turtle (Section 4.4.4). The EMBA also intersects nesting habitat critical to the survival of the flatback turtle at Brace Point to One Tree Point in the Northern Territory. However, the Operational Area is located more than 200 km from the shoreline of these locations (Section 4.4.4.1).

The behavioural response of marine turtles to artificial light depends upon the life stage or behaviours being undertaken at the time and the characteristics of the light sources themselves. The main implication of artificial lighting for marine turtles is the disruption of hatchling sea-finding behaviour.

Turtles transiting or foraging in the surroundings of the Operational Area may be disturbed by the lights from the vessel, however, given the large distances typically covered by foraging individuals, lighting from the support vessels should not impact foraging behaviour. Light cues are not thought to guide migration and no evidence to date suggests artificial light disrupts migration or leads to disorientation in adult marine turtles. Foraging adult turtles have been observed feeding on prey presumed to be attracted by lights of oil production platforms in the Gulf of Mexico (Kebodeaux, 1994). However, illumination of fishing gear has been implemented as a measure to reduce by-catch, as the light sources allow individuals to avoid the net (Ortiz et al., 2016). This suggests marine turtles are most likely attracted to increased prey abundance around offshore facilities, rather than the light sources itself.

Although the Operational Area and 20km buffer overlaps the BIAs for the green turtles (foraging), Olive Ridley turtles (foraging) (Table 4-6), the number of individuals likely to be present is expected to be low. Suitable interesting habitat for flatback turtles is typically defined as water depths shallower than 16 m (Whitlock et al., 2016). Interesting Olive Ridley turtles remain relatively close to nesting beaches during the nesting period (in comparison to post-nesting movements); tagged turtles remained within 48km of the nesting beach in waters typically <30 m water depth (Hamel et al., 2008). Water depth in the vicinity of the Operational Area is approximately 95m and the nearest marine turtle nesting sites are located more than 200km east. It is therefore reasonable to assume the Operational Area and 20km buffer are not used as a significant foraging or interesting location.

If individual adult turtles are present, light emissions are unlikely to be of concern. There is no evidence, published or anecdotal, to suggest interesting turtles are impacted by light from offshore vessels, and nothing in their biology would indicate this as a plausible threat (Witherington & Martin, 2003). Potential impacts to foraging turtles are limited to local attraction to prey species attracted to light (Kebodeaux, 1994). As such, the impact to adult marine turtles from light is anticipated to be slight and temporary.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 259 / 427
			Validity Status	Rev. No. B	

The effects of artificial light on female nesting and hatchling emergence behaviour have been well documented, and include:

- disrupted nest site selection and orientation of females on the beach (Witherington & Martin, 2003);
- lower nesting density on beaches with significant light spill; for example, from urban development adjacent to nesting beaches (Salmon, 2003; Hu et al., 2018);
- disrupted hatchling sea-finding behaviour (Withington & Martin, 2003; Pendoley & Kamrowski, 2015; Kamrowski et al., 2014); and
- hatchlings disoriented or misoriented by artificial lighting, such that they may take longer, or fail, to reach the sea. This may result in increased mortality through dehydration, predation, or exhaustion (Salmon & Witherington, 1995).

Given the Operational Area and a 20km buffer is located more than 200km east from the nearest marine turtle nesting sites (flatback) at Brace Point to One Tree Point in the Northern Territory, light emissions are not expected to affect the sea finding behaviour of hatchling turtles or hatchling dispersal.

7.6.3.3 Residual risk summary

The worst-case residual severity to seabirds and marine reptiles from light emissions is evaluated as Slight (1), given the distance from breeding and nesting areas respectively, the relatively short duration of activities and no flaring operations.

The likelihood of a change in behaviour from light emissions occurring as a result of the activities is considered Rare (A).

Therefore, the residual risk of light emissions due to the petroleum activities is considered Low.

7.6.4 Environmental Performance Outcomes and Control Measures

EPOs relating to this risk include:

- No significant impacts to marine fauna from lighting emissions (EPO-06).

CMs relating to this risk include:

- Lighting will be used as required for safe work conditions and navigational purposes. (CM-16).

EPSs and MC relating to the above are presented in Section 9.

7.6.5 As Low as Reasonably Practicable Demonstration

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
Eliminate	Eliminate light sources on the MODU and vessels	Lighting levels cannot be reduced or eliminated as this would introduce navigational and occupational safety hazards and non-compliance with codes and regulations.	*

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 260 / 427
				Validity Status	Rev. No. B	

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
	No night-time operations	Eliminating lighting at night would restrict the activity hours to during the daytime, resulting in the activity taking approximately twice as long to complete. Given the low levels of lighting already on the vessels, there would be little environmental benefit. Additionally, if the activity was to take twice as long to complete, emissions would be doubled and the risk of accidents would increase due to more movements to and from shore.	*
Substitute	<p>Adopt measures on the vessels/MODU designed to minimise impacts to marine turtles as per National Light Pollution Guidelines for Wildlife (management actions) (DCCEEW, 2023):</p> <ul style="list-style-type: none"> • Use non-reflective, dark-coloured surfaces (best practice design principle 5) • Replace some or all lights with reduced or filtered blue, violet, and ultraviolet wavelengths (best practice design principle 6) 	<p>Substituting external lighting for lights/design such as those identified in the National Light Pollution Guidelines for Wildlife would result in significant cost sacrifice and time expenditure.</p> <p>Given the distance of the Operational Area, from the nearest nesting sites and the already slight impacts of lighting from the petroleum activities on marine fauna, cost of adopting measures (management actions) within the National Light Pollution Guidelines for Wildlife outweighs the environmental benefit.</p> <p>Lighting is already applied to levels required for safe work conditions and navigational purposes on the vessel.</p>	*
Engineering	N/A	N/A	N/A
Isolation	N/A	N/A	N/A
Administrative	Lighting will be used as required for safe work conditions and navigational purposes	Lighting is assessed to only provide necessary lighting for safety and navigation during the activity. Reducing the potential for additional light pollution to the environment, thus reducing the potential impacts to fauna.	✓ (CM-16)

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 261 / 427
			Validity Status	Rev. No. B	

7.6.6 Acceptability Demonstration

Demonstration of acceptability	
Compliance with Legal Requirements, Laws and Standards	<p>Light emissions from petroleum activities are managed in accordance with relevant legislative requirements, including compliance with international maritime conventions and Australian legislation.</p> <p>Light emissions from petroleum activities are managed in accordance with EPBC Act Policy Statement 3.21 Industry guidelines for avoiding, assessing, and mitigating impacts on EPBC Act listed Migratory shorebird species (Commonwealth of Australia, 2015a).</p>
Policy Compliance	<p>The management of lighting from the petroleum activities is aligned with Eni policies and standards. The residual risk is Low, which is acceptable.</p> <p>The EPOs, CMs and EPSs that will be implemented are consistent with Eni internal requirements.</p>
Social Acceptability	<p>To date, no relevant person concerns have been raised regarding light (refer Section 5).</p> <p>An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.</p>
Area Sensitivity/ Biodiversity	<p>The Operational Area and 20km light buffer do not intersect with any State or Territory marine protected areas, AMPs, wetlands of international or national importance, World, National or Commonwealth heritage properties or places, or KEFs.</p> <p>Foraging BIAs for the green turtle and Olive Ridley turtle overlap the Operational Area and 20km light buffer. No BIAs for migratory shorebirds or seabirds overlap these areas. Light emissions may have temporary and localised behavioural disturbance to individual marine turtles, however, is not anticipated to displace marine turtles from critical habitats or impact nesting adults and emerging and dispersing hatchlings.</p> <p>Eni has considered information contained in relevant recovery plans and approved conservation advice for EPBC Act listed species that identify light pollution as a threat (as listed in Table 2-3). This includes:</p> <p>Conservation Advice</p> <ul style="list-style-type: none"> • Approved Conservation Advice for <i>Calidris ferruginea</i> (Curlew Sandpiper) states actions that have indirect impacts on habitat critical to the survival (such as light pollution) should be minimised. • Conservation Advice for <i>Numenius madagascariensis</i> (Far Eastern Curlew) states actions that have indirect impacts on habitat critical to the survival (such as light pollution) should be minimised. • Approved Conservation Advice for <i>Calidris canutus</i> (Red Knot) (DCCEEW, 2024a) states actions that have indirect impacts on habitat critical to the survival (such as light pollution) should be minimised. • Conservation Advice for <i>Calidris acuminata</i> (sharp-tailed sandpiper) states actions that have indirect impacts on habitat critical to the survival (such as light pollution) should be minimised. <p>Recovery/Management Plans</p> <p>The petroleum activity is consistent with the objectives and actions of the plans identified below through adoption of EPO-05 and CM-16 outlined in Section 7.6.4:</p> <ul style="list-style-type: none"> • National Light Pollution Guidelines for Wildlife including Marine Turtles, Seabirds and Migratory Shorebirds (DCCEEW, 2023). The

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 262 / 427
				Validity Status	Rev. No. B	

Demonstration of acceptability	
	<p>management of artificial light emissions are aligned with the objectives of this plan through the adoption of the EPO and CM-16.</p> <ul style="list-style-type: none"> Recovery Plan for Marine Turtles in Australia 2017–2027 (DEE, 2017) identifies light pollution as a threat to marine turtles. The Operational Area and 20km light buffer do not overlap nesting or internesting BIAs or habitat critical to the survival of the species, however does overlap foraging BIAs for the green turtle and Olive Ridley turtle. The petroleum activities are consistent with Action Area A8 of the plan (minimise light pollution) through the adoption of the EPO and CM-16. Wildlife Conservation Plan for Seabirds (Commonwealth of Australia, 2020) identifies light pollution as a threat to seabirds. The petroleum activities are consistent with Objective 2 of this plan (to identify and protect seabirds and their habitats) through the adoption of the EPO and CM-16. The Wildlife Conservation Plan for Migratory Shorebirds (Commonwealth of Australia, 2015a) identifies artificial lighting as part of anthropogenic disturbance and a threat to migratory shorebirds. The petroleum activities are consistent with the objective of this plan 'anthropogenic threats to migratory shorebirds in Australia are minimised or, where possible, eliminated', through the adoption of EPO-05 and CM-16. <p>Recovery Plans/Conservation Advice for other EPBC Act listed threatened and migratory species that may occur in the Operational Area do not identify light pollution as a threat or have explicit objectives or management actions related to light pollution.</p> <p>The control measures outlined in Section 7.6.4 are consistent with the objectives and actions in these publications. The petroleum activities are not inconsistent with the objectives and actions in the relevant recovery plans/conservation advice.</p>
ESD Principles	<p>The activity is consistent with the principles of ESD because:</p> <ul style="list-style-type: none"> the impacts associated with light emissions do not result in 'threats of serious or irreversible harm' as detailed within the EPBC Act and biodiversity and ecological integrity will be maintained. conservative assumptions have been applied to the light impact assessment. there are no identified health, diversity or productivity impacts that may affect the biodiversity or ecological function for future generations.
ALARP	The residual risk has been demonstrated to be ALARP.

Given the relatively short duration of the petroleum activities, and light source of navigational and operational lighting only (with no flaring activities), and the distance of the Operational Area from the nearest turtle nesting beaches, the potential impacts are considered Slight (1). Controls have been evaluated in accordance with the ALARP criteria (Section 6.3). The residual risk associated with light emissions is considered Low, which is acceptable in accordance with Eni's acceptability criteria (Table 6-5: Eni acceptability factors). Potential impacts associated with light emissions are therefore acceptable and ALARP.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 263 / 427
			Validity Status	Rev. No. B	

7.7 Planned Discharges - Routine

7.7.1 Summary of Environmental Risk Assessment

Hazard	Planned Discharges - Routine		
	Frequency	Severity	Risk
Inherent Risk	C	1	L
Residual Risk	C	1	L

7.7.2 Description of Hazard

During the petroleum activities, routine discharges will be generated from:

- MODU operations; and
- Vessel operations.

7.7.2.1 MODU and Vessel Operations

During the petroleum activities, the MODU and vessels will generate the following routine planned discharges:

- Sewage;
- Grey water;
- Food/putrescible waste;
- Brine (from water treatment plant);
- Cooling water; and
- Deck drainage and bilge water.

Grey water and sewage as well as food wastes will be generated on-board the MODU and support vessels, with volumes being directly proportional to the persons on board (POB). This will range from approximately 15 POB for small support vessels (small utility vessels), to 50 for a larger support vessel (construction support vessel), and up to 140 for the MODU (see Section 3.5 for further details). Based on information presented by National Energy Resources Australia (2017), it is estimated 0.04 to 0.45m³ of sewage and greywater, per person per day, will be released to the marine environment during petroleum activities.

The generation of food waste from feeding personnel will result in the discharge of food waste. The scraps are macerated and discharged within the operational area as permitted under the Marine Order requirements. The volume of putrescible wastes varies depending on persons on board; however, it is predicted approximately 1 to 2kg of wastes per day per person.

Concentrated brine is a waste stream created through the vessel desalination equipment for potable water generation. Brine generated from the water supply systems on-board the vessel will be discharged to the ocean at a salinity of approximately 10% higher than seawater. The volume of the discharge is dependent on the requirement for fresh (or potable) water and would vary between vessels and the number of people on-board.

Cooling water is used as a heat exchange medium for the cooling of machinery engines on the MODU and support vessels. Seawater is drawn from the ocean and flows counter-current through closed-circuit heat exchangers, transferring heat from engines and machinery to the seawater. The seawater is then discharged to the ocean. Cooling water temperatures vary

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 264 / 427
				Validity Status	Rev. No.	
					B	

depending upon the vessel engine's workload and activity; however, may be in the vicinity of 32°C.

Bilge water is generated on the MODU and support vessels and consists of deck drainage and machinery space water that has been directed to a bilge water tank. Sources of contamination include chemical spills on deck. Bilge water shall be diverted to a holding tank either for onshore disposal at an appropriately licenced facility, or for discharge with an oil content of less than 15 parts per million (ppm) in accordance with Marine Order 91.

Vessel-based operations have an expected duration of 14 to 40 days, depending on the activity (see Section 3.1.3). The MODU operations have an expected duration of 30 to 60 days, depending on success of the first campaign (see Section 3.1.3).

7.7.3 Potential Environmental Impact

Routine discharges have the potential to result in various environmental impacts to receptors, including:

- Change in water quality;
- Change in fauna behaviour; and
- Injury or mortality of marine fauna (plankton).

Potential receptors that may be impacted are:

- Water quality; and
- Marine fauna (plankton, marine invertebrates, marine mammals, marine reptiles, fish, sharks and rays).

There are no marine protected areas or KEFs within the Operational Area.

7.7.3.1 Water quality

Change in water quality

Routine vessel and MODU discharges will result in localised impact on water quality from increased temperature, salinity, nutrients, and chemical toxicity. The planned liquid discharges from the petroleum activity will be small and intermittent, with quantities determined by the specific activity.

Temperature

The release of cooling water into the marine environment will increase the ambient temperature of the surrounding water. Modelling produced for Woodside found that discharged water temperature decreases quickly as it mixes with the receiving waters, with the discharge water temperature being <1°C above ambient within 100m (horizontally) of the discharge point, and 10m vertically (Woodside 2014). As such, given the nature of discharge and the open ocean metaocean conditions, a highly localised increase in temperature is expected to be negligible and within the immediate are of the discharge.

Salinity

Concentrated brine is a waste stream created through the vessel desalination equipment for potable water generation. Due to its greater density compared to seawater, brine will sink and subsequently disperse into the water column from ocean currents. Studies indicate that most marine species are able to tolerate short-term fluctuations in salinity (20–30%) (Walker and McComb 1990), and it is expected that most pelagic species would be able to tolerate

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 265 / 427
				Validity Status	Rev. No. B	

short-term exposure to the slight increase in salinity caused by the discharged brine. Given the relatively low volume and intermittent nature of brine discharge and the open ocean metocean conditions, a localised increase in salinity is expected to be negligible and within the immediate area of the discharge.

Nutrients

Contaminants found in routine discharges may result in localised increase in nutrients in the marine environment, which can increase nutrient availability, algal growth and subsequently eutrophication (NERA, 2017). Sewage is typically composed of more than 99% fresh water, with small amounts of contaminants and nutrients such as organic carbon, nitrogen, and phosphorus. However, elevated nutrient levels from sewage, putrescible waste, and grey water discharges, are anticipated to either dilute in the receiving waters, settle out of the water column, chemically break down or be consumed by bacteria (NERA, 2017).

Chemical Toxicity

The release of chemical contaminants found in bilge water, such as oily fluids, lubricants, and cleaning fluids, and in the scale inhibitors and biocides, used in heat exchange and desalination process, and treatment of bilge and deck drainage, have the potential to increase the toxicity of the surrounding water.

Modelling by Shell (2009) indicates that upon discharge, hydrocarbon and other chemical concentrations are rapidly diluted and expected to be below Predicted No Effect Concentration (PNEC) within less than 100m of the discharge point, within a relatively short period of time. The biocides typically used in the industry are highly reactive and degrade rapidly (Black et al., 1994). Standard marine vessel discharges typically use these chemicals in low concentrations, which upon discharge, rapidly dilute to below PNEC. Any chemicals are selected in accordance with the Eni Chemical Assessment Process to ensure ecotoxicity profiles are of an acceptable level.

The offshore open ocean metocean conditions will rapidly dilute the discharge due to the mixing of the surface and near surface waters driven by current and tidal action. Therefore, any changes to the water quality from routine discharges are anticipated to be temporary and localised.

7.7.3.2 Marine fauna

Change in fauna behaviour

The release of routine discharges may result in a change to the behaviour of marine fauna. The discharge of sewage and food wastes will create a localised and temporary food source and may attract marine fauna to the source. As discussed above, the discharge extent for all planned discharges is anticipated to be localised and rapidly dilute within the open ocean environment. This is likely to limit the impacts of putrescible waste discharges to within the vicinity of the discharge and to be temporary in nature. Furthermore, marine fauna found within the Operational Area are likely to be transient. Therefore, any changes to marine fauna behaviour are anticipated to be short-term due to the rapid dispersion of the plume and the transient fauna movement.

Given the nature of discharged chemicals, the small volumes that could be released to the marine environment and the nature of the marine environment within the vicinity of the Operational Area, the operational planned discharges are not predicted to have ecologically significant effects.

Injury or mortality to marine fauna

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 266 / 427
				Validity Status	Rev. No.	
					B	

The potential increase of chemical toxicity within the marine environment from routine discharges has the potential to cause injury, or mortality, to plankton. A change in water quality as a result of routine discharges is unlikely to lead to injury or mortality of plankton at a measurable level given the small discharge quantities and rapid dilution anticipation following the release. Plankton are known to accumulate rapidly, due to their small size and high surface area to volume ratio, therefore populations are typically not sensitive to the impacts of contaminants in the water column (Hook et al. 2016). The ability of plankton to rapidly reproduce and their inherent population dynamics means they can quickly recover from temporary disturbances. The Operational Area does not overlap any areas known for upwelling, known for high productivity. Therefore, the consequence of any impacts to plankton from planned discharges from the petroleum activity are expected to be negligible and not cause impacts at an ecosystem or population level.

7.7.3.3 Residual risk summary

The worst-case residual severity to water quality and marine fauna from routine discharges is evaluated as Slight (1), given the quantities of the discharges, the low toxicity of the contaminants, and the open ocean metaocean conditions causing the discharges to rapidly disperse and dilute in the marine environment.

The likelihood of a change to water quality from routine discharges occurring as a result of the activities is considered Credible (C).

Therefore, the residual risk of changes to water quality and marine fauna behaviour due to the petroleum activities is considered Low.

7.7.4 Environmental Performance Outcomes and Control Measures

EPOs relating to this risk include:

- No unplanned discharges to sea of untreated sewage, greywater, putrescible wastes, bilge, and deck drainage (EPO-07); and
- No unplanned discharge of oily water or chemicals (EPO-08).

CMs relating to this risk include:

- Planned Maintenance System (PMS) (CM-14);
- Eni E&P Marine Manual (Marine assurance standard) (CM-13);
- Vessels and MODU comply with Marine Order 96 (Marine pollution prevention – sewage) (CM-17);
- Vessels and MODU comply with Marine Order 95 (Marine pollution prevention – garbage) (CM-18);
- Vessels and MODU comply with Marine Order 91 (Marine pollution prevention – oil) (CM-19); and
- Hazardous and non-hazardous waste management processes (CM-20).

EPSs and MC relating to the above are presented in Section 9.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 267 / 427
			Validity Status	Rev. No.	
				B	

7.7.5 As Low as Reasonably Practicable Demonstration

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
Eliminate	Eliminating discharge on vessels and MODU	<p>The generation of sewage, greywater, putrescible waste, bilge and deck drainage by personnel cannot be eliminated on the vessels or MODU, as storing the waste would present a safety issue.</p> <p>Storage space required for containment and an increase in transfers to shore for disposal would be required.</p> <p>Transportation to shore was considered as an alternative to ocean discharge; however, this would be excessively costly and impractical, due to the lack of storage capacity onboard the vessels and MODU and would result in increased vessel transits to provide ship-to-shore services. It also provides an increased exposure to biological health hazards, and safety hazards such as bulk transfer and heavy lifting operations.</p> <p>This discharge is permitted under Marine Orders and is not anticipated to present significant environmental impact.</p>	*
Substitute	N/A	N/A	N/A
Engineering	Equip vessels and MODU with oily water prevention system and IMO-approved oil filtering equipment	Reduces potential impacts of planned discharge of oily water to the environment, with minor administrative and maintenance cost.	✓ (Through compliance with Marine Order 91)
	Continually plug the deck drains on vessels and MODU to prevent deck drainage	<p>Would eliminate potential impacts of contaminants being discharged to sea from deck water; however, would present increased health and safety risks from wet deck and water on a vessel/MODU deck can also cause stability issues.</p> <p>Storage space required for containment of drained liquids and increase in transfers to vessels, resulting in increased potential impacts and risks.</p>	*
	Sewage treatment system	Reduces potential impacts of inappropriate discharge of sewage at sea or additional emissions associated with ship to shore of waste.	✓ (Through compliance with Marine Order 96)
Isolation	Capture contaminated waters/bilge water	Fixed equipment, such as engines and generators, are contained and captured in the bilge water tank for treatment via the oil in water (OIW) separator (on vessels	✓ (Through compliance

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 268 / 427
				Validity Status	Rev. No. B	

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
		and MODU) in compliance with Marine Order 91.	with Marine Order 91)
Administrative	Implementation of measures in Marine Order 95 (Marine pollution prevention – garbage)	Marine Order 95 reduces potential impacts of inappropriate discharge of sewage. Stipulates putrescible (food) waste disposal conditions and limitations. Environmental benefit outweighs the minor administrative costs in implementing the Marine Order.	✓ (CM-18)
	Implementation of measures in Marine Order 96 (Prevention of pollution – sewage)	Marine Order 96 reduces probability of garbage being discharged to sea. Environmental benefit outweighs the minor administrative costs in implementing the Marine Order.	✓ (CM-17)
	Vessels and MODU comply with Marine Order 91: Marine pollution prevention – oil	Marine Order 91 stipulates the oily water prevention system and treatment requirements for oil in water discharge from vessels and MODU. Environmental benefit outweighs the minor administrative costs in implementing the Marine Order.	✓ (CM-19)
	Chemical risk assessment process	Ensures that planned discharges to sea meet the criteria for not being harmful to the marine environment according to MARPOL Annex V; or Gold/Silver/D or E rated through OCNS; or have a completed chemical risk assessment so that only environmentally acceptable products are used.	✓ (CM-21)

7.7.6 Acceptability Demonstration

Demonstration of acceptability	
Compliance with Legal Requirements, Laws and Standards	Discharges comply with the requirements of the <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> , which in Australian waters reflects MARPOL, and is enacted by: <ul style="list-style-type: none"> • Marine Order 91: Marine pollution prevention – oil • Marine Order 95: Marine pollution prevention – garbage • Marine Order 96: Marine pollution prevention – sewage.
Policy Compliance	The management of the discharge is aligned with Eni policies and standards. The residual risk is Low, which is acceptable. The EPO and the controls that will be implemented are consistent with Eni internal requirements.
Social Acceptability	DPIRD requested confirmation that all chemicals and fluids used in the activity are selected on the criterion that they are lowest impact, which Eni confirmed is managed by its chemical risk assessment process (CM-21, described in Section 10.14) (refer Section 5). An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 269 / 427
				Validity Status	Rev. No. B	

Demonstration of acceptability	
Area Sensitivity/ Biodiversity	<p>The Operational Area does not intersect with any State or Territory marine protected areas, AMPs, wetlands of international or national importance, World, National or Commonwealth heritage properties or places, or KEFs.</p> <p>Foraging BIAs for the green turtle and Olive Ridley turtle overlap the Operational Area. Other marine fauna are likely to be transient in the Operational Area. The discharge extent for all routine planned discharges is anticipated to be localised and rapidly dilute within the open ocean environment.</p> <p>Eni has considered information contained in relevant recovery plans and approved conservation advice for EPBC Act listed species that identify chemical discharges, pollution and habitat degradation or modification as a threat (as listed in Table 2-3). This includes:</p> <p>Conservation Advice</p> <ul style="list-style-type: none"> • Approved Conservation Advice for <i>Balaenoptera borealis</i> (Sei Whale) identifies pollution (persistent toxic pollutants) as a threat. • Approved Conservation Advice for <i>Balaenoptera physalus</i> (Fin Whale) identifies pollution (persistent toxic pollutants) as a threat. • Approved Conservation Advice for Green Sawfish lists habitat degradation or modification as a threat. • Approved Conservation Advice for <i>Pristis pristis</i> (Large Tooth Sawfish) lists habitat degradation or modification as a threat. • Approved Conservation Advice for <i>Glyphis garricki</i> (Northern River Shark) lists habitat degradation or modification as a threat. • Approved Conservation Advice for <i>Rhincodon typus</i> (Whale Shark) lists habitat degradation or modification as a threat. <p>Recovery/ Management Plans</p> <p>The petroleum activity is consistent with the objectives and actions of the plans identified below through adoption of EPO-06 and EPO-07 and the control measures outlined in Section 7.7.4:</p> <ul style="list-style-type: none"> • Conservation Management Plan for the Blue Whale 2015–2025 (DoE, 2015) identifies habitat modification, including acute and chronic chemical discharge, as a threat. There are no BIAs for the blue whale overlapping the Operational Area. There are no explicit relevant management actions in this plan. The petroleum activity is consistent with the long-term recovery objective to 'minimise anthropogenic threats to allow the conservation status of the blue whale to improve so that it can be removed from the threatened species list under the EPBC Act' through the adoption of the EPOs. • Recovery plan for Marine Turtles in Australia (DEE, 2017) identifies acute chemical and terrestrial discharge as a threat. Foraging BIAs for the green turtle and Olive Ridley turtle overlap the Operational Area. Action Area A4 to minimise chemical and terrestrial discharge is met through the adoption of the EPOs. • Sawfish and River Shark Multispecies Recovery Plan (Commonwealth of Australia, 2015) lists habitat degradation or modification as a threat. No habitat critical or BIAs have been identified for sawfish or river sharks within the operational area. The petroleum activity is consistent with Objective 5 of this plan to 'reduce and, where possible, eliminate adverse impacts of habitat degradation and modification on sawfish and river shark species', through adoption of the EPOs. • Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) (2013) identifies habitat modification as a threat. No habitat critical or BIAs have been identified for white sharks within the operational area. The petroleum activity is consistent

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 270 / 427
				Validity Status	Rev. No. B	

Demonstration of acceptability	
	<p>with the objective of this plan to ensure anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future through adoption of the EPOs.</p> <ul style="list-style-type: none"> Recovery Plan for the Grey Nurse Shark (<i>Carcharias taurus</i>) (DoE, 2014a) identifies pollution as a threat. No habitat critical or BIAs for the grey nurse shark have been identified in the Operational Area. The petroleum activity is consistent with the objective of this plan to ensure anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future, through the adoption of the EPOs. <p>Recovery Plans/Conservation Advice for other EPBC Act listed threatened and migratory species that may occur in the Operational Area do not identify chemical discharges, pollution and habitat degradation or modification as a key threat or have explicit relevant objectives or management actions related to these threats.</p> <p>The control measures outlined in Section 7.7.4 are consistent with the objectives and actions in these publications. The petroleum activities are not inconsistent with the objectives and actions in the relevant recovery plans/ conservation advice.</p>
ESD Principles	<p>The petroleum activities are consistent with the principles of ESD because:</p> <ul style="list-style-type: none"> The impacts associated with the discharge do not result in 'threats of serious or irreversible harm' as detailed within the EPBC Act and biodiversity and ecological integrity will be maintained There are no identified health, diversity or productivity impacts that may affect the biodiversity or ecological function for future generations.
ALARP	The residual risk has been demonstrated to be ALARP.

Given the short duration of the petroleum activities, with the longest campaign being 30 days at each well, the potential impacts associated with discharge of sewage, greywater and putrescible wastes are considered to be Slight (1). Controls have been evaluated above and adopted in accordance with the ALARP criteria (Section 7.6.5). The residual risk is considered to be Low, which is acceptable in accordance with Eni's acceptability criteria (Table 6-5). Therefore, the potential impacts associated with routine discharges are acceptable and ALARP.

7.8 Planned Discharges - Decommissioning

7.8.1 Summary of Environmental Risk Assessment

Hazard	Planned Discharges - Decommissioning		
	Frequency	Severity	Risk
Inherent Risk	B	1	L
Residual Risk	B	1	L

7.8.2 Description of Hazard

During the petroleum activities, decommissioning discharges will occur as a result of the following MODU operations:

- Pre-decommissioning activities (GVI survey campaign);
- Removal of corrosion cap;
- Secondary well control (BOP activities);
- Drill out of cement plugs;

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 271 / 427
			Validity Status	Rev. No. B	

- Well integrity evaluation;
- Setting of cement plug and permanent isolation of the reservoir; and
- Wellhead removal.

7.8.2.1 GVI Survey Campaign

Cleaning chemicals may be released during the removal of marine growth that may occur in the GVI Survey Campaign, as discussed in Section 3.2.1. The cleaning chemicals are typically calcium wash, fluorescent dye, and sulfamic acid. See Table 7-12 for the predicted volume of each.

7.8.2.2 Removal of corrosion cap

The removal of the corrosion cap from the wellhead, as discussed in Section 3.3.2, will release < 1m³ of the inhibited seawater, seawater and biocide, trapped underneath the cap.

7.8.2.3 Secondary well control (BOP activities)

The process of latching and unlatching the BOP, as discussed in Section 3.3.3 and 3.3.8, and will release ~2.5m³ of control fluid (hydraulic fluid) into the marine environment each time per well.

7.8.2.4 Drill out of non-reservoir cement plugs

During the process of drilling out the two non-reservoir cement plugs at Petrel-4, as discussed in Section 3.3.4, ~6m³ of treated cement debris, and ~100m³ of an inhibited water-based drilling brine solution (WBM) will be discharged to the marine environment per each well.

7.8.2.5 Well integrity evaluation

Whilst ensuring the integrity of the well, as discussed in Section 3.3.5, approximately 20m³ of cement will be discharged to the seabed during the reinforcement of the cement bond. The process of milling may be required during the well integrity evaluation. If required, approximately 3.5m³ of swarf, 3m³ of drilled cement and 3.5m³ of formation rock will be discharged overboard at the sea surface at intervals of 100m (see Section 3.3.5 for further details).

7.8.2.6 Setting of cement plug and permanent isolation of the reservoir

As discussed in Section 3.3.6 a discharge of ~2.4 to 8m³ of cement slurry may be released, per well, during the testing of the cement unit. Upon completion of each cementing activity, less than 1m³ of cement washings will be discharged to the sea, due to cleaning of the unit. Additionally, as part of the process, less than 160m³ WBM will be displaced from the well to the MODU and subsequently discharged to the sea surface. Any excess of WBM, estimated at 500m³ per well, will be discharged at the sea surface. Furthermore, any excess of inhibited seawater will also be discharged, typically around 25m³ per well.

7.8.2.7 Well head removal

During the internal cutting of the wellhead, for the full wellhead option, as discussed in Section 3.3.9.1, inhibited seawater, trapped within the annulus will be discharged below or at the seabed. The content is likely to be old water and biocide and similar to the corrosion cap release (<1m³). For the partial removal option, a plume of debris, aerated water and

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 272 / 427
				Validity Status	Rev. No. B	

sediment, may surround the wellhead as it is cut and retrieved, as discussed in Section 3.3.9.2.

Table 7-12 summarises the anticipated discharges and the associated volume that will occur for each decommissioning activity.

Table 7-12: Summary of the type and predicted volume of planned decommissioning discharges for each activity

Discharge Type		Decommissioning Activity	Discharge Volume
Inhibited water		Removal of corrosion cap	<1m ³
		Setting cement plug & isolation of the reservoir	25m ³ per well
		Wellhead removal	<1m ³
Control Fluid		Secondary well control (Establishment and Recovery)	2.5m ³ each time
Cement	Cement	Well integrity evaluation	20m ³ each well to seabed
	Cement Debris	Drill out of cement plugs	6m ³ each well
	Cement Slurry	Setting cement plug & isolation of the reservoir	~2.4 to 8m ³ per well
	Cement Washing		<1m ³ per well
Water Based Mud (WBM)		Drill out of cement plugs	<160m ³
		Setting cement plug & isolation of the reservoir	500m ³
		Setting cement plug & isolation of the reservoir	100m ³
Bulk powder		Disposal of excess bulk products (following process in Figure 7-2)	75MT bulk powder (calcium carbonate)
Cleaning chemicals	Calcium wash	GVI Survey Campaign	40-80L
	Fluorescent dye		1L
	Sulfamic acid		20L

Unused excess dry bulks will be, where reasonably practicable, provided to the next operator at the end of decommissioning. Figure 7-2 presents the decision framework for managing volumes of calcium carbonate remaining on the MODU. Excess cement, bentonite or barite are not discharged as a bulk product at the end of drilling, the products will either be passed to the next operator or sent back to shore via vessel, providing always that safety risks in handling the bulks offshore and onshore are managed to ALARP and are tolerable.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 273 / 427
			Validity Status	Rev. No.	
				B	

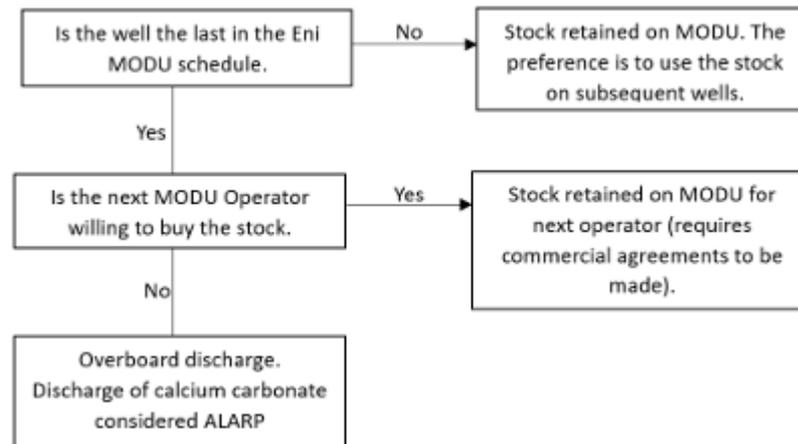


Figure 7-2: Decision framework for managing calcium carbonate at the end of decommissioning

7.8.3 Potential Environmental Impact

The release of discharges from decommissioning activities has the potential result in various environmental impacts to receptors, including:

- Change in water quality;
- Change in habitat; and
- Injury or mortality of marine fauna.

Potential receptors that may be impacted are:

- Water quality;
- Benthic habitats and communities; and
- Marine fauna.

There are no marine protected areas or KEFs within the Operational Area.

7.8.3.1 Water quality

Change in water quality

Planned discharges released into the marine environment during decommissioning activities have the potential to change the water quality in the vicinity of the release site. The discharge of fluids into the marine environment during decommissioning activities will result in a reduction in water quality and an increase in turbidity and TSS levels in the water column. The release of certain fluids has the potential to increase the toxicity levels within the marine environment.

WBM is a drilling fluid in which water or brine is the major liquid phase as well as the wetting (external) phase. Apart from water or brine, this WBM is made up of fluid additives that are typically completely inert in the marine environment. The additives are often naturally occurring, benign minerals or organic polymers, which are readily biodegradable in the marine environment. These additives will generally have low concentrations of products that can cause environmental impact. Bentonite sweeps or barite, typically used as weighting agents in the WBM, also have very low toxicities. Similarly, cement is also considered to be an inert substance, and both WBM and cement are considered by OSPAR to pose little or no risk to

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 274 / 427
			Validity Status	Rev. No. B	

the environment (OSPAR, 2021). Therefore, impacts to marine species from increased toxicity are not anticipated.

Increased turbidity and TSS in the water column from the discharge of fluids, such as WBM, cement slurry, and cement washings, will result in a temporary change in water quality. Modelling conducted by BP (2013) detailed that particulate concentrations within a discharge of a cement plume was between 5-50mg/L 2 hours after the discharge and was less than 5mg/l 4 hours after the discharge, indicating that the plume will rapidly disperse when released into the marine environment. In well-mixed ocean waters, fluids, such as WBM, have been shown to dilute by 100-fold within 10 m of the release site and by 1000-fold after a transport time of about 10 minutes at a distance of about 100 m from the platform (Neff et al., 2005). Given the volumes released and open ocean environment the WBM and cement particles are expected to disperse under the action of metocean conditions and eventually settle out of the water column. Impacts to marine fauna from increased turbidity and TSS are not predicted.

The release of certain fluids has the potential to increase the toxicity levels within the marine environment, such as control fluid, cleaning agents and inhibited seawater. Inhibited seawater consists of chemical additives such as biocide, oxygen scavenger, dyes, corrosion inhibitor (see Section 3.3.2 and 3.3.6). Cleaning chemicals may also be used to remove marine growth (such as sulfamic acid, calcium wash and fluorescent dye) (see Section 3.2.1). Control fluid released when latching and unlatching the BOP is typically hydraulic fluid (see Section 3.3.3 and 3.3.8). However, given the relatively small quantities of each (see Table 7-12), to the open ocean environment, and the short period of discharge, the release of these discharges are expected to rapidly disperse into the water column. The discharge has the potential to cause a very highly localised change to the water quality in the immediate proximity to the release, however, is anticipated to return to base levels quickly after the release.

Given the quantities of decommissioning discharges, the low toxicity of WBM and cement and high dispersion in the open, offshore environment, any impact to water quality is anticipated to be minor and temporary. Recovery of water quality conditions is expected within hours after the cessation of the decommissioning activities. For impact to sediment quality, refer to Section 7.1.

7.8.3.2 Benthic habitats and communities

Change in habitat

Benthic habitat may be disturbed when decommissioning activities result in discharges being released on the seabed.

During well integrity evaluation approximately 20m³ of cement will be discharged to the seabed per well during decommissioning activities (see Table 7-12). The discharged cement is not anticipated to disperse or release any chemicals from the cement, as cement is designed to set, is inert and considered to pose little or no risk to the environment (OSPAR, 2021). Therefore, the impact from discharged cement is limited to the potential for it to smother the benthic habitats and associated communities. A study conducted by BP modelled the discharge of ~83m³ of cement discharged at the seabed and identified that changes to the benthic environment was limited to maximum of ~10m radius from the cement release (BP, 2013). The seabed within the Operational Area is characterised by sand (with gravel, silt and clay) and sparse sessile epibenthic organisms (see Section 4.3.6). Therefore, the impact from cement is anticipated to be minimal, and restricted to the small area around the release site.

The discharge of WBM onto the seabed during the decommissioning activities can potentially cause physical damage to benthic organisms by abrasion or clogging, or through changes in

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 275 / 427
				Validity Status	Rev. No. B	

sediment texture that can inhibit the settlement of planktonic polychaete and mollusc larvae (Hinwood et al., 1994; Neff et al., 2005). Impacts are not expected to be significant due to the rapid biodegradation and dispersion of WBM, as discussed above. Recovery of benthic communities following physical damage has been shown to occur by recruitment of new colonists from planktonic larvae and immigration from adjacent undisturbed sediments. Ecological recovery usually begins shortly after completion of the activity and often is well advanced within a year (Neff et al., 2005). Furthermore, the lack of significant habitats and biota or sensitive receptors present in the Operational Area over the area contacted by WBM discharges, indicate that impacts to sensitive benthic habitats and communities are not anticipated to occur (see Section 4.3.6).

See Section 7.1 for further details on seabed disturbance to benthic habitats and communities.

7.8.3.3 Marine fauna

Injury / mortality to marine fauna

The release of certain fluids into the marine environment during the decommissioning activities has the potential to cause injury, or mortality, to marine fauna.

Cement and WBM are both inert products and are both considered to pose little or no risk to the environment (OSPAR, 2021). Therefore, toxicity impacts to marine fauna such as plankton, fish, turtles, and marine mammals are not predicted. While very high concentrations of suspended sediments have been shown to result in mortality of marine fauna. A study by Jenkins and McKinnon (2006) indicated that levels of suspended sediments greater than 500mg/l are likely to produce a measurable impact upon larvae of most fish species and levels of 100mg/l where exposure occurs for greater than 96 hours may also affect the larvae of some species. The study further indicated that levels of 100mg/l may affect the larvae of several marine invertebrate species. Given the release volumes, metocean conditions and the limited time of exposure in the water column such concentrations are not expected to occur as a result of the decommissioning activities. Previous modelling has indicated that a cement plume will disperse rapidly once in the marine environment (BP, 2013). Therefore, impacts to marine fauna, including fish eggs and larva are not predicted.

Potential contamination or toxicity effects can occur through the release of inhibited water (including the annulus fluid), control fluid, and cleaning chemicals into the marine environment. During the removal of the corrosion cap, there is potential for 1m^3 of annulus fluid to be released into the marine environment. Control fluids (i.e. hydraulic fluid) will be discharged into the marine environment during the establishment and recovery of the secondary well control (BOP), releasing 2.5m^3 each time per well. Cleaning chemicals, such as sulfamic acid, calcium wash and fluorescent dye, may also be used to remove marine growth, similarly, to inhibited water, these will be in small volumes.

Diluted hydraulic control fluids are water-based, readily biodegradable and exhibit low levels of toxicity. Studies indicate that in well-mixed oceanic waters, such as that within the offshore environment of the Joseph Bonaparte Gulf (see Section 4.3.2), the control fluids will dilute by over 100-fold within 10m of the discharge release point (Neff, 2005). Neff (2010) indicate that control fluid from the BOP will disperse within 100m of the well location.

Any toxic effects that might potentially occur would likely be restricted to small organisms, such as plankton, larvae and potentially small fish, that become entrained in discharged water in the immediate vicinity of the release. Toxic effects to planktonic organisms are predicted to be limited given the short period of discharge, the small volumes, and the dispersive offshore marine environment. Toxicity impacts are therefore anticipated to not impact species at a population level.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 276 / 427
			Validity Status	Rev. No. B	

See Section 8.5 and 8.6 for a further evaluation of a minor loss of containment.

7.8.3.4 Residual risk summary

The worst-case residual severity from planned decommissioning discharges is evaluated as Slight (1), given the relatively low volume of infrequent discharges, and the dispersive offshore marine environment.

The likelihood of injury or mortality of marine fauna from planned discharges during decommissioning activities is considered Rare (A) as any toxicity impacts are predicted to be short-term and not impacts species at a population level due to the short discharge duration, small discharge volumes, and highly dispersive offshore environment.

Therefore, the residual risk of planned decommissioning discharges due to the petroleum activities is considered Low.

7.8.4 Environmental Performance Outcomes and Control

EPOs relating to this risk include:

- No impact to water quality or marine biota greater than a severity level of 2 from decommissioning discharges (EPO-09)

CMs relating to this risk include:

- Chemical risk assessment process (CM-21)
- Cuttings management system (CM-22)
- Eliminate discharge of excess barite/bentonite and cement at the end of drilling by returning product to shore or passing the product to other operators (CM-23)
- Quality control limits for barite and bentonite (CM-24).

EPSs and MC relating to the above are presented in Section 9.1.

7.8.5 As Low as Reasonably Practicable Demonstration

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
Eliminate	Eliminate the use of decommissioning fluids and muds	Decommissioning fluids and muds are technically required to decommission the well and cannot be eliminated. The chemical risk assessment process will ensure any new chemicals are assessed before use in accordance with the procedure to reduce impact to ALARP and acceptable.	*
	Store fluids and muds on MODU and vessels for onshore processing	Storage of low toxicity decommissioning discharges onboard the MODU and vessels and transportation to shore is considered to be impractical due to the high volume and number of vessels that would be required to provide ship to shore services. Additional energy use and emissions	*

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 277 / 427
				Validity Status	Rev. No.	
					B	

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
		<p>associated with onshore transport and treatment would also be introduced, as well as potential impact on the ultimate receiving terrestrial environment. Therefore, there is no net environmental benefit of transfer for onshore disposal. It also provides an increased exposure to biological health hazards, and safety hazards such as bulk transfer and heavy lifting operations.</p>	
	<p>Eliminate discharge of excess barite/bentonite and cement at the end of decommissioning by returning product to shore or passing the product to other operators</p>	<p>The design of the piping and the tanks on the MODU are not designed for the reverse pumping of the cement and barite / bentonite products back to marine vessels to return the product to shore. However through some operational changes the practice is possible. The process may be problematic operationally due to handling and cleaning of vessel Ptanks involving confined space entry and safety risks. On the shore side the systems are not currently designed to receive the bulks back from vessels with much greater pressurised systems. Eni has safety concerns on enacting this practice when viewing the whole supply chain involved in returning excess bulks from the rig to vessels to port to trucks and ultimately to landfill, where there is minimal if any environmental benefit hence grossly disproportionate to the additional activity and emissions. Moreover the Barite mercury content has been checked with the provider as being undetectable in what is a naturally occurring mineral product. In the first instance the bulk cement and barite / bentonite products at the end of drilling will be passed to the next operator and if that cannot be achieved the products will be returned to shore providing always that safety risks in handling the bulks are managed to ALARP and are tolerable. Calcium carbonate as a bulk product is managed in accordance with Figure 7.1 The product is a naturally occurring inert material.</p>	<p>✓ (CM-23)</p>
Substitute	Substitute out high-toxicity chemicals where possible	The chemical risk assessment process will ensure any impact from chemical discharge is ALARP and acceptable. See Section 10.14.	<p>✓ (CM-21)</p>
Engineering	N/A	N/A	N/A

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 278 / 427
			Validity Status	Rev. No. B	

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
Isolation	N/A	N/A	N/A
Administrative	Selection of chemicals to reduce impact to ALARP and acceptable	The chemical risk assessment process will ensure any new chemicals are assessed before use in accordance with the procedure to reduce impact to ALARP and acceptable. See Section 10.14.	✓ (CM-21)

7.8.6 Acceptability Demonstration

Demonstration of acceptability	
Compliance with Legal Requirements, Laws and Standards	Planned decommissioning discharges from petroleum activities are managed in accordance with relevant legislative requirements, including compliance with international maritime conventions and Australian legislation.
Policy Compliance	The management of the discharge is aligned with Eni policies and standards. The residual risk is Low, which is acceptable. The EPO and the controls that will be implemented are consistent with Eni internal requirements.
Social Acceptability	DPIRD requested confirmation that all chemicals and fluids used in the activity are selected on the criterion that they are lowest impact, which Eni confirmed is managed by its chemical risk assessment process (CM-21, described in Section 10.14) (refer Section 5). An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks. An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 279 / 427
			Validity Status	Rev. No. B	

Area Sensitivity/ Biodiversity	<p>The Operational Area does not intersect with any State or Territory marine protected areas, AMPs, wetlands of international or national importance, World, National or Commonwealth heritage properties or places, or KEFs.</p> <p>Foraging BIAs for the green turtle and Olive Ridley turtle overlap the Operational Area. Other marine fauna are likely to be transient in the Operational Area. Any toxicity impacts are predicted to be short-term and not impact species at a population level due to the short discharge duration, small discharge volumes, and highly dispersive offshore environment.</p> <p>Eni has considered information contained in relevant recovery plans and approved conservation advice for EPBC Act listed species that identify chemical discharges, pollution and habitat degradation or modification as a threat (as listed in Table 2-3). This includes:</p> <p>Conservation Advice</p> <ul style="list-style-type: none"> • Approved Conservation Advice for <i>Balaenoptera borealis</i> (Sei Whale) identifies pollution (persistent toxic pollutants) as a threat. • Approved Conservation Advice for <i>Balaenoptera physalus</i> (Fin Whale) identifies pollution (persistent toxic pollutants) as a threat. • Approved Conservation Advice for Green Sawfish lists habitat degradation or modification as a threat. • Approved Conservation Advice for <i>Pristis pristis</i> (Large Tooth Sawfish) lists habitat degradation or modification as a threat. • Approved Conservation Advice for <i>Glyphis garricki</i> (Northern River Shark) lists habitat degradation or modification as a threat. • Approved Conservation Advice for <i>Rhincodon typus</i> (Whale Shark) lists habitat degradation or modification as a threat. <p>Recovery/Management Plans</p> <p>The petroleum activity is consistent with the objectives and actions of the plans identified below through adoption of EPO-08 and the control measures outlined in Section 7.8.4:</p> <ul style="list-style-type: none"> • Conservation Management Plan for the Blue Whale 2015–2025 (DoE, 2015) identifies habitat modification, including acute and chronic chemical discharge, as a threat. There are no BIAs for the blue whale overlapping the Operational Area. There are no explicit relevant management actions in this plan. The petroleum activity is consistent with the long-term recovery objective to 'minimise anthropogenic threats to allow the conservation status of the blue whale to improve so that it can be removed from the threatened species list under the EPBC Act' through the adoption of the EPO. • Recovery plan for Marine Turtles in Australia (DEE, 2017) identifies acute chemical and terrestrial discharge as a threat. Foraging BIAs for the green turtle and Olive Ridley turtle overlap the Operational Area. Action Area A4 to minimise chemical and terrestrial discharge through the adoption of the EPO. • Sawfish and River Shark Multispecies Recovery Plan (Commonwealth of Australia, 2015) lists habitat degradation or modification as a threat. No habitat critical or BIAs have been identified for sawfish or river sharks within the operational area. The petroleum activity is consistent with Objective 5 of this plan to 'reduce and, where possible, eliminate adverse impacts of habitat degradation and modification on sawfish and river shark species', through adoption of the EPO. • Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) (2013) identifies habitat modification as a threat. No habitat critical or BIAs have been identified for white sharks within the operational area. The petroleum activity is consistent with the objective of this plan to ensure anthropogenic activities
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	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 280 / 427
				Validity Status	Rev. No. B	

	<p>do not hinder recovery in the near future, or impact on the conservation status of the species in the future through adoption of the EPO.</p> <ul style="list-style-type: none"> Recovery Plan for the Grey Nurse Shark (<i>Carcharias taurus</i>) (DoE, 2014a) identifies pollution as a threat. No habitat critical or BIAs for the grey nurse shark have been identified in the Operational Area. The petroleum activity is consistent with the objective of this plan to ensure anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future, through the adoption of the EPO. <p>Recovery Plans/Conservation Advice for other EPBC Act listed threatened and migratory species that may occur in the Operational Area do not identify chemical discharges, pollution and habitat degradation or modification as a key threat or have explicit relevant objectives or management actions related to these threats.</p> <p>The control measures outlined in Section 7.8.4 are consistent with the objectives and actions in these publications. The petroleum activities are not inconsistent with the objectives and actions in the relevant recovery plans/conservation advice.</p>
ESD Principles	<p>The petroleum activities are consistent with the principles of ESD because:</p> <ul style="list-style-type: none"> The impacts associated with the discharge do not result in 'threats of serious or irreversible harm' as detailed within the EPBC Act and biodiversity and ecological integrity will be maintained. There are no identified health, diversity or productivity impacts that may affect the biodiversity or ecological function for future generations.
ALARP	The residual risk has been demonstrated to be ALARP.

Given the short duration of the petroleum activities, the relatively small volumes of planned decommissioning discharges and dispersive offshore marine environment in the Operational Area, the potential impacts associated with decommissioning discharges are considered to be Slight. Controls have been evaluated above and adopted in accordance with the ALARP criteria (Section 6.3).

The residual risk is considered to be Low, which is acceptable in accordance with Eni's acceptability criteria (Table 6-5). Therefore, the potential impacts associated with planned decommissioning discharges are acceptable and ALARP.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 281 / 427
			Validity Status	Rev. No.	
	B				

8 ENVIRONMENTAL RISK ASSESMENT - UNPLANNED EVENTS

8.1 Interaction with Other Marine Users – Equipment in-situ

8.1.1 Summary of Environmental Impact

Hazard	Interaction with Other Marine Users – Equipment in-situ		
	Frequency	Severity	Risk
Inherent Risk	B	1	L
Residual Risk	B	2	L

8.1.2 Description of Hazard

Unplanned interactions with other marine users may occur as a result of:

- permanent presence of the wellheads or other equipment, if these are left in-situ; depending on final selection of wellhead removal option following the pre-decommissioning inspection.

Leave in-situ has been identified as the worst-case option for interaction with other marine users – equipment in-situ, and is used as the basis for impact assessment in this section (as per options assessment in Section 3.6).

8.1.2.1 Wellheads in situ

The presence of the wellheads in situ will last for many decades until the material is completely degraded. The ongoing presence of the wellheads in situ may interfere with third-party activities, such as commercial fishing, commercial shipping and offshore industry activities.

The wellheads protrude approximately 3m above the seabed, so are ~92m below the sea surface. Demersal trawling consists of towing a net across the seabed to catch fish that are generally within 2-3m of the seabed (Baker, 2003). Protruding wellheads or other structures may potentially snag fishing nets.

The Petrel-3 and Petrel-4 wellheads have been in place since 1982 and 1988, respectively. Since then, no impacts to any stakeholder were reported.

8.1.3 Potential Environmental Impact

The continuous presence of the wellheads and other equipment such as TGB, PGB, guideposts and cement patio may result in:

- Change to the functions, interests or activities of other marine users.

Potential receptors that may be impacted are:

- Commercial fisheries;
- Defence; and
- Offshore industry.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 282 / 427
				Validity Status	Rev. No. B	

Due to the distance from shore, there is not expected to be any recreational or traditional fishing in the Operational Area; nor are there any commercial shipping routes. There are no subsea cables in the Operational Area.

8.1.3.1 Commercial fisheries

Change to the functions, interests or activities of other marine users

A number of Commonwealth, WA and NT fishery management areas are located within the Operational Area; and an assessment was undertaken to identify potential interactions based on historic catch data and intensity, sourced from relevant datasets and for data periods. (Section 4.6.1). Fishing effort is low within the Operational Area.

The Open Access in the North Coast Fishery is the only WA-managed fishery active that is considered active within the Operational Area, with 60NM CAES block reporting six vessels for the Operational Area; and between <3-37 active vessels across the 2017-2022 seasons (DPIRD, 2023).

Four Northern Territory-managed fisheries are active in the Operational Area and have the potential to interact with equipment in-situ (Section 4.6.1):

- Northern Territory Aquarium Fishery: Hand-held equipment. Analysis of five years of NT fishing effort data (2017-2021) shows 1 licence operating in the Operational Area (NT GOV, 2021);
- Demersal Fishery: Line and fish-trap gear. Analysis of five years of NT fishing effort data (2017-2021) shows 3 licences operating in the Operational Area (NT GOV, 2021);
- Offshore Net and Line Fishery: Demersal/pelagic long-lines. Analysis of five years of NT fishing effort data (2017-2021) shows 1 licence within the Operational Area (NT GOV, 2021);
- Spanish Mackerel Fishery: Troll/floating long lines. Analysis of five years of NT fishing effort data (2017-2021) shows 1 licence within the Operational Area (NT GOV, 2021); and
- Note fishing tour operators are permitted to fish in Territory waters, and do not have management areas. Analysis of five years of NT fishing effort data (2017-2021) shows one licence within the Operational Area (NT GOV, 2021).

None of these Northern-Territory-managed fisheries use bottom trawling as fishing method, which excludes the snagging risk.

Of the Commonwealth-managed fisheries with designated management areas that overlap the Operational Area, none of these are considered active. Of these fisheries, only the Northern Prawn Fishery (NPF) has historical fishing effort that overlaps the EMBA only (not the Operational Area). The NPF is a trawl fishery; therefore, the wellheads may represent a trawl net snag hazard. However, the Operational Area does not fall within any effort fishing intensity area, as indicated through the Commonwealth Fishery Status Reports (Butler et al., 2023).

Eni consulted with the NPMI and WAFIC (as described in Section 5), and no concerns were raised regarding the physical presence of the wellhead or potential snag risk. The NPMI confirmed that NPF operators do not have any objection to the decommissioning of Petrel-3 and Petrel-4, and have no specific comments on the environmental plan, and confirmed there is no NPF fishing effort in the immediate vicinity of the wellheads. The NPMI's key concern was

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 283 / 427
				Validity Status	Rev. No. B	

around scheduling of activities to avoid vessel transit impacting fishing season; which is not relevant for the physical presence of the equipment in-situ.

For the Tern-1 Wellhead Abandonment EP (accepted by NOPSEMA in September 2021), Santos engaged with the Australian Marine College to undertake an assessment of the potential impacts of Tern-1 wellhead on the NPF in the region. Given the report is from 2021, Tern-1 is approximately 55 and 60 km from the Petrel-3 and Petrel-4 respectively, and they are of a similar vintage, the same report has been used to inform potential concerns of the NPF.

The study indicates that most trawling and harvesting occurs in the Gulf of Carpentaria, particularly during the tiger prawn season. Conversely, the westernmost part of the fishery, including the Joseph Bonaparte Gulf near the Operational Area, experiences significantly less fishing activity. This aligns with the 2023 Australian Fisheries Zone data, illustrated in Table 4-11. Due to strong ocean currents, remoteness, and considerable water depth, the study deems the Tern-1 wellhead location, representative of the Petrel-3 and Petrel-4 Operational Area, unsuitable for prawn trawling. Existing NPF prawn trawl equipment is limited to depths of less than 75m (AMC, 2021), rendering the area inaccessible for this fishing method.

The Joseph Bonaparte Gulf is primarily a banana prawn fishing ground. However, unlike the Operational Area, which is approximately 95m deep, banana prawns typically inhabit shallower waters. The common variety thrives in depths less than 45m, while the Indian white prawn is found between 45 - 85m (NPF25, 1994). Moreover, the Northern Prawn Fishery has experienced a significant decline in vessel numbers over the past four decades, from a peak of 292 licenced vessels in the 1980s to just 52 today. This reduction has curtailed exploratory fishing activities, leading to less frequent fishing in remote areas like the Joseph Bonaparte Gulf. This trend is projected to continue, with the potential for further decline as larger fishing companies consolidate the industry. Consequently, fishing efforts in the Gulf of Carpentaria may increase, while those in the Operational Area are likely to decrease (AMC, 2021). Although the wellhead is located within a trawlable area, based on this information, fishing effort in the vicinity of the Operational Area is likely to be low.

Regarding snagging risk, NPF vessels utilize echosounders and GPS plotters for navigation, enabling them to detect seabed obstacles like wellheads and plan routes accordingly (AMC, 2021). While the Operational Area is deep, the trawl gear is positioned far enough behind the vessel to allow for manoeuvrability in case of obstacles. Historical data indicates a low incidence of fishing vessel incidents involving offshore oil and gas infrastructure globally, with wellheads posing a significantly lower risk than other structures (Rouse et al., 2020).

While snagging incidents are rare, they can result in financial losses for commercial fishers due to lost fishing time or damage to and loss of equipment (Rouse et al., 2020). Historical data from the UK indicates that vessel damage or loss due to snagging occurred in less than 0.5% of cases between 1989 and 2016. Fatalities or injuries were even rarer, with only one such incident reported during this period (Rouse et al., 2020), representing 0.06% of all incidents.

Given the low fishing activity in the area, advanced vessel equipment, and the potential for future technological improvements, the risk of trawl net snagging is considered minimal. It is noted that the wells have been suspended since the 1980s (with locations shown on existing navigation charts), and as such the continued presence of the wellheads is not a new aspect for marine users. Therefore, the proposed activities are not expected to result in an impact to commercial operations (via loss of catches or damage to fishing equipment) from presence of wellheads on the seabed given the long-term presence of the wellheads.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 284 / 427
			Validity Status	Rev. No. B	

8.1.3.2 Defence

Change to the functions, interests and activities of other marine users

The Northern Australia Exercise Area military zone overlaps the Operational Area. This zone is mainly utilised for activities associated with border protection including surveillance, illegal immigration, and illegal fishing. This area is occasionally used for live firing military exercises.

The likelihood of disruption of military exercises due to the presence of the wellheads, TGB and PGB if left in-situ is minimal. The wellheads have a small profile of 2-3m in height, and approximately 1 meter in diameter, and their precise location is documented on nautical charts. The Petrel-3 and Petrel-4 wellheads have been in place since 1982 and 1988, respectively; and no impacts or concerns have been reported by any other marine user.

Consequently, it is unlikely that the presence of the wellheads will pose a challenge to future Defence activities in the region.

8.1.3.3 Offshore Industry

Change to the functions, interests or activities of other marine users

The presence of Petrel-3 and Petrel-4 wellheads on the seabed could potentially interfere with future offshore operations, such as the placement of a MODU or future infrastructure.

No CCS permits overlap with the NT/RL1 and WA-6-R permits, therefore direct interference with any future CCS activities is not expected. Eni is the titleholder of NT/RL1 and WA-6-R; and any future development within the title would be evaluated and undertaken by Eni.

The likelihood of disruption due to the presence of the wellheads, TGB and PGB if left in-situ is minimal. The wellheads have a small profile of 2-3m in height, and approximately 1 meter in diameter, and their precise location is documented on nautical charts. The Petrel-3 and Petrel-4 wellheads have been in place since 1982 and 1988, respectively; and no impacts or concerns have been reported by any other marine user.

Consequently, it is unlikely that the presence of the wellheads will pose a challenge to future offshore activities in the region.

8.1.3.4 Residual risk summary

The worst-case residual severity to other marine users from leaving the wellheads in situ is evaluated as Minor (2), given the low profile of the equipment, low fishing activity in the area, lack of bottom trawling, and no offshore industry activities permitted in the title areas except by Eni.

The likelihood of interaction with other marine users from leaving the wellhead in situ occurring as a result of the activities is considered Unlikely (B) due to the small footprint of the wellheads.

Therefore, the residual risk of the wellheads interacting with other marine users due to the petroleum activities is considered Low.

8.1.4 Environmental Performance Outcomes and Control Measures

EPOs relating to this event include:

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 285 / 427
			Validity Status	Rev. No.	
				B	

- Reduce impacts on other marine users through the provision of information to relevant stakeholders such that they are able to plan for their activities and avoid unexpected interference (EPO-10)

CMs relating to this risk include:

- Consultation with relevant persons (including notification requirements) (CM-07); and
- AHO Nautical Charts (CM-25).

EPSs and MC relating to the above are presented in Section 9.1.

8.1.5 As Low As Reasonably Practicable Demonstration

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
Eliminate	N/A	N/A	N/A
Substitute	N/A	N/A	N/A
Engineering	Full or partial removal	<p>Eni will undertake the pre-decommissioning inspection (Section 3.2.3) to assess well integrity, status of cleaning and modification, and to identify the appropriate MODU type. The outcomes of this inspection will inform final selection of the wellhead removal option. Leave in-situ is the most preferred decommissioning option based on the options evaluation undertaken in Table 3-8. Full or partial removal options were evaluated against the leave in-situ option. The leave in-situ option was ranked 'most preferred' for 6 of the 11 sub-criteria. The full and partial removal options was ranked 'most preferred' for only two of the 11 sub-criteria for ecological services, and residual risk to other marine users.</p> <p>The full or partial removal options are not preferred given the lower preference rankings in environment, technical feasibility, health and safety, and economic criteria.</p> <p>The potential risks to the environment, health and safety, challenges to technical feasibility and the cost of the full or partial removal options are considered disproportionately high to the low environmental benefits that full or partial removal of equipment would provide.</p> <p>Future fishing effort in the area is likely to be low as the larger fishing companies acquire available boat licences, leaving less capacity for exploratory fishing. Bottom trawling is not used in the Operational Area as a fishing method.</p> <p>Based on the low current and future likelihood of interactions between the wellheads and the NPF fishery and the environmental impacts, potential technical difficulties and costs associated with</p>	Optional

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 286 / 427
			Validity Status	Rev. No. B	

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
		removal, leaving the wellhead in situ is the preferred option. Given the wellhead is in an area that is not actively trawled, will be marked on navigational charts and the trawl vessels are equipped with navigational equipment such as echo sounders and GPS plotters the risk of snagging is low. No CCS permits overlap with the NT/RL1 and WA-6-R permits, therefore direct interference with any future CCS activities is not expected. Eni is the titleholder of NT/RL1 and WA-6-R; and any future development within the title would be evaluated and undertaken by Eni.	
Isolation	N/A	N/A	N/A
Administrative	AHO Nautical Charts	Both wellheads are charted on AHO nautical charts so that marine users are aware of its location, they can therefore avoid the wellhead if required thus reducing snag risk Marine users will not be excluded from the area.	✓ (CM-25)
	Consultation with relevant persons (refer Section 5)	Relevant persons consultation ensures marine users are aware of the wellheads potentially remaining in-situ. They have been in place since the 1980s without any reported issues. Enables identification of potential Sea Country protection or enhancement initiatives, and implementation where practicable.	✓ (CM-07)

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 287 / 427
			Validity Status	Rev. No.	
		B			

8.1.6 Acceptability Demonstration

Demonstration of acceptability	
Compliance with Legal Requirements, Laws and Standards	<p>N/A.</p> <p>Eni will not interfere with the rights of other marine users to a greater extent than is necessary for the reasonable exercise of right conferred by the titles granted, as per Section 280 of the OPGGS Act.</p> <p>Section 572(3) of the OPGGS Act allows for deviations to the base case should the alternative decommissioning approach deliver equal or better environmental and safety outcomes compared to complete removal. The pre-decommissioning inspection (Section 3.2.3) will assess well integrity, status of cleaning and modification, and identify the appropriate MODU type; and will inform final selection of the wellhead removal option.</p> <p>Leave in-situ is the most preferred decommissioning option based on the options evaluation undertaken in Section 3.6.4. Full or partial removal options were evaluated against the leave in-situ option; and the leave in-situ option was ranked 'most preferred' for 6 of the 11 sub-criteria. The residual risk of interaction with other marine users from equipment in-situ was evaluated as Low, in the event this option is selected.</p> <p>The physical presence of equipment in-situ is managed in accordance with the <i>Sea Dumping Act 1981</i>. Eni has reviewed the <i>Sea Dumping Act 1981</i> and engaged with DCCEEW and determined the temporary P&A activities for Petrel-3 predates the Act and therefore Petrel-3 equipment abandonment does not require a permit.</p> <p>However, temporary P&A activities for Petrel-4 were conducted after the Act was in place. If any equipment is left in-situ as a result of the Petrel-4 abandonment, a Sea Dumping permit will be required.</p>
Policy Compliance	<p>The management of physical presence of the petroleum activities is aligned with Eni policies and standards. The residual risk is Low, which is acceptable.</p> <p>The EPOs, CMs and EPSs that will be implemented are consistent with Eni internal requirements.</p>

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 288 / 427
				Validity Status	Rev. No. B	

Demonstration of acceptability

Social Acceptability

Eni consulted with the NPFI and WAFIC (as described in Section 5), and no concerns were raised regarding the physical presence of the wellhead or potential snag risk, if the wellheads are left in-situ. The NPFI confirmed that NPF operators do not have any objection to the decommissioning of Petrel-3 and Petrel-4, and confirmed there is no NPF fishing effort in the immediate vicinity of the wellheads.

During consultation, the Wilderness Society advised that they object to anything other than complete removal of the wellheads (Section 5). Eni confirmed that a pre-decommissioning inspection needs to be conducted to assess the integrity of the structures and come to a final decision on the end state of the infrastructure; and that the options will be evaluated considering impacts to the environment, cultural heritage and other marine users; and as per regulatory requirements. The options assessment undertaken in Section 3.6 demonstrates that the leave in-situ option is the most preferred decommissioning option, and was ranked 'most preferred' for 6 of the 11 sub-criteria. The full and partial removal options was ranked 'most preferred' for only two of the 11 sub-criteria for ecological services, and residual risk to other marine users. The full or partial removal options are not preferred given the lower preference rankings in environment, technical feasibility, health and safety, and economic criteria, as they introduce new risks to the environment, including:

- Release of fluid within the annulus
- Rupture of cement/barite bags serving as ballast for the TGB
- Generation of underwater noise emissions, GHGs, waste.

Given ongoing risks from the leave in-situ option from the physical presence of equipment in-situ are assessed as Low and demonstrated to be acceptable, in the event this option is selected following the pre-decommissioning inspection.

During consultation, DPIRD advised that given the uncertainty of the overall integrity of the structures drilled in the 1980s, they request Eni considers risks associated with any partial removal options carefully, including in relation to the future risk of any structures or equipment left behind in the environment (Section 5). As described above, Eni confirms that the pre-decommissioning inspection will assess well integrity, status of cleaning and modification, and inform final selection of the wellhead removal option. The options assessment undertaken in Section 3.6 considers all impacts and risks against environmental, technical, health and safety, social and economic criteria. This assessment identified leave in-situ is the most preferred decommissioning option. Given ongoing risks from the leave in-situ option from the physical presence of equipment in-situ are assessed as Low and demonstrated to be acceptable, in the event this option is selected following the pre-decommissioning inspection.

An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 289 / 427
				Validity Status	Rev. No. B	

Demonstration of acceptability	
Area Sensitivity/ Biodiversity	<p>The Operational Area overlaps the management area of the NPF, however there has not been any historical fishing effort recorded based on data from 2010-2022 (Summerson, 2024).</p> <p>The Operational Area also overlaps with the following active fisheries:</p> <ul style="list-style-type: none"> • WA Open Access in the North Coast Fishery (six vessels) • NT Aquarium Fishery (1 licence) • NT Demersal Fishery (3 licences) • NT Offshore Net and Line Fishery (1 licence) • NT Spanish Mackerel Fishery (1 licence) • NT fishing tour operator (1 licence). <p>The NPF is a trawl fishery, however the Operational Area does not fall within any effort fishing intensity area (Butler et al., 2023). None of the Northern-Territory-managed fisheries use bottom trawling as fishing method, which excludes the snagging risk.</p> <p>No CCS permits overlap with the NT/RL1 and WA-6-R permits, therefore direct interference with any future CCS activities is not expected. Eni is the titleholder of NT/RL1 and WA-6-R; and any future development within the title would be evaluated and undertaken by Eni.</p> <p>Physical presence of infrastructure has not been identified as a threat in any recovery plans or conservation advice for threatened and migratory species.</p>
ESD Principles	<p>The petroleum activities are consistent with the principles of ESD because:</p> <ul style="list-style-type: none"> • The nature and scale of potential impacts from physical presence is not inconsistent with the integration principle. • The precautionary principle was applied and the analysis of available fishing data and usage information was supplemented with consultation where knowledge gaps were identified.
ALARP	The residual risk has been demonstrated to be ALARP.

Notwithstanding the position of the Wilderness Society, given the low volume of other marine users within the Operational Area, the small physical profile of wellheads and equipment if left in-situ, and no concerns raised by commercial fisheries regarding snagging, the potential impacts are Slight (1). The residual risk is considered Low, which is acceptable in accordance with Eni's acceptability criteria (Table 6-5). Potential impact associated with interactions with other marine users is considered acceptable and ALARP.

8.2 Marine Fauna Interaction

8.2.1 Summary of Environmental Impact

Hazard	Marine Fauna Interaction		
	Frequency	Severity	Risk
Inherent Risk	B	1	L
Residual Risk	B	1	L

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 290 / 427
			Validity Status	Rev. No. B	

8.2.2 Description of Hazard

Marine fauna interaction may occur as a result of:

- MODU operations;
- Vessel operations; and
- Helicopter operations.

There is the potential for the MODU, vessels, ROVs or helicopters to interact with marine fauna, via strike or collision.

The monitoring and pre-decommissioning vessel-based campaigns have an expected duration of 14 to 40 days. The As-left survey has a duration of 2 days per well, but this campaign is likely to occur at the same time as the decommissioning campaign. The decommissioning campaign using the MODU has an expected duration of up to 60 days (30 days per well).

8.2.2.1 MODU operations

Within the Operational Area, the MODU will move into position above the first wellhead; and then move to the second wellhead (depending on whether there are one or 2 campaigns). It will then de-mobilise from the Operational Area once the activities are complete. The movement of the MODU will be very slow.

While the MODU is stationary, it is not considered a collision risk.

8.2.2.2 Vessel operations

During the monitoring and pre-decommissioning activities, only one vessel will be present at any one time.

During the decommissioning activities, up to 3 support vessels will be present in the Operational Area. Support vessels will be operating in the immediate vicinity of the MODU and as a result will be moving slowly.

8.2.2.3 Helicopter operations

Helicopters will be employed during the decommissioning campaign with an estimated frequency of once per day.

During landing and take-off there is potential for helicopter blades to strike birds.

8.2.3 Potential Environmental Impact

Interaction with marine fauna has the potential to result in:

- Injury/mortality of marine fauna.

Potential receptors that may be impacted are:

- Fish;
- Marine reptiles;
- Marine mammals; and
- Seabirds and shorebirds.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 291 / 427
				Validity Status	Rev. No. B	

8.2.3.1 Fish, marine reptiles and marine mammals

Injury / mortality of marine fauna

Megafauna comprising marine mammals, turtles and whale sharks are the species most at risk from this potential impact. As identified in Section 4, several marine mammals (whales and dolphins), turtle species and whale sharks listed as threatened and/or migratory and/or a listed marine species under the EPBC Act have the potential to occur within the Operational Area. Most of these species are expected to transit through, rather than aggregate within the Operational Area. There were no sightings of marine fauna in the Operational Area during the 2022 and 2023 survey campaigns. The Operational Area is located within a foraging BIA for green and Olive Ridley turtles, but the Operational Area is in water deeper than foraging depths for these species.

There is limited data regarding strikes to fauna such as turtles and whale sharks, possibly due to lack of collisions being noticed and lack of reporting. However, marks observed on animals show that strikes have occurred (Peel et al., 2016). Cetaceans provide a representative case to enable an evaluation of consequence to be undertaken.

Cetaceans are naturally inquisitive marine mammals that are often attracted to offshore vessels and facilities. The reaction of whales to the approach of a vessel is quite variable. Some species remain motionless when in the vicinity of a vessel, while others are curious and often approach ships that have stopped or are slow moving (Richardson et al., 1995). They generally do not approach, and sometimes avoid, faster-moving ships (Richardson et al., 1995).

Collisions between larger vessels with reduced manoeuvrability and large, slow-moving cetaceans occur more frequently where high vessel traffic and cetacean habitat occurs. Larger vessels with reduced manoeuvrability moving in excess of 10 knots may cause fatal or severe injuries to cetaceans, with the most severe injuries caused by vessels travelling faster than 14 knots (Laist et al., 2001). Vessels typically used to undertake petroleum activities do not have the same limitations on manoeuvrability and would not be moving at these speeds when conducting activities inside the Operational Area. While the MODU has reduced manoeuvrability, it will be moving at speeds well below 10 knots.

The probability and consequence of a vessel strike between a vessel and cetacean is proportionate to the speed at which the vessel is travelling. The chance of a vessel strike causing a lethal injury to a large whale will increase from 20% at 8.6 knots to 80% at 15 knots (Vanderlaan and Taggart, 2007). Similarly, an increase in vessel numbers increases the likelihood of strike (Silber and Bettridge, 2012).

Peel et al., (2016) reviewed vessel strike data (1997-2015) for marine species in Australian waters and identified the following:

- Whales including the humpback, pygmy blue, Antarctic blue, southern right, dwarf minke, Antarctic minke, fin, bryde's, pygmy right, sperm, pygmy sperm and pilot species were identified as having interacted with vessels. The humpback whale exhibited the highest incidence of interaction followed by the southern right whale. A number of these species may migrate through the waters of the Operational Area; and
- Dolphins including the Australian humpback, common bottlenose, indo-pacific bottlenose and Risso's dolphin species were also identified as interacting with vessels. The common bottlenose dolphin exhibited the highest incidence of interaction. A number of these species may reside in or pass through the waters of the Operational Area.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 292 / 427
			Validity Status	Rev. No. B	

The decommissioning activities represent the longest duration of fauna exposure to MODU, vessel and ROV collision. This campaign may be up to 60 days, during which time, the MODU and up to 3 vessels will be present.

If a fauna strike occurred and resulted in death, it is not expected that it would have a detrimental effect on the overall population of the species or ecosystem function.

8.2.3.2 Seabirds and Shorebirds

The movement and operation of helicopters, has the potential to disturb, and potentially cause injury or death to birds due to collision. However, due to the location of the activity offshore and the lack of BIAs or habitats critical to the survival of species overlapping with the Operational Area, large numbers of birds are not expected.

It is considered unlikely that a collision between a helicopter and seabird will occur.

8.2.3.3 Residual risk summary

The worst-case residual severity to marine fauna from interaction with the MODU and vessels is evaluated as Slight (1), given a lethal interaction will not impact species population or ecosystem function.

The likelihood of injury or mortality of marine fauna from interaction with the MODU and vessels occurring as a result of the activities is considered Unlikely (B) due to the slow speeds of vessels in the Operational Area and the low numbers of fauna expected to be present.

Therefore, the residual risk of marine fauna interaction due to the petroleum activities is considered Low.

8.2.4 Environmental Performance Outcomes and Control Measures

EPOs relating to this event include:

- No injury or mortality to EPBC Act listed fauna during operational activities (EPO-05).

CMs relating to this risk include:

- Regulations and measures for interacting with marine fauna (CM-15).

EPSs and MC relating to the above are presented in Section 9.1.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 293 / 427
				Validity Status	Rev. No. B	

8.2.5 As Low As Reasonably Practicable Demonstration

Demonstration of ALARP			
Type	Control/management	Evaluation	Adoption?
Eliminate	Eliminate vessel use	Would eliminate risk. However, vessel movements cannot be eliminated as the vessels are required to support the MODU.	*
Substitute	N/A	N/A	N/A
Engineering	N/A	N/A	N/A
Isolation	N/A	N/A	N/A
Administrative	Regulations and measures for interacting with marine fauna (e.g., EPBC Regulations 8 (Part 8))	Minor cost in complying. Reduces risk of physical and behavioural impacts to marine fauna. EPBC Regulations include restrictions such as vessel speed and direction when in proximity to marine fauna and are based on legislated requirements.	✓ (CM-15)
	Use of a dedicated marine fauna observer	Improves ability to spot and identify marine fauna at risk of collision. However, costs involved with implementing a dedicated marine fauna observer is grossly disproportional to the environmental benefit, given low risk.	*
	Use of spotter planes to identify marine fauna in the region	Improves ability to spot and identify marine fauna at risk of collision. However, costs involved with implementing a dedicated marine fauna observer is grossly disproportional to the environmental benefit, given low risk.	*
	Plan vessel movements during periods when sensitive marine fauna are not present	May reduce the risk of vessel strikes during sensitive periods when more fauna may be present. However, limiting the vessel use to avoid sensitive periods would introduce other safety and environmental hazards, such as higher probability of inclement weather. In addition, there is a low likelihood of encountering marine mammals in the Operational Area.	*

8.2.6 Acceptability Demonstration

Demonstration of acceptability	
Compliance with Legal Requirements, Laws and Standards	<p>Vessels and helicopters will comply with EPBC Regulations 2000 – Part 8 (Interacting with cetaceans) and the Australian National Guidelines for Whale and Dolphin Watching 2017 (DEE, 2017b). Specifically:</p> <ul style="list-style-type: none"> Vessels will comply with EPBC Regulations 2000 – Part 8 Division 8.1 (Interacting with cetaceans) <p>Helicopters will comply with EPBC Regulations 2000 – Part 8 Division 8.3 (Regulation 8.07).</p>

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 294 / 427
				Validity Status	Rev. No.	
				B		

Demonstration of acceptability	
Policy Compliance	<p>The management of marine fauna interaction is aligned with Eni policies and standards. The residual risk is Low, which is acceptable.</p> <p>The EPOs, CMs and EPSs that will be implemented are consistent with Eni internal requirements.</p>
Social Acceptability	<p>To date, no relevant person concerns have been raised regarding marine fauna interaction (refer Section 5).</p> <p>An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.</p>
Area Sensitivity/ Biodiversity	<p>The Operational Area does not intersect with any State or Territory marine protected areas, AMPs, wetlands of international or national importance, World, National or Commonwealth heritage properties or places, or KEFs.</p> <p>Megafauna comprising marine mammals, turtles and whale sharks are the species most at risk from strike or collision. There are foraging BIAs for the Olive Ridley turtle and green turtle overlapping the Operational Area. No other BIAs or habitat critical for EPBC listed species overlap the Operational Area.</p> <p>Eni has considered information contained in relevant recovery plans and approved conservation advice for marine fauna that identify collision or strike with MODU, vessels, ROVs or helicopters as a threat (as listed in Table 2-3). The petroleum activities are consistent with the objectives and actions of the plans identified below through adoption of EPO-10 and CM-15 (Section 8.2.4).</p> <p>This includes:</p> <p>Conservation Advice</p> <ul style="list-style-type: none"> • Approved Conservation Advice for Dermochelys coriacea (Leatherback Turtle). • Conservation Advice for Balaenoptera borealis (sei whale) (TSSC, 2015). • Conservation Advice for Balaenoptera physalus (fin whale) (TSSC, 2015a). • Approved Conservation Advice for Rhincodon typus (Whale Shark) (TSSC, 2015b). <p>Recovery/Management Plans</p> <p>The petroleum activity is consistent with the objectives and actions of the plans identified below through adoption of EPO-10 and the control measures outlined in Section 8.2.4:</p> <ul style="list-style-type: none"> • Wildlife Conservation Plan for Migratory Shorebirds (Commonwealth of Australia, 2015a) identifies aircraft disturbance/strike as a threat to seabirds. The petroleum activities are consistent with the objective of this plan to ensure seabirds and their habitat are protected and managed. • Wildlife Conservation Plan for Seabirds (Commonwealth of Australia, 2020) identifies aircrafts as a threat under anthropogenic disturbance. The petroleum activities are consistent with the objective of this plan to ensure anthropogenic threats are minimised or where possible, eliminated. • Recovery plan for marine turtles in Australia 2017–2027 (DEE, 2017) identifies vessel interaction as a threat to marine turtles. The petroleum activities are consistent with Interim Objective 3 of this plan (anthropogenic threats are demonstrably minimised). • Conservation Management Plan for the Blue Whale 2015–2025 (DoE, 2015) identifies vessel collision as a threat. The petroleum activities are consistent with Action Area A4: Minimising vessel collisions. • National Strategy for Mitigating Vessel Strike of Marine Megafauna 2017 (DEE, 2017a). The petroleum activities are consistent with this plan.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 295 / 427
				Validity Status	Rev. No. B	

Demonstration of acceptability	
	<p>Recovery Plans/Conservation Advice for other EPBC Act listed threatened and migratory species that may occur in the Operational Area do not identify collision or strike with MODU, vessels, ROVs or helicopters as a key threat or have explicit relevant objectives or management actions.</p> <p>The control measures outlined in Section 8.2.4 are consistent with the objectives and actions in these publications. The petroleum activities are not inconsistent with the objectives and actions in the relevant recovery plans/conservation advice.</p>
ESD Principles	<p>The risks of this unplanned event are consistent with the principles of ESD because:</p> <ul style="list-style-type: none"> The impacts associated with unplanned interactions with marine fauna have the potential to occur to a small number of an overall population and population-level impacts will not occur so the event does not result in 'threats of serious or irreversible harm', as detailed within the EPBC Act, and biodiversity and ecological integrity will be maintained. Conservative assumptions on scale of impact have been applied, including a conservative assumption on marine fauna presence. The health, diversity and productivity of the environment will be maintained, including for future generations.
ALARP	The residual risk has been demonstrated to be ALARP.

Given the short duration of the activities, low number and speed of vessels and MODU and lack of marine fauna aggregation areas in the Operational Area, the residual risk is considered Low, which is acceptable in accordance with Eni's acceptability criteria (Table 6-5). Potential impacts are acceptable and ALARP.

8.3 Introduction of Marine Pest Species

8.3.1 Summary of Environmental Impact

Hazard	Introduction of Marine Pest Species		
	Frequency	Severity	Risk
Inherent Risk	C	3	MH
Residual Risk	A	3	L

8.3.2 Description of Hazard

Marine pest species or invasive marine species (IMS) are marine plants, animals and algae that have been introduced into a region that is beyond their natural range but that have the ability to survive and possibly thrive (DAFF, 2021).

Introduction of marine pest species may occur as a result of:

- MODU operations; and
- Vessel operations.

The movement of vessels and mobile facilities into, out of, and within Commonwealth waters is a potential mechanism for the transfer of IMS into new areas. The establishment of IMS in Commonwealth waters may result in significant impacts to the marine environment, potentially compromising the viability of socio-economic commodities such as aquaculture, fishing and tourism as well as potentially widespread ecological impacts (NOPSEMA, 2020).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 296 / 427
			Validity Status	Rev. No.	
	B				

Historically, once IMS are established, they are very difficult to control and fully eradicate (NOPSEMA, 2020).

In order for an IMS to be successfully introduced, it must colonise and establish on a vector (e.g. vessel,) in a donor region (e.g. port); then survive on the vector during transit; then colonise the receiving environment (e.g. by reproduction or dislodgement) and then successfully establish a viable new local population.

To become established within the Operational Area, IMS need suitable habitat and conditions, which includes water temperature, water depth and presence of predators. Hard substrates such as rocks or subsea infrastructure in shallow waters (where photosynthesis can occur) are suitable habitats. The Operational Area is ~95m deep, has strong currents and soft sediment on the sea floor, which are not conditions considered suitable for the establishment of IMS.

8.3.2.1 Vessel and MODU operations

There are two main vector pathways for the introduction of IMS into an area, which are:

- Biofouling on MODU or vessel hulls; and
- Discharge of vessel ballast water.

Biofouling

Biofouling is the growth of marine organisms found on the hulls and niche areas of vessels and underwater surfaces of offshore facilities, including mobile offshore drilling units (MODUs). Areas with high water movement, such as propellers, tend to have lower levels of biofouling compared to areas subject to low water movement, such as stationary vessels or slow-moving vessels. Biofouling is one of the most common ways that IMS are transferred within the marine environment (NOPSEMA, 2020). Research indicates that biofouling has been responsible for more foreign marine introductions than ballast water (DAFF, 2021). The potential biofouling risk presented by vessels will relate to:

- The length of time that these vessels have already been operating in Australian waters or, if they have been operating outside Australian waters;
- The locations of the operations they have been undertaking;
- The length of time spent at these locations; and
- Whether the vessels have undergone hull inspections, cleaning and application of new anti-foulant coating prior to returning to operate in Australia.

Ballast water

Ballast water is water adjusted on vessels to help manage weight and stability and improve manoeuvrability. During the uptake of ballast water from the surrounding environment in an international or domestic location, it is possible for a vessel to take in water that contains planktonic biota. This biota may then be discharged at the vessel's new location during ballast water exchange.

It is estimated that up to 30% of IMS in Australia have arrived via ballast water (DAWE, 2020). All saltwater from ports or coastal waters outside Australia's territorial seas presents a high risk of introducing foreign marine pests into Australia (AQIS, 2011).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 297 / 427
			Validity Status	Rev. No. B	

Highly disturbed shallow-water marine ecosystems are more prone to marine pests colonisation, and the establishment of marine pests depends on the distance to shore (Paulay et al., 2002). Modelling of ballast water by the Bureau of Rural Sciences (BRS) has shown that the risk of IMS colonisation decreases with distance to shore with estimates as follows (BRS, 2007):

- 33% chance of colonisation at 3nm;
- 8% chance at 12nm; and
- 2% chance at 24nm.

The Operational Area is 81nm (150km) from the nearest shore.

Since the introduction of mandatory ballast water requirements (DAWE, 2020), where ballast water must be exchanged outside territorial sea (12nm off the Australian coast, including islands), the risk of IMS from international shipping has been greatly reduced. Domestic ships that discharge or exchange water at any Australian port has variable risk ratings depending on where the ballast water was last acquired.

Summary

No ballast water discharge or exchange is expected to occur within the Operational Area. Vessels will not anchor in the Operational Area.

The monitoring and pre-decommissioning vessel-based campaigns have an expected duration of 14 to 40 days. The As-left survey has a duration of 2 days per well, but this campaign is likely to occur at the same time as the decommissioning campaign. The decommissioning campaign using the MODU has an expected duration of up to 60 days (30 days per well).

8.3.3 Potential Environmental Impact

An introduction of marine pest species has the potential to result in:

- Displacement of native marine species
- Change to the functions, interests and activities of other marine users.

Potential receptors that may be impacted are:

- Benthic habitats and communities
- Commercial fisheries.

There are no marine protected areas or KEFs within the Operational Area.

8.3.3.1 Benthic habitats and communities

Displacement of native marine species

The establishment of IMS may result in direct and indirect impact to benthic habitats, including:

- Competition with native species for food;
- Competition with native species for hard substrate; and
- Predation of native species.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 298 / 427
				Validity Status	Rev. No.	
					B	

IMS are likely to have little or no natural competition or predators, thus potentially outcompeting native species for food or space, preying on native species, or changing the nature of the environment. It is estimated that Australia has more than 250 established marine pests, and it is estimated that approximately one in six introduced marine species becomes pests (DoE, 2015).

If left unmanaged, IMS can result in irreversible impact to the marine environment. IMS often significantly change the environment in which they are introduced (Bax et al., 2003). This change may include predation pressure on native organisms, smothering habitats or providing new structural habitat (Bax et al., 2003).

The establishment of an IMS can have a variety of effects on the environment that receives it and might possibly affect the ecological dynamics of a region. Because of the complexity of ecosystems and the number of interactions between and among biotic and abiotic components, it is impossible to anticipate how a particular species would interact with a foreign environment.

Marine pests have the potential to alter ecosystem functioning by:

- competing for natural resources;
- reducing natural resource availability;
- predation;
- altering natural cycling processes;
- habitat segregation;
- virus spread;
- changing water quality;
- generating toxic chemicals;
- disturbing, injuring, or killing important ecosystem organisms (ecosystem engineers and fundamental species);
- changing surrounding ecosystems;
- changing conservation values of protected areas; and
- creating new environments.

IMS are difficult to eliminate once they are established (Hewitt et al., 2002). Eradication may be effective if detected early, but it will most likely be costly, disruptive, and, subject to the method used, damaging to other local marine species. Highly disturbed nearshore settings (such as marinas) have been found to be more vulnerable to colonisation than offshore ecosystems featuring intense dilutions and high degree of dispersal (Paulay et al., 2002).

The benthic habitat within the Operational Area is comprised of sand, coarse shell fragments and silt. Sediments in the Petrel field were dominated by sand with similar gravel, silt and clay proportions (ERM, 2011). No threatened ecological communities or protected areas are present in the Operational Area. Previous surveys have not identified any sensitive seabed habitats. IMS are generally unable to establish in deep-water ecosystems, most likely due to a lack of light or suitable habitat to sustain their growth and survival.

Successful colonisation in the recipient region would be difficult given the nature of the benthic habitats within the Operational Area and lack of light due to deep waters (i.e. >95m). The offshore open waters of the Operational Area are therefore not conducive to the settlement

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 299 / 427
				Validity Status	Rev. No. B	

and establishment of IMS. It is unlikely that any marine organisms would become established at the field.

If a marine pest was introduced, and if it did colonise an area, it is expected that any colony would remain fragmented and isolated, and only within the vicinity of the wells. Similarly, it would not be likely to propagate to nearshore environments, and protected marine areas present in the wider region.

8.3.3.2 Commercial fisheries

Change to the functions, interests and activities of other marine users

The establishment of IMS may impact commercial fisheries directly or indirectly. It may cause changes to the abundance of prey for fish species and distribution or behaviour of fish species, subsequently resulting in impacts to the activities of commercial fisheries. Between 10% and 40% of Australia's fishing sector may be at risk from marine pest intrusion, which can reduce fishing areas and aquaculture stock (Dommissie and Hough, 2004).

The establishment of IMS may result in increased abundance of prey for fish species targeted by commercial fisheries, although this is unlikely to result in any detectable change in the abundance of targeted fish or commercial by-catch.

A number of Commonwealth, WA and NT fishery management areas are located within the Operational Area, and an assessment was undertaken to identify potential interactions based on historic catch data and intensity, sourced from relevant datasets and for data periods. (Section 4.6.1); however only a total of 6 are active. Fishing effort is low within the Operational Area.

The Open Access in the North Coast Fishery is the only WA-managed fishery active that is considered active within the Operational Area, with 60NM CAES block reporting six vessels for the Operational Area; and between <3-37 active vessels across the 2017-2022 seasons (DPIRD, 2023).

Four Northern Territory-managed fisheries are active in the Operational Area and have the potential to interact with equipment in-situ (Section 4.6.1):

- Northern Territory Aquarium Fishery: Hand-held equipment. Analysis of five years of NT fishing effort data (2017-2021) shows 1 licence operating in the Operational Area (NT GOV, 2021);
- Demersal Fishery: Line and fish-trap gear. Analysis of five years of NT fishing effort data (2017-2021) shows 3 licences operating in the Operational Area (NT GOV, 2021);
- Offshore Net and Line Fishery: Demersal/pelagic long-lines. Analysis of five years of NT fishing effort data (2017-2021) shows 1 licence within the Operational Area (NT GOV, 2021);
- Spanish Mackerel Fishery: Troll/floating long lines. Analysis of five years of NT fishing effort data (2017-2021) shows 1 licence within the Operational Area (NT GOV, 2021); and
- Note fishing tour operators are permitted to fish in Territory waters, and do not have management areas. Analysis of five years of NT fishing effort data (2017-2021) shows one licence within the Operational Area (NT GOV, 2021).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 300 / 427
			Validity Status	Rev. No. B	

Most of the IMS identified as being most likely to establish in Australia inhabit shallow waters with hard substrate (Marine Pest Sectoral Committee, 2018). Therefore, it is unlikely that IMS would establish within the Operational Area and impact nearby fisheries.

8.3.3.3 Residual risk summary

The worst-case residual severity to benthic habitats and communities, and commercial fisheries from the introduction of marine pest species is evaluated as Local (3), given the potential for marine pests to disrupt ecosystems.

The likelihood of ecosystem disruption from the introduction of marine pest species occurring as a result of the activities is considered Rare (A) due to the sparse nature of the benthic habitats in the Operational Area, the open ocean environment and the lack of light resulting from the water depth.

Therefore, the residual risk of the introduction of marine pest species due to the petroleum activities is considered Low.

8.3.4 Environmental Performance Outcomes and Control Measures

The EPO relating to this event is:

- No introduction of invasive marine species (EPO-11).

The CMs relating to this risk include:

- Implementation of an IMS risk assessment tool (CM-26);
- Ballast water management (CM-27); and
- Biofouling management (CM-28).

EPSs and MC relating to the above are presented in Section 9.1.

8.3.5 As Low As Reasonably Practicable Demonstration

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
Eliminate	Do not use a MODU or vessels	The use of a MODU and vessels is unavoidable; therefore, the risk of exotic species being transported in ballast water or hull fouling cannot be completely eliminated.	×
	Do not exchange ballast	Exchange of ballast water is a safety-critical activity for marine operations and elimination of exchange could put the vessel at risk.	×
Substitute	Contract only local MODUs and vessels	Contract MODU only operating in local, State or national waters to reduce potential for IMS; however, may present significant costs and delay in activity schedule.	×

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 301 / 427
				Validity Status	Rev. No. B	

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
	Alternative ballast system which does not require a discharge	Using an alternative ballast system to avoid uptake/discharge of water would reduce the requirement for ballast water exchange; however, sourcing such vessels may present significant costs and delay in activity scheduling and ballast water exchange is standard practice on many vessels.	*
Engineering	Heat treatment of ballast water to eliminate IMS	Heat treatment will reduce potential for IMS to establish by eliminating individuals present in ballast water itself. However, discharge of water at a much higher temperature than the surrounding marine environment would likely result in impact to local water quality and impact to marine species.	*
Isolation	N/A	N/A	N/A
Administrative	Dry-docking before entering field to clean vessel and equipment and remove biofouling	Would minimise risk of IMS; however, presents significant cost and would lead to scheduling delays. Would be considered only to reduce IMS risk level.	*
	Implementation of an IMS risk assessment tool	Ensures the MODU and vessels are assessed to low IMS risk before mobilising for the activity. Minimal cost involved in demonstrating the MODU and vessels are of 'low risk' of introducing IMS through completion of an IMS risk assessment. IMS management measures will be applied to vessels according to risk to minimise the likelihood of IMS being introduced, such as the treatment of internal systems, IMS inspections or cleaning.	✓ (CM-26)
	Ballast water management	Pursuant to the <i>Biosecurity Act 2015</i> , support vessels and MODU carrying ballast water and engaged in international voyages shall manage ballast water in accordance with a Ballast Water Management Plan. Reduces IMS risk and minimal cost to manage. Vessels should already have a plan in place to meet vessel legislative and Eni vessel contracting requirements.	✓ (CM-27)
	Biofouling management	The likelihood of introducing IMS from vessels and MODU is reduced due to anti foulant systems in accordance with IMO Guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species (IMO, 2023). Includes marine growth prevention systems on the seawater intakes and ballast pumps.	✓ (CM-28)

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 302 / 427
			Validity Status	Rev. No. B	

8.3.6 Acceptability Demonstration

Demonstration of acceptability	
Compliance with Legal Requirements, Laws and Standards	<p>The risk of introducing IMS will be managed in accordance with:</p> <ul style="list-style-type: none"> • Australian Ballast Water Requirements (DAWE, 2020) • Offshore Installations – Biosecurity Guide (DAFF, 2023) • IMO’s Guidelines for the Control and Management of Ships’ Biofouling to Minimise the Transfer of Invasive Aquatic Species (IMO, 2023) • Biosecurity Act 2015 • Fish Resources Management Regulations 1995 (WA) • National biofouling management guidelines for the petroleum production and exploration industry (Marine Pest Sectoral Committee, 2018) • Australian Biofouling Management Requirements (DAFF, 2023) • Protection of the Sea (Harmful Antifouling Systems) Act 2006 • WA DPIRD Biofouling and Biosecurity Policy.
Policy Compliance	<p>The management of IMS is aligned with Eni policies and standards. The residual risk is Low, which is acceptable.</p> <p>The EPOs, CMs and EPSs that will be implemented are consistent with Eni internal requirements.</p>
Social Acceptability	<p>DPIRD raised concerns about marine pests or diseases entering WA waters as a result of vessel activity (Section 5). Pest management of vessels has been addressed though CM-26, CM-27 and CM-28.</p> <p>An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.</p>
Area Sensitivity/ Biodiversity	<p>The Operational Area does not intersect with any State or Territory marine protected areas, AMPs, wetlands of international or national importance, World, National or Commonwealth heritage properties or places, or KEFs.</p> <p>The main risks associated with the introduction of marine pest species are the displacement of native species or interference with ecosystem processes in other ways (such as through predation). Provided the biosecurity controls are implemented during the activities, the risk of introduction of marine pest species is deemed low.</p> <p>IMS has not been identified as a threat in any recovery plans or conservation advice for Threatened and Migratory species. However, Eni has considered information contained in relevant recovery plans and approved conservation advice for habitat modification (which could occur as a result of IMS establishing) (listed in Table 2-2 or Table 2-3). The petroleum activities are not inconsistent with the objectives and actions detailed in the recovery plans and approved conservation advice.</p>
ESD Principles	<p>The residual risk impact from this event is not inconsistent with the principles of ESD because:</p> <ul style="list-style-type: none"> • While the nature and scale of impacts have the potential to result in lasting change to benthic community dynamics, the controls that will be implemented reduce the risk to an acceptable level • Conservative assumptions have been applied to the impact assessment, including assuming conditions in the Operational Area are conducive for IMS to establish and that vessels mobilised to the Operational Area are a vector for IMS.
ALARP	The residual risk has been demonstrated to be ALARP.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 303 / 427
			Validity Status	Rev. No.	
	B				

Given the short duration of the activities, the water depths and the lack of hard substrates in the Operational Area, and distance from shore, the potential impacts associated with the unplanned introduction of IMS are considered to be Local. The residual risk is considered Low, which is acceptable in accordance with Eni's acceptability criteria (Table 6-5). Potential impacts associated with the unplanned introduction of IMS are acceptable and ALARP.

8.4 Accidental Release – Waste and Solid Objects

8.4.1 Summary of Environmental Impact

Hazard	Accidental Release – Waste and Solid Objects		
	Frequency	Severity	Risk
Inherent Risk	B	1	L
Residual Risk	A	1	L

8.4.2 Description of Hazard

Accidental release of waste or solid objects to the marine environment may occur as a result of:

- Establishment of secondary well control;
- Wellhead removal;
- MODU operations; and
- Vessel operations.

8.4.2.1 Establishment of secondary well control

To establish secondary well control, 4 gravity-based winches will be lowered to the seabed. The total footprint of each winch is ~20.6m². In the case where the seabed is not suited to the winches, 4 suction cans will be fixed to the seafloor, each with a footprint of ~28.3m².

During installation and recovery, there is potential for these items to be dropped to the seabed.

8.4.2.2 Wellhead removal

During retrieval activities, there is potential for the items being lifted from the seabed to be dropped. The items that may be lifted are:

- Wellhead, permanent guide base (PGB) and guideposts; and
- Temporary guide base (TGB).

The footprint of both the PGB and TGB is 30m².

Retrieval will also likely involve a subsea basket. The basket is lowered to and lifted from the seabed and has a footprint of 30m².

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 304 / 427
			Validity Status	Rev. No. B	

8.4.2.3 MODU and vessel operations

The handling and storage of materials and waste on board the vessels and MODU generates the potential for accidental over-boarding of hazardous/non-hazardous materials and waste.

Solid waste materials with the potential to be accidentally lost to the marine environment include:

- Non-hazardous solid wastes, such as paper, plastics, scrap steel, rope and glass;
- Hazardous solid wastes, such as paints, hydrocarbon-contaminated materials, batteries, fluorescent tubes, aerosol cans and medical wastes; and
- Equipment and materials, such as hard hats and tools or supplies backloaded to support vessels.

Non-hazardous, hazardous and smaller items may be accidentally lost from vessels, as a result of human error, incorrect or inappropriate waste storage, mechanical failure or breakdown of equipment, or dropped objects. Based on industry experience, the most common solid material accidentally lost includes articles of personal protective equipment, such as hard hats or gloves, and small tools or equipment that may be dropped by vessel personnel.

The monitoring and pre-decommissioning vessel-based campaigns have an expected duration of 14 to 40 days. The As-left survey has a duration of 2 days per well, but this campaign is likely to occur at the same time as the decommissioning campaign. The decommissioning campaign using the MODU has an expected duration of up to 60 days (30 days per well).

8.4.3 Potential Environmental Impact

The accidental release of waste or solid objects may result in:

- Change in habitat;
- Change in water quality; and
- Injury / mortality of marine fauna.

Potential receptors that may be impacted are:

- Benthic habitat and communities;
- Marine fauna (birds, fish, marine mammals and marine turtles).

There are no marine protected areas or KEFs within the Operational Area.

8.4.3.1 Benthic habitats and communities

Change in habitat

Benthic ecosystems may be temporarily and locally disturbed by objects lost overboard during the petroleum activities in the Operational Area. The area of potential seabed disturbance due to release of a heavier solid would be restricted to the Operational Area.

The largest item with potential to drop to the seabed would be one of the items being lifted or lowered during the decommissioning campaign. The largest items are the PGB, TGB and subsea basket, each with a footprint of 30m². The frequency of dropped objects from a crane

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 305 / 427
				Validity Status	Rev. No. B	

has been calculated by Eni as 1.6×10^{-5} per lift (Kent, 2023). This equates to 1.6 dropped objects per 100,000 lifts, making it rare.

While soft sediment benthic habitats will not be destroyed, disturbance of the communities on and within the sediment (in other words, the epifauna and infauna) will occur in the event of a dropped object. Depressions may remain on the seabed for some time after removal of the dropped object as they gradually infill over time. The seafloor of this bioregion is strongly affected by cyclonic storms, long-period swells and large internal tides, which can resuspend sediments within the water column and move sediment across the seafloor. In this context, any potential sediment movement caused by the event is likely to have minimal impacts.

As described in Section 4.3.6, the benthic habitat within the Petrel field is characterised by primarily sand, coarse shell fragments and silt; with infauna assemblages and sparse coverage of sessile epibenthic organisms. The habitat type in the Operational Area is widely distributed and well represented in the region (the wider Sahul Shelf). Consequently, the potential risk of alteration of benthic habitats and associated communities from accidental release of waste is considered minor given the short duration and limited size of the Operational Area.

8.4.3.2 Marine fauna

Change in water quality

Water quality will temporarily change due to the constituents of accidentally lost hazardous material leaching into the marine environment. The level of impact to water quality depends on the nature of the hazardous materials lost. Typical examples of potential dropped objects are paint cans and oily rags, which are likely to have residual volumes (less than 1m^3) of hazardous material (i.e., paint or oil). Due to wave action and metocean currents, minor releases of residual hazardous material will rapidly disperse and dilute close to the release location. This results in temporary and highly localised changes to the water quality. Non-hazardous material is inert; however, may result in impact to marine fauna from ingestion or entanglement, which has been assessed further below.

Impacts from a change in water quality to marine fauna, such as fish, marine mammals, and marine reptiles, are not anticipated, given the localised nature of the water quality change and the transient nature of these species.

Injury or mortality of marine fauna

An accidental loss of solid material may impact marine fauna through ingestion of, and entanglement with, waste. Marine fauna that ingest or become entangled in solid materials – particularly floating, non-biodegradable marine debris such as plastic – may be subject to physical harm that limits or inhibits physiological processes, potentially resulting in fauna fatality. Loss of plastics is of particular concern to seabirds and marine turtles. Wilcox et al., (2015) note foraging seabirds ingesting plastics may be subject to gut obstruction or reduced stomach volume, resulting in a loss of fitness. Turtles have been known to ingest plastics when mistaking it for food sources, such as jellyfish (Mrosovsky et al., 2009). It is recognised that fishing gear (e.g., ropes and nets made from synthetic fibres), balloons and plastic bags are the biggest entanglement threat to marine fauna, and plastic bags and utensils are the biggest ingestion risk for seabirds, turtles and marine mammals (Wilcox et al., 2016, cited in Commonwealth of Australia, 2018).

If plastic waste is accidentally released, it is likely to be buoyant and may therefore move beyond the Operational Area. The most common solid material accidentally lost includes articles of personal protective equipment, such as hard hats or gloves, and small tools or

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 306 / 427
				Validity Status	Rev. No.	
	B					

equipment that may be dropped by vessel personnel. Such items would not be a threat to marine fauna in the way that plastic bags and fishing gear are.

The Operational Area does not overlap any BIAs for marine mammals; and no marine mammals were sighted in the Operational Area during two last survey campaigns in 2022 and 2023. While marine mammals may be present within the Operational Area, it is not anticipated that species will be present in significant numbers and, if present, would only be in the vicinity for short periods of time; for example, transiting through the area. Potential impacts to marine mammals from either entangling or ingesting lost plastics, will be limited to a small number of individuals. Any impact is anticipated to be minor and will not result in impacts at a population level.

The Operational Area overlaps the foraging BIAs for Green and Olive Ridley turtles; however, no marine turtles were sighted in the Operational Area during two last survey campaigns in 2022 and 2023. However, it is expected that these species will be transiting/foraging for short periods only and are not likely to be resident or occur in the area in significant numbers.

8.4.3.3 Residual risk summary

The worst-case residual severity to benthic habitat and marine fauna from accidental release of waste and solid objects is evaluated as Slight (1), given the localised extent of potential impact, the ability of benthic habitats to recover and the limited number of individuals that would be impacted.

The likelihood of a change in habitat or mortality of marine fauna from accidental release of waste and solid objects occurring as a result of the activities is considered Rare (A) due to the low probability of a dropped object during lifting and the low numbers of marine fauna in the Operational Area.

Therefore, the residual risk of accidental release of waste and solid objects due to the petroleum activities is considered Low.

8.4.4 Environmental Performance Outcomes and Control Measures

EPOs relating to this event include:

- No injury or mortality to EPBC Act listed fauna during operational activities (EPO-05); and
- No unplanned objects, emissions or discharges to sea or air (EPO-12).

CMs relating to this risk include:

- Lifting Operations Standard (ENI HSE ST 007) (CM-05);
- Vessels and MODU comply with Marine Order 95 (Marine pollution prevention – garbage) (CM-18);
- Procedures to reduce the potential for loss of non-hazardous and hazardous waste and dropped objects (CM-29);
- Dropped objects to be retrieved where possible (CM-30); and
- Hazardous chemical management procedures (CM-31).

EPSs and MC relating to the above are presented in Section 9.1.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 307 / 427
			Validity Status	Rev. No. B	

8.4.5 As Low As Reasonably Practicable Demonstration

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
Eliminate	Eliminate production of non-hazardous and hazardous waste	Eliminates the risk of releasing non-hazardous solids to the marine environment; however, eliminating the use of consumable products is not possible due to operational requirements. Waste will therefore be generated.	*
	Eliminate lifting operations	Lifting operations are required for the decommissioning campaign.	*
Substitute	N/A	N/A	N/A
Engineering	N/A	N/A	N/A
Isolation	Hazardous and non-hazardous processes (waste segregated in accordance with Marine Order 95)	Securely segregating and isolating the hazardous and non-hazardous waste on the MODU and support vessels, in accordance with Marine Order 95, will reduce the likelihood of it being lost to the marine environment. Minor cost involved in segregating the hazardous and non-hazardous waste.	✓ (CM-31)
Administrative	Lifting Operations Standard (ENI-HSE-ST-007)	Details processes to reduce risk of dropped objects, including: <ul style="list-style-type: none"> • Competency of persons undertaking lift • Planning and preparation process for undertaking lifts. Reducing the risk of dropped object outweighs the personnel cost associated with implementing standard.	✓ (CM-05)
	Dropped objects to be retrieved where possible	Retrieving dropped objects where possible reduces the likelihood of the objects either impacting benthic habitat in the longer-term; or being ingested by marine fauna.	✓ (CM-30)

8.4.6 Acceptability Demonstration

Demonstration of acceptability	
Compliance with Legal Requirements, Laws and Standards	Waste management complies with the requirements of Marine Order 95 (particularly Regulations 6.1 and 6.4).
Policy Compliance	The management of waste and solid objects risks is aligned with Eni policies and standards. The residual risk is Low, which is acceptable. The EPOs, CMs and EPSs that will be implemented are consistent with Eni internal requirements.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 308 / 427
				Validity Status	Rev. No. B	

Demonstration of acceptability	
Social Acceptability	<p>To date, no relevant person concerns have been raised regarding unplanned loss of solid wastes (refer Section 5).</p> <p>An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.</p>
Area Sensitivity/ Biodiversity	<p>The Operational Area does not intersect with any State or Territory marine protected areas, AMPs, wetlands of international or national importance, World, National or Commonwealth heritage properties or places, or KEFs.</p> <p>The Operational Area does not overlap any BIAs for marine mammal species. Foraging BIAs for the green turtle and Olive Ridley turtle overlap the Operational Area. Other marine fauna are likely to be transient in the Operational Area. The discharge extent for all accidental release of waste and solid objects is anticipated to be localised.</p> <p>The benthic environment within the Operational Area is characterised by sand (with gravel, silt and clay) and sparse sessile epibenthic organisms (Section 4.3.6). Impacts to the benthic environment from dropped objects will be highly localised.</p> <p>Eni has considered information contained in relevant recovery plans and approved conservation advice for EPBC Act listed species that identify pollution, marine debris, and habitat degradation or modification as a threat (as listed in Table 2-3). This includes:</p> <p>Conservation Advice:</p> <ul style="list-style-type: none"> • Approved Conservation Advice for Balaenoptera borealis (Sei Whale) • Approved Conservation Advice for Balaenoptera physalus (Fin Whale) • Approved Conservation Advice for Green Sawfish • Approved Conservation Advice for Pristis pristis (Large Tooth Sawfish) • Approved Conservation Advice for Glyphis garricki (Northern River Shark) • Approved Conservation Advice for Rhincodon typus (Whale Shark). <p>Recovery/Management Plans</p> <p>The petroleum activity is consistent with the objectives and actions of the plans identified below through adoption of EPO-10 and EPO-12 and the control measures outlined in Section 8.4.4:</p> <ul style="list-style-type: none"> • Conservation Management Plan for the Blue Whale 2015–2025 (DoE, 2015) identifies habitat modification, including acute and chronic chemical discharge, as a threat. There are no BIAs for the blue whale overlapping the Operational Area. There are no explicit relevant management actions in this plan. The petroleum activity is consistent with the long-term recovery objective to 'minimise anthropogenic threats to allow the conservation status of the blue whale to improve so that it can be removed from the threatened species list under the EPBC Act' through the adoption of the EPOs. • Recovery plan for Marine Turtles in Australia (DEE, 2017) identifies acute chemical and terrestrial discharge as a threat. Foraging BIAs for the green turtle and Olive Ridley turtle overlap the Operational Area. Action Area A4 to minimise chemical and terrestrial discharge is met through the adoption of the EPOs. • Sawfish and River Shark Multispecies Recovery Plan (Commonwealth of Australia, 2015) lists habitat degradation or modification as a threat. No habitat critical or BIAs have been identified for sawfish or river sharks within the Operational Area. The petroleum activity is consistent with Objective 5 of this plan to 'reduce and, where possible, eliminate adverse

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 309 / 427
			Validity Status	Rev. No. B	

Demonstration of acceptability	
	<p>impacts of habitat degradation and modification on sawfish and river shark species', through adoption of the EPOs.</p> <ul style="list-style-type: none"> Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) (2013) identifies habitat modification as a threat. No habitat critical or BIAs have been identified for white sharks within the Operational Area. The petroleum activity is consistent with the objective of this plan to ensure anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future through adoption of the EPOs. Recovery Plan for the Grey Nurse Shark (<i>Carcharias taurus</i>) (DoE, 2014a) identifies pollution as a threat. No habitat critical or BIAs for the grey nurse shark have been identified in the Operational Area. The petroleum activity is consistent with the objective of this plan to ensure anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future, through the adoption of the EPOs. Threat abatement plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (Commonwealth of Australia, 2018). <p>Recovery Plans/Conservation Advice for other EPBC Act listed threatened and migratory species that may occur in the Operational Area do not identify pollution, marine debris, and habitat degradation or modification as a key threat or have explicit relevant objectives or management actions related to these threats.</p> <p>The control measures outlined in Section 8.4.5 are consistent with the objectives and actions in these publications. The petroleum activities are not inconsistent with the objectives and actions in the relevant recovery plans/conservation advice.</p>
ESD Principles	<p>The risks of this unplanned event are consistent with the principles of ESD because:</p> <ul style="list-style-type: none"> The impacts associated with unplanned loss of waste and solid material do not result in 'threats of serious or irreversible harm' as detailed within the EPBC Act and biodiversity and ecological integrity will be maintained Conservative assumptions on scale of impact have been applied The health, diversity and productivity of the environment will be maintained, including for future generations.
ALARP	The residual risk has been demonstrated to be ALARP.

Given the short duration of the activities, the minor quantities of material that could be lost to the marine environment and the limited footprint of a potential dropped object (<30m²), residual risk is considered Low, which is acceptable in accordance with Eni's acceptability criteria (Table 6.5). Potential impacts are acceptable and ALARP.

8.5 Accidental Release - Minor Loss of Containment

8.5.1 Summary of Environmental Impact

Hazard	Accidental Release – Minor Loss of Containment		
	Frequency	Severity	Risk
Inherent Risk	B	1	L

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 310 / 427
			Validity Status	Rev. No.	
	B				

Residual Risk	B	1	L
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8.5.2 Description of Hazard

Minor loss of containment may occur as a result of:

- MODU operations;
- Vessel operations; and
- ROV operations.

8.5.2.1 Vessel, MODU and ROV operations

Minor volumes of hydrocarbons or other chemicals (e.g. hydraulic fluids, deck spill or MDO) may accidentally be discharged to the environment as a result of:

- ROV failure (including oil seal, hydraulic system hose and quick disconnect system failures);
- Loss of primary containment (drums, tanks, Intermediate Bulk Containers (IBC), etc) due to handling;
- Storage and dropped objects (e.g. swinging load during ROV lifting activities); and
- Vessel pipework failure or rupture, hydraulic hose failure, inadequate bunding and lifting.

The types of fluids stored on the MODU and vessels include fuel, lubricating fluids, hydraulic fluids, and cooling fluids. Leaks could occur due to a failure of a mechanical component, fitting, or hose.

Based on the activities described in this EP, the following potential minor release scenarios were identified:

- Using, handling, and transferring hazardous materials and chemicals on board (1m^3), the maximum credible volume associated with a single-point failure was estimated to be $\sim 1\text{m}^3$ based on the loss of an entire IBC due to rupture while handling; and
- Hydraulic line failure from equipment (1m^3).

Note that a loss of MDO during refuelling is captured in Section 8.6.

The monitoring and pre-decommissioning vessel-based campaigns have an expected duration of 14 to 40 days. The As-left survey has a duration of 2 days per well, but this campaign is likely to occur at the same time as the decommissioning campaign. The decommissioning campaign using the MODU has an expected duration of up to 60 days (30 days per well).

8.5.3 Potential Environmental Impact

Minor loss of containment has the potential to result in:

- Change in water quality.

Potential receptors for this impact are:

- Water quality.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 311 / 427
			Validity Status	Rev. No. B	

There are no marine protected areas or KEFs within the Operational Area.

If individual marine fauna pass through the release plume, any impacts are expected to be highly localised. Given the small volumes, mobility of fauna and short exposure time due to rapid dilution through wave and current activity, chronic impacts to marine fauna are not expected and therefore have not been assessed further.

8.5.3.1 Water quality

Change in water quality

The volume of any hydrocarbons or chemicals accidentally released to the environment would be small, up to 1m³.

The hydraulic fluid typically used during vessel operations is a water-based hydraulic fluid, reported to have a low toxicity to the marine environment (classified under the OCNS as Class D). It has been used widely in marine environments worldwide with no observed environmental effect. All operational chemicals will be selected to reduce environmental impacts to ALARP as per Section 10.14.

Hydraulic fluids are medium oils of light to moderate viscosity and have a relatively rapid spreading rate and, like MDO, will dissipate quickly, particularly in high sea states. More detail on impacts specific to a spill of MDO and its behaviour in the marine environment is presented in Section 8.6.

Water quality will temporarily reduce due to the constituents of chemicals and hydrocarbon releasing into the marine environment, some of which will be toxic. The level of impact to water quality depends on the nature and volume of the chemical lost, which are typically low volumes.

Hydrocarbons and chemicals accidentally released into the marine environment through minor onboard spills and leaks directed through deck drainage or from a release of hydraulic oil from an ROV umbilical would disperse quickly in waters within the vicinity of the Operational Area. Due to wave action and metocean currents and the low volumes potentially lost, minor accidental releases will rapidly disperse and dilute local to the release site, resulting in temporary (hours) and highly localised reduction in water quality. No long-term reduction in water quality is expected.

It is anticipated that the minor volume of hydrocarbons or chemicals would spread and dilute quickly, with a notable decrease in discharge concentrations soon after the release site. Changes in the water quality outside the Operational Area is considered highly unlikely.

8.5.3.2 Residual risk summary

The worst-case residual severity to water quality from a minor loss of containment is evaluated as Slight (1), as this type of event may result in localised, short-term effects that are expected to recover rapidly.

The likelihood of a minor loss of containment occurring as a result of the activities is considered Unlikely (B). Therefore, the residual risk of a minor loss of containment due to the petroleum activities is considered Low.

8.5.4 Environmental Performance Outcomes and Control Measures

EPOs relating to this event include:

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 312 / 427
			Validity Status	Rev. No. B	

- No unplanned objects, emissions or discharges to sea or air (EPO-12).

CMs relating to this risk include:

- PMS (CM-14);
- Chemical risk assessment process (CM-21);
- Procedures to reduce the potential for loss of non-hazardous and hazardous waste and dropped objects (CM-29);
- Hazardous chemical management procedures (CM-31);
- Maritime Dangerous Goods Code (CM-32);
- NOPSEMA-accepted OPEP and OSMP (CM-33);
- Vessel SOPEP/emergency management plan (CM-34);
- Bulk solid transfer procedure (CM-35); and
- ROV inspection and maintenance procedures as per maintenance regime (CM-36)

EPSs and MC relating to the above are presented in Section 9.1.

8.5.5 As Low As Reasonable Practicable Demonstration

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
Eliminate	Eliminate hydraulic systems and ROVs	Would eliminate the environmental risk associated with minor spill and leaks. The requirement for hydraulic systems and their hoses and connections cannot be eliminated and are required for operations.	*
Substitute	N/A	N/A	N/A
Engineering	N/A	N/A	N/A
Isolation	N/A	N/A	N/A
Administrative	On-board spill response kits on vessels.	Environmental benefit outweighs minor costs in implementing and locating spill response kits in proximity to hydrocarbon storage/bunkering areas on vessels and MODU. Contained within the vessel SOPEP/emergency management plan.	✓ (CM-34)
	SOPEP, which contains plans to prevent spills reaching the marine environment	Environmental benefit outweighs minor costs in implementing and testing the vessel spill response plan (SOPEP), which contains plans to prevent spills reaching the marine environment. The SOPEP is a requirement under MARPOL Annex 1 requirements (all vessels over 400 gross tonnages have SOPEP or Shipboard Marine Pollution Emergency Plans outlining options to control the source of a hydrocarbon spill).	✓ (CM-34)

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 313 / 427
				Validity Status	Rev. No. B	

Demonstration of ALARP			
Type	Control/ management	Evaluation	Adoption?
	Maritime Dangerous Goods Code	Dangerous goods managed in accordance with International Maritime Dangerous Goods Code (IMDG Code) to reduce the risk of an environmental incident, such as an accidental release to sea or unintended chemical reaction. Minimal cost to implement.	✓ (CM-32)
	Chemical management procedures	Reduces the risk of spills and leaks to sea by controlling the storage, handling and clean-up of both hazardous and non-hazardous chemicals. Personnel cost associated with implementation of procedures and permanent or temporary storage areas; inspections and training.	✓ (CM-31)
	NOPSEMA-accepted OPEP and OSMP	Implements response plan to deal with an unplanned hydrocarbon spill quickly and efficiently in order to reduce impacts to the marine environment. Costs associated with ongoing spill response preparedness and training of personnel.	✓ (CM-33)
	PMS	Proper maintenance of equipment (e.g. hydraulic hoses, secondary containment) will prevent accidental release. Low cost of maintaining equipment.	✓ (CM-14)

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 314 / 427
			Validity Status	Rev. No. B	

8.5.6 Acceptability Demonstration

Demonstration of acceptability	
Compliance with Legal Requirements, Laws and Standards	Chemical management complies with the requirements of the Maritime Dangerous Goods Code, the <i>Navigation Act 2012</i> , and requirements of the NOPSEMA-accepted OPEP and OSMP.
Policy Compliance	The management of accidental/minor spills is aligned with Eni policies and standards. The residual risk is Low, which is acceptable. The EPOs, CMs and EPSs that will be implemented are consistent with Eni internal requirements.
Social Acceptability	To date, no relevant person concerns have been raised regarding accidental/minor spills (refer Section 5). An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.
Area Sensitivity/ Biodiversity	The Operational Area does not intersect with any State or Territory marine protected areas, AMPs, wetlands of international or national importance, World, National or Commonwealth heritage properties or places, or KEFs. Impacts to the marine environment from a minor loss of containment will be highly localised. There are no expected impacts to marine fauna; and there are no relevant recovery plans or approved conservation advices.
ESD Principles	The risk of this unplanned event is consistent with the principles of ESD because: <ul style="list-style-type: none"> • The impacts associated with unplanned minor loss/spills do not result in 'threats of serious or irreversible harm', as detailed within the EPBC Act, and biodiversity and ecological integrity will be maintained • Conservative assumptions on scale of impact have been applied • The health, diversity and productivity of the environment will be maintained, including for future generations.
ALARP	The residual risk has been demonstrated to be ALARP.

Given the relatively short duration of the petroleum activities and low volumes of chemical or hydrocarbons that may be accidentally released to the environment, the residual risk is considered Low, which is acceptable in accordance with Eni's acceptability criteria (Table 6.5). Potential impacts are acceptable and ALARP.

8.6 Accidental Release – MDO (Vessel Collision)

8.6.1 Summary of Environmental Risk Assessment

Hazard	Accidental Release – MDO (Vessel Collision)		
	Frequency	Severity	Risk
Inherent Risk	B	1	L
Residual Risk	A	3	L

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 315 / 427
			Validity Status	Rev. No. B	

8.6.2 Description of Hazard

An accidental release of Marine Diesel Oil (MDO) may occur during refuelling operations or due to collision between a vessel and a third-party vessel, or the MODU, that results in tank rupture and a loss of MDO into the marine environment. This can occur during:

- MODU operations; and
- Vessel operations.

8.6.2.1 Vessel and MODU Operations

Vessel collisions typically occurs as a result of:

- Mechanical failure/loss of Dynamic Positioning (DP) system;
- Navigational error; and/or
- Foundering due to weather.

Vessel operations have an expected duration of 14 to 40 days depending on the activity (see Section 3.1.3).

The MODU operations have an expected duration of 30 to 60 days depending on success of the first campaign (see Section 3.1.3).

A release of MDO during refuelling operations was identified to be up to 50m³ within the Operational Area.

Therefore, the most credible, worst-case, scenario identified for the activities covered by this EP was a surface spill of 300m³ MDO following a vessel collision rupturing the largest fuel tank of the vessel.

8.6.2.2 Spill Modelling

To understand the potential consequences of a MDO spill and the response preparedness required, stochastic modelling was undertaken (RPS, 2024). Model inputs, parameters, and predetermined concentration and exposure assessment thresholds are summarised in Table 8-1.

The spill modelling was carried out using a purpose-developed oil spill trajectory and fates model, SIMAP (Spill Impact Mapping Analysis Program). This model is designed to simulate the transport and weathering processes that affect the outcomes of hydrocarbon spills to the sea, accounting for the specific oil type, spill scenario, and prevailing wind and current circulation patterns (RPS, 2023).

SIMAP includes algorithms to account for both physical transport and weathering processes. The latter are important for accounting for the partitioning of the spilled mass over time between the water surface (surface slick), water column (entrained oil and dissolved compounds), atmosphere (evaporated compounds) and land (stranded oil). The model also accounts for the interaction between weathering and transport processes.

The hydrocarbon spill model, the method and analysis applied herein use modelling algorithms which have been peer reviewed and published in international journals.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 316 / 427
				Validity Status	Rev. No. B	

Table 8-1: Summary of the Vessel Collision MDO Spill Modelling Inputs

Parameter	Details	
Scenario	An instantaneous surface spill of marine diesel oil (MDO) of 300m ³ from a vessel incident	
Location	Petrel-4	
	Latitude:	Longitude:
	12° 53' 13.194" S	128° 29' 45.557" E
Hydrocarbon type	Marine Diesel Oil	
Total spill volume	300m ³	
Number of spill simulations	300 total (100 per season)	
Period of the year (season)	Summer (January, February, December) Transitional (March, September to November) Winter (April to August)	
Release Depth	Surface	
Release Duration	Instantaneous	
Simulation length	30 days	
Surface oil concentration thresholds (g/m ²)*	1 (low); 10 (moderate); 50 (high)	
Shoreline oil accumulation thresholds (g/m ²)*	10 (low); 100 (moderate); 1,000 (high)	
Dissolved hydrocarbon concentrations (ppb)*	10 (low); 50 (moderate); 400 (high)	
Entrained hydrocarbon concentrations (ppb)*	10 (low); 100 (high)	

*Thresholds based on NOPSEMA (2019); see Section 8.6.2.5

8.6.2.3 Marine Diesel Oil

Marine Diesel Oil (MDO) is categorised as a group II oil (light-persistent) according to the International Tankers Owners Pollution Federation (ITOPF 2020) and US EPA/USCG classifications. The classification is based on the specific gravity of hydrocarbons in combination with relevant boiling point ranges. It is important to note that some of the heavier components contained in the MDO (i.e. low volatile and persistent portions) will have a strong tendency to physically entrain into the upper water column in the presence of moderate winds (i.e. >12 knots) and breaking waves but can re-float to the surface if these energies abate. The low viscosity (14cP) indicates that this oil will spread quickly when released and will form a thin to low thickness film on the sea surface, increasing the rate of evaporation.

Generally, about 4% of the MDO mass should evaporate within the first 12 hours (Boiling point (BP) < 180°C); a further 32.0% should evaporate within the first 24 hours (180°C < BP < 265°C); and an additional 54.0% should evaporate over several days (265°C < BP < 380°C). Approximately 10% (by mass) of MDO will not evaporate, though will decay slowly over time.

Table 8-2 details the physical characteristics and boiling point ranges for the MDO.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 317 / 427
			Validity Status	Rev. No. B	

Table 8-2: Physical Properties for the MDO

Properties		Hydrocarbon	
Hydrocarbon Type		Marine Diesel (MDO)	
API		27.0	
Density (kg/m ³)		890.0 (at 25°C)	
Dynamic viscosity (cP)		14.0 (at 25°C)	
Pour point (°C)		-9	
Hydrocarbon property category		Group II	
Hydrocarbon property classification		Light persistent	
Hydrocarbon Component		Boiling point (°C)	% of Total
Volatiles	Non- persistent	<180	4.0
Semi-volatiles		180-265	32.0
Low volatiles		265-380	54.0
Residual	Persistent	>380	10.0

8.6.2.4 Weathering and Fate

A series of weathering tests were conducted to illustrate the potential behaviour following a 50m³ instantaneous surface release of MDO. The tests included a model under calm wind conditions (5 knots) and under variable weather conditions (2-24 knots), assuming seasonal water temperature (27°C) and ambient tidal and drift currents. The first case is indicative of the potential weathering rates under calm conditions that would not generate entrainment, while the second case would be more representative of the moderate winds experienced over the region.

The mass balance forecast for the constant wind case (Figure 8-1) shows that 36.1% of the diesel is predicted to evaporate within 24 hours. The remaining MDO on the water surface will weather at a slower rate and be subject to more gradual decay through biological and photochemical processes.

In the variable wind speeds test (Figure 8-2), characterized by stronger average winds and breaking waves, there is an increased entrainment of MDO into the water column. Approximately 24 hours into the spill, the forecast indicates that 80.5% of the MDO will have entrained, with an additional 15.0% expected to have evaporated. Hence, only a <1% of floating oil remains on the water surface. The low volatile and residual compounds are anticipated to entrain beneath the surface under conditions generating wind waves (winds approximately >6m/s).

While the MDO is entrained, it is forecast to decay at a higher rate of 3% per day or 21% after 7 days, attributed to biological and photochemical degradation. This is in contrast to a rate of 0.14% per day and a total of ~1% after 7 days for the constant-wind case. Given the proportion of entrained MDO and its tendency to remain mixed in the water column, the remaining hydrocarbons are expected to undergo decay over several weeks.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 318 / 427
			Validity Status	Rev. No. B	

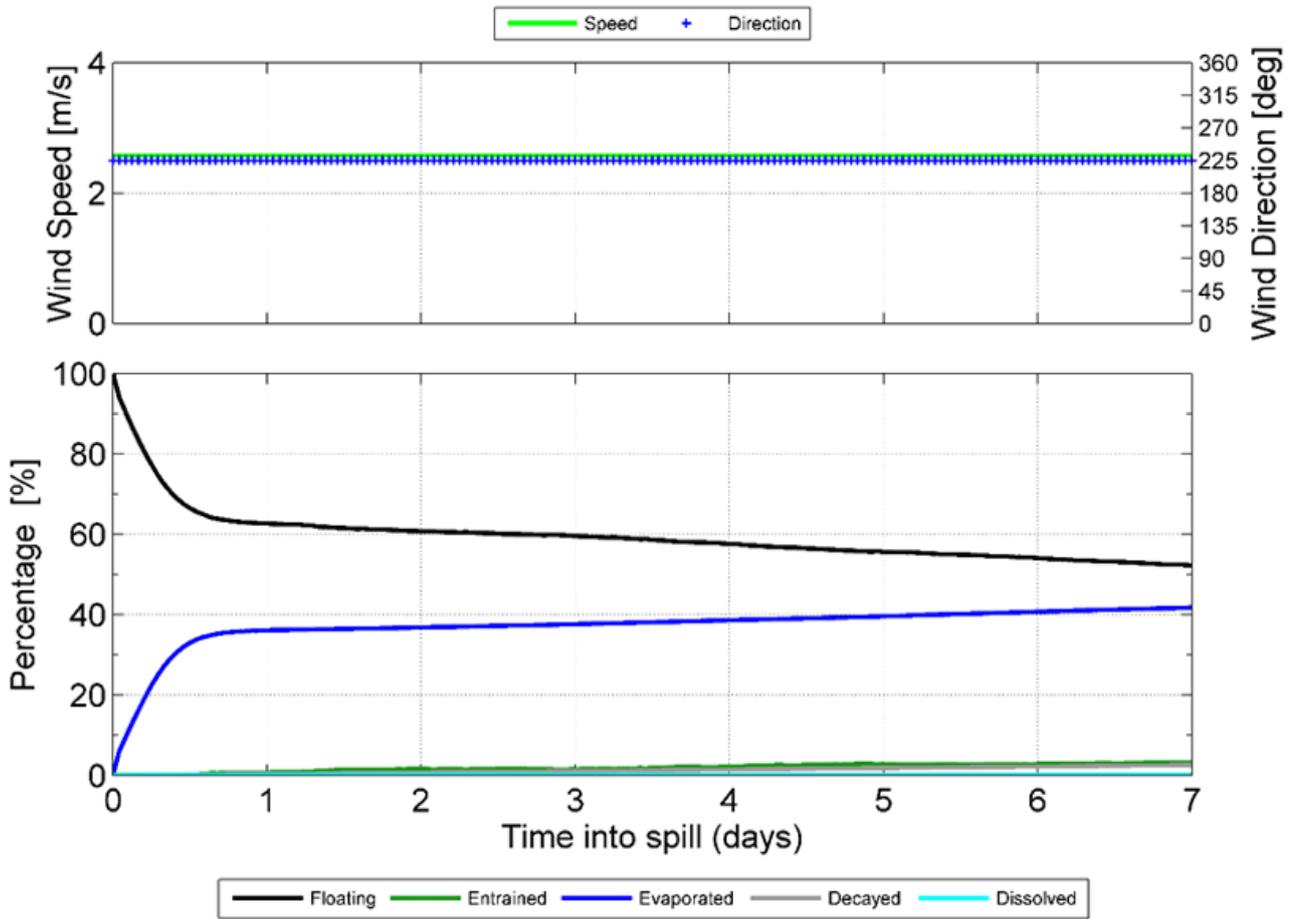


Figure 8-1: Mass balance plot for an instantaneous 50m³ surface release of MDO subjected to a constant 5 knot (2.6m/s) wind, currents and 27°C water temperature (RPS 2024).

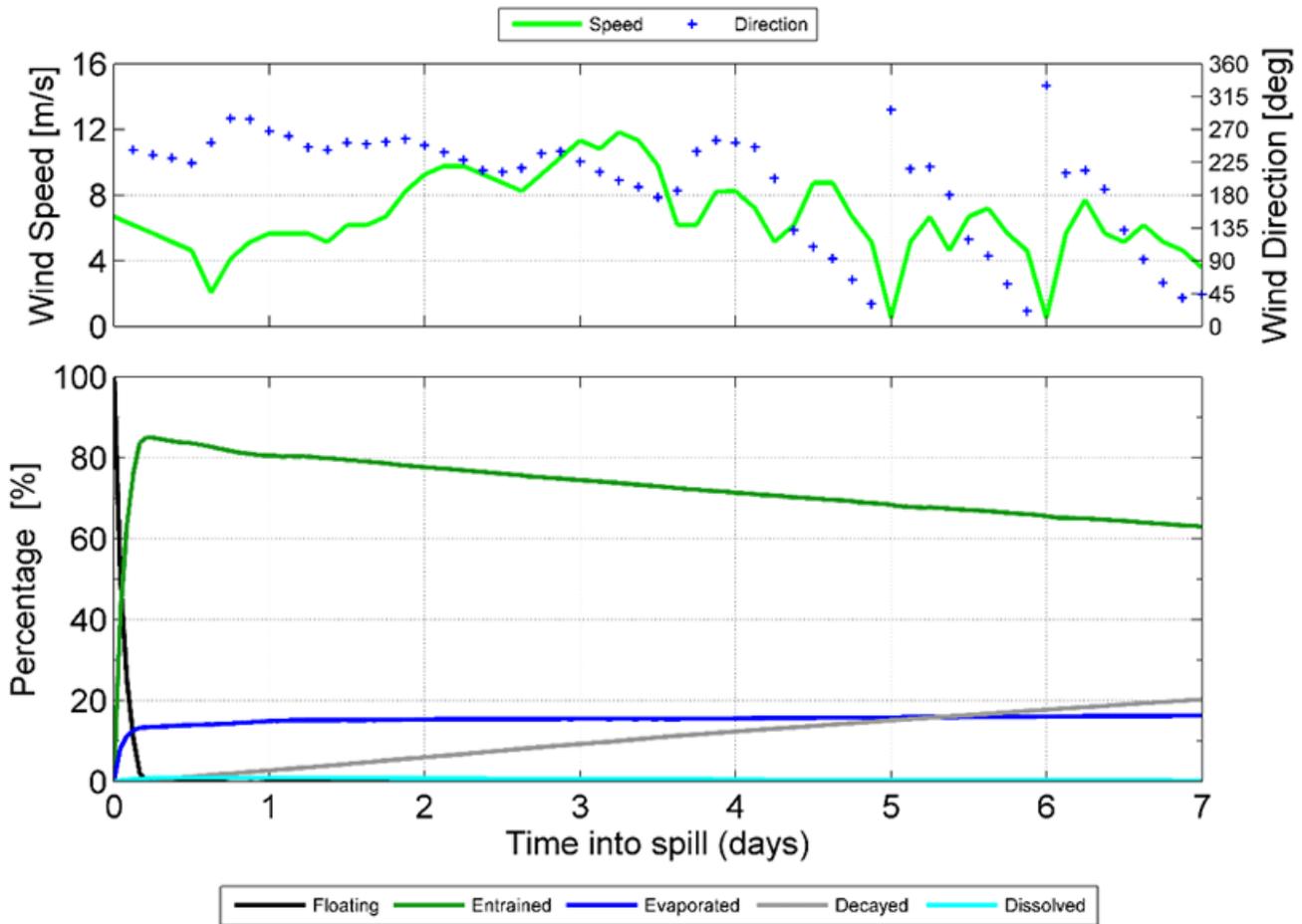


Figure 8-2: Mass balance plot for an instantaneous 50m³ surface release of MDO subjected to variable wind speeds (1 – 12m/s or 2 to 24 knots), currents and 27°C water temperature (RPS 2024).

8.6.2.5 Exposure Thresholds

The SIMAP model tracks oil concentrations to very low levels, therefore it is important to define meaningful threshold concentrations for the recording of contact by oil components and determining the probability of exposure at a location (calculated from the number of replicate simulations in which this contact occurred). The thresholds presented for this EP are based on those outlined by NOPSEMA in the Oil Spill Modelling Bulletin (NOPSEMA, 2019), which are summarised in Table 8-3. Their relationship to exposure for the sea surface, shoreline, and water column (entrained and dissolved hydrocarbons) are discussed below.

Table 8-3: Hydrocarbon exposure thresholds (NOPSEMA, 2019)

Exposure level	Threshold	Description
Floating oil		
Low	1g/m ²	Approximates range of socio-economic effects and establishes planning area for scientific monitoring
Moderate	10g/m ²	Approximates lower limit for harmful exposures to birds and marine mammals
High	50g/m ²	Approximates surface oil slick and informs response planning

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 320 / 427
			Validity Status	Rev. No. B	

Exposure level	Threshold	Description
Shoreline oil accumulation		
Low	10g/m ²	Predicts potential for some socio-economic impact
Moderate	100g/m ²	Loading predicts area likely to require clean-up effort
High	1,000g/m ²	Loading predicts area likely to require intensive clean-up effort
Dissolved in-water oil		
Low	10ppb	Establishes planning area for scientific monitoring based on potential for exceedance of water quality triggers
Moderate	50ppb	Approximates potential toxic effects, particularly sublethal effects to sensitive species
High	400ppb	Approximates toxic effects including lethal effects to sensitive species
Entrained in-water oil		
Low	10ppb	Establishes planning area for scientific monitoring based on potential for exceedance of water quality triggers
High	100ppb	As appropriate given oil characteristics for informing risk evaluation

8.6.2.6 Spill Modelling Results

Table 8-4 provides a summary of the results from the stochastic modelling report (RPS, 2024; Appendix D: Petrel Oil Spill Modelling) for an accidental release of MDO. The ZPI and EMBA are shown in Figure 4-1.

Table 8-4: Modelling Output Summary of an Accidental Release of MDO (RPS, 2024)

Exposure Values	Summary of worst-case predicted exposure
Surface Exposure	
Low (1g/m ²)	<p>The maximum distance for floating hydrocarbon exposure from the source was predicted to be 99km.</p> <p>The minimum time to floating hydrocarbon exposure at any given receptor(s) was 68 hours (Oceanic Shoals IMCRA).</p> <p>The probability of intersect with the Oceanic Shoals IMCRA is 1%, Pinnacles of the Bonaparte Basin KEF at 1%, and the Carbonate bank and terrace system of the Sahul Shelf KEF at 2%.</p>
Moderate (10g/m ²)	<p>The maximum distance for floating hydrocarbon exposure from the source was predicted to be 43km.</p> <p>No exposure was predicted to any receptor(s) at this threshold.</p>
High (50g/m ²)	<p>The maximum distance for floating hydrocarbon exposure from the source was predicted to be 17km.</p> <p>No exposure was predicted to any receptor(s) at this threshold.</p>
Shoreline Exposure	
Low (10g/m ²)	No exposure at this threshold was predicted.
Moderate (100g/m ²)	No exposure at this threshold was predicted.
High (500g/m ²)	No exposure at this threshold was predicted.
In-Water Exposure - Dissolved	
Low (10ppb)	The maximum distance for entrained hydrocarbons at this exposure from the source was predicted to be 107km.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 321 / 427
				Validity Status	Rev. No.	
					B	

	The minimum time to dissolved hydrocarbon exposure at any given receptor(s) was 120 hours (Oceanic Shoals IMCRA). The probability of intersect with the Oceanic Shoals IMCRA is 1%.
Moderate (50ppb)	The maximum distance for entrained hydrocarbons at this exposure from the source was predicted to be 42km. No exposure was predicted to any receptor(s) at this threshold.
High (400ppb)	No exposure at this threshold was predicted.
In-Water Exposure - Entrained	
Low (10ppb)	The maximum distance for entrained hydrocarbons at this exposure from the source was predicted to be 248km. The minimum time to dissolved hydrocarbon exposure at any given receptor(s) was 58 hours (Oceanic Shoals IMCRA). The highest probability of intersect was identified at the Pinnacles of the Bonaparte Basin KEF at 24%, Carbonate bank and terrace system of the Sahul Shelf KEF at 20%, and Oceanic Shoals IMCRA at 9%.
Moderate (100ppb)	The maximum distance for entrained hydrocarbons at this exposure from the source was predicted to be 87km. The minimum time to dissolved hydrocarbon exposure at any given receptor(s) was 68 hours (Oceanic Shoals IMCRA). The probability of intersect was only identified at the Oceanic Shoals IMCRA at 1% and Pinnacles of the Bonaparte Basin KEF at 1%.

8.6.3 Potential Environmental Impact

The accidental release of MDO may result in:

- Change in water quality.

A change in water quality can result in various environmental impacts to receptors, including:

- Change in fauna behaviour;
- Injury or mortality of marine fauna;
- Change in ecosystem dynamics and conservation values;
- Changes to the functions, interests, or activities of other marine users; and
- Change in cultural heritage.

Potential receptors that may be impacted are:

- Marine fauna including:
 - Plankton;
 - Fish (including sharks);
 - Marine Reptiles;
 - Marine Mammals; and
 - Seabirds and Shorebirds
- Socioeconomic receptors, including:
 - Commercial Fisheries;
 - Tourism and Recreational Fishing;
 - Other Marine Users (Commercial shipping, defence, and offshore industry);
 - Shipwrecks;

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 322 / 427
			Validity Status	Rev. No. B	

- Marine Parks;
- Key Ecological Features (KEFs); and
- First Nations Heritage.

The potential impacts to these receptors from exposure to surface and in-water (dissolved and entrained) hydrocarbons has been evaluated in the sections below.

As the spill modelling predicted no exposure to shoreline accumulation (see Section 8.6.2.6); the impacts to shoreline receptors have not been assessed.

8.6.3.1 Benthic Habitats and Communities

Benthic habitats have been assessed based on the hydrocarbon exposure thresholds that have the potential to cause harmful impacts (see Section 4.1). Therefore, the extent of the hydrocarbon exposure has been defined by using moderate hydrocarbon exposure thresholds for both surface and in-water (dissolved and entrained) hydrocarbons. This is defined as the Moderate Threshold Area (referred to as the ZPI).

Table 8-5 evaluates the potential impact that hydrocarbon spills for this activity may have on benthic habitat receptors found within the ZPI.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 323 / 427
			Validity Status	Rev. No.	
				B	

Table 8-5: Potential Environmental Impact for MDO exposure on Benthic Habitats

Benthic Habitats and Communities	
Exposure Evaluation:	
<p>Benthic habitats, such as coral reef formations, and the associated communities present within the ZPI may be exposed to hydrocarbons following an accidental release of MDO. Carbonate banks and shoals occur predominantly in the Joseph Bonaparte Gulf and consist of a hard substrate with flat tops and steep sides that rise from water depths of 150–300m (Baker et al., 2008).</p> <p>However, coral reefs and sponges are not a dominant habitat type identified for the region (see Section 4.3.6).</p>	
Predicted Impact:	
Surface	In-water
<p>Given these receptors are benthic, such as submerged coral reefs, exposure to surface (floating) hydrocarbons is not expected.</p>	<p>Exposure of entrained hydrocarbons to shallow subtidal corals has the potential to result in lethal or sublethal toxic effects, resulting in acute impacts or death at moderate to high exposure thresholds (Shigenaka 2011). Physical effects from entrained oil have the potential to coat contacted coral reefs. The phenomena of smothering of exposed coral surfaces or polyps by oil spills has only been reported where very large oil spill quantities, or very sticky oil slicks, have been encountered.</p> <p>Contact with corals may lead to reduced growth rates, tissue decomposition, impaired fertilization and larval settlement, and poor resistance and mortality of sections of reef (NOAA 2010).</p> <p>In-water exposure (dissolved or entrained) at relevant exposure thresholds is only predicted to occur within the upper 0–10m of the water column, therefore, corals found in water depths below 10m are not anticipated to be impacted by in-water hydrocarbon exposure.</p>
Predicted Impact Summary:	
<p>Given the lack of coral reef formations identified within the offshore location of the activity and the associated water depths which they occur in, exposure to hydrocarbons is not expected to occur. Any impacts that may occur are anticipated to be extremely limited and isolated events. Consequently, the potential consequence to submerged coral reefs are expected to result in localised, short-term impacts.</p>	

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 324 / 427
			Validity Status	Rev. No.	
	B				

8.6.3.2 Marine Fauna

Marine fauna have been assessed based on the hydrocarbon exposure thresholds that have the potential to cause harmful impacts (see Section 4.1). Therefore, the extent of the hydrocarbon exposure has been defined by using moderate hydrocarbon exposure thresholds for both surface and in-water (dissolved and entrained) hydrocarbons. This is defined as the Moderate Threshold Area (referred to as the ZPI).

Table 8-6 evaluates the potential impact that hydrocarbon spills for this activity may have on marine fauna receptors found within the ZPI.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 325 / 427
			Validity Status	Rev. No.	
				B	

Table 8-6: Potential Environmental Impact for MDO exposure on Marine Fauna

Plankton	
Exposure Evaluation:	
<p>Plankton species, phytoplankton and zooplankton, recorded across the Petrel field was characteristic of offshore tropical waters (see Section 4.4.1), therefore, it is possible they may be exposed to surface hydrocarbons and, to a greater extent, hydrocarbons entrained in the water column. However, no specific sites of upwelling were identified within the ZPI.</p> <p>Plankton (phytoplankton and zooplankton) are found in nearshore and open waters beneath the surface and form the basis for the marine food web. Plankton species are known to be sensitive to the toxic effects of oil at low concentrations and large numbers of planktonic organisms may be affected in the event of a spill event (ITOPF 2014). Plankton risk exposure through ingestion, inhalation and dermal contact.</p>	
Predicted Impact:	
Surface	In-water
<p>Plankton migrate vertically through the water column to feed in surface waters at night and, when doing so, may be exposed to surface hydrocarbons (NRDA 2012).</p> <p>Phytoplankton (photosynthetic organisms) can accumulate rapidly, due to their small size and high surface area to volume ratio, therefore populations are typically not sensitive to the impacts of oil (Hook et al. 2016). However, if phytoplankton are exposed to hydrocarbons at the sea surface, their ability to photosynthesise via smothering may be directly affected and would have implications for the next trophic level in the food chain (e.g., small fish) (Hook et al. 2016). In addition, the presence of surface hydrocarbons may result in a reduction of light penetrating the water column, which may again affect the rate of photosynthesis, particularly in instances where there is prolonged presence of surface hydrocarbons over an extensive area. A reduction in the rate of photosynthesis may inhibit growth, depending on the concentration range. For example, photosynthesis is stimulated by low concentrations of oil in the water column (10-30ppb) but becomes progressively inhibited above 50ppb. Conversely, photosynthesis can be stimulated below 100ppb for exposure to weathered oil (Volkman et al. 1994).</p>	<p>Plankton are found in open waters within the water column and are likely to be exposed to hydrocarbons dissolved or entrained in the water column in the event of an oil spill (NRDA 2012).</p> <p>Impacts, including injury and mortality, to planktonic species may occur due to a change in water quality following an unplanned hydrocarbon release. Plankton are widely dispersed throughout the water column, although exposure is predicted to occur within the 0-10m water depth, where plankton are most abundant. Effects will also be greatest in the area close to the spill source where hydrocarbon concentrations are likely to be highest.</p> <p>Relatively low concentrations of hydrocarbons are toxic to both plankton (including zooplankton and ichthyoplankton (fish eggs and larvae)). Plankton risk exposure through ingestion, inhalation and dermal contact with in-water hydrocarbons.</p> <p>Highly volatile hydrocarbons generally have higher toxicity levels when initially released due to the presence of the volatile components (Di Toro et al. 2007), however, with rapid weathering expected, this toxicity decreases. Furthermore, the actual area of exposure is expected to be extremely localised and temporary due to the influence of waves, currents and weathering processes.</p>

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 326 / 427
			Validity Status	Rev. No.	
				B	

	<p>Studies have shown minimal or transient effects on marine plankton (Volkman et al. 1994). Once background water quality conditions have re-established, the plankton community may take weeks to months to recover due to short generation times (ITOPF 2011), allowing for seasonal influences on the assemblage characteristics.</p>
Predicted Impact Summary:	
<p>Consequently, the potential impacts and risks to plankton from a vessel collision event are expected to result in localised short-term impacts to species for a short duration but not expected to affect species populations or general ecosystem functioning.</p>	
Marine Invertebrates	
Exposure Evaluation:	
<p>Marine invertebrates identified within the region, including commercially important species, may be impacted by in-water exposure of hydrocarbons. Species such as sponges, cnidarians, molluscs, and echinoderms have been shown to be present within the region. Benthic habitat mapping found that generally the seabed composition was similar, with sparse sessile benthos except for an unidentified white colonial organism (presently recorded as a hydrozoa) across all sampled fields. Estimated percentage cover was low for octocorals and sponges (~2% for each) while the unidentified hydroid comprised between 11-30% at all sites (Jones and Morgan 1994). See Section 4.4.2 for further details.</p> <p>There are no protected invertebrates listed in the EPBA Act PMST search.</p>	
Predicted Impact:	
Surface	In-water
<p>Given invertebrates are only found in benthic habitats, exposure to surface (floating) hydrocarbons is not expected.</p>	<p>The primary modes of exposure for marine invertebrate communities include:</p> <ul style="list-style-type: none"> • Direct exposure to dispersed oil (e.g., physical smothering) from a subsea release of hydrocarbons which remains at the sea floor, • Direct exposure to dispersed and non-dispersed oil (e.g., physical smothering) where oil sinks down from higher depths of the ocean, • Direct exposure to dispersed and non-dispersed oil dissolved in sea water and/or partitioned onto sediment particles, • Indirect exposure to dispersed and non-dispersed oil through the food web (e.g., uptake of oiled plankton, detritus, prey, etc.) (NRDA 2012), and • Acute or chronic exposure through surface contact and/or ingestion can result in toxicological risks.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 327 / 427
			Validity Status	Rev. No.	
				B	

	<p>Entrained and dissolved hydrocarbons can have negative impacts on marine invertebrates and associated larval forms. In general, larval invertebrate and invertebrates without an exoskeleton (e.g. sea cucumbers) have been shown to be more sensitive to impacts compared to adult forms, as the presence of an exoskeleton (e.g. crustaceans) reduces the impact of hydrocarbon absorption through the surface membrane.</p> <p>Tissue taint may occur and remain for several months in some species however, this will be localised and low level with recovery expected.</p> <p>Water quality in benthic habitats exposed to entrained hydrocarbons would be expected to return to background conditions within weeks to months of contact. Several studies have indicated that rapid recovery rates may occur even in cases of heavy oiling (National Academies Press 2003).</p>
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Predicted Impact Summary:

Due to the characteristics of the hydrocarbons, and water depths, coating of benthic assemblages and prolonged exposure to hydrocarbons is considered highly unlikely. Consequently, the potential impacts to invertebrates are expected to result in localised short-term impacts to species/habitats of recognised conservation value but not affecting local ecosystem functioning.

Fish (and Sharks)

Exposure Evaluation:

Several fish species may be present within the ZPI. Seven shark species identified as threatened by the EPBC Act Protect Matter Search Tool. However, no Biologically Important Areas (BIAs) for fish or shark species were found to intersect the ZPI.

Demersal species have been shown to be the most susceptible to oiled sediments, particularly species that are site restricted, however, only pelagic fish and shark species were identified within the area.

Any pelagic fish and shark species that occupy the water column, specifically within the upper 0 – 10m of the water column the surface layers of the water column (where in-water hydrocarbon exposure is predicted), are more susceptible to entrained and dissolved hydrocarbons.

Predicted Impact:

Surface	In-water
Fish and sharks (including rays) are all pelagic species which rarely break the sea surface, therefore, exposure to surface hydrocarbons may occur only occur if individuals feed at the sea surface. Studies have shown that near the sea surface, fish are able to detect and avoid contact with surface slicks	Fish and sharks can be exposed to in-water hydrocarbons droplets through a variety of pathways, including: <ul style="list-style-type: none"> • Direct dermal contact (e.g. whilst swimming through oil or waters with elevated dissolved hydrocarbon concentrations and other constituents, with diffusion across their gills (Hook et al. 2016),

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 328 / 427
			Validity Status	Rev. No.	
				B	

meaning fish mortalities rarely occur in the event of a hydrocarbon spill in open waters (Volkman et al. 1994).

Therefore, there is a low likelihood that these species will be exposed at the surface due to the wide habitat distribution that have, and the weathering properties of MDO, where the slick will quickly disperse and evaporate, prolonged exposure to surface hydrocarbons by fish, shark and ray species is unlikely.

- Ingestion (e.g. directly or via food base, fish that have recently ingested contaminated prey may themselves be a source of contamination for their predators), and
- Inhalation (e.g. elevated dissolved contaminant concentrations in water passing over the gills).

Exposure to hydrocarbons entrained or dissolved in the water column can be toxic to fish, with their embryonic, larval and juvenile life stages being the most vulnerable. Studies have shown a range of impacts including changes in abundance, decreased size, inhibited swimming ability, changes to oxygen consumption and respiration, changes to reproduction, immune system responses, DNA damage, visible skin and organ lesions and increased parasitism. However, many fish species can metabolise toxic hydrocarbons, which reduces the risk of bioaccumulation of contaminants in the food web (and human exposure to contaminants through the consumption of seafood) (NRDA 2012).

However, generally these species are highly mobile species, and their patterns of movements makes it unlikely for them to remain within the area long enough to be exposed to hydrocarbons to experience sub-lethal impacts (ITOPF 2011). The exception would be in areas such as reefs and other seabed features where species are less likely to move away into open waters (i.e., site-attached species).

Pelagic species fish are able to detect and avoid contact with surface slicks meaning fish mortalities rarely occur in the event of a hydrocarbon spill in open waters (Volkman et al. 1994). As a result, wide-ranging pelagic fish of the open ocean generally are not highly susceptible to impacts from surface hydrocarbons. Adult fish kills reported after oil spills, occur mainly to shallow water, near-shore benthic species (Volkman et al. 1994).

Predicted Impact Summary:

As identified in Section 4.4.6, a number of fish and shark species may occur in the Operational Area and over the wider region. Given the wide distribution of fish species in the region and the nature of the potential impacts, which are likely to be temporary and limited to a number of individuals, impact to an entire population or a population's overall viability is not anticipated.

Consequently, the potential impacts and risks to fish and sharks from a vessel collision event are expected to result in localised short-term impacts to species of recognised conservation value for a short duration but not expected to affect species populations or general ecosystem functioning.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 329 / 427
			Validity Status	Rev. No.	
				B	

Marine Reptiles

Exposure Evaluation:

There may be marine turtles foraging in the area predicted to be exposed to surface hydrocarbons.

Foraging BIAs were defined for four species of marine turtles within the ZPI;

- Loggerhead (EPBC listed as Endangered)
- Olive Ridley (EPBC listed as Endangered)
- Green (EPBC listed as Vulnerable)
- Flatback (EPBC listed as Vulnerable)

No habitat critical for the survival of marine turtles was identified within the ZPI (see Section 4.4.8 for further details on these species).

The Recovery Plan for Marine Turtles in Australia: 2017–2027 (DEE, 2017) highlights acute chemical discharge as one of several threats to marine turtles.

Marine turtles may be exposed to hydrocarbons when transiting through the in-water hydrocarbons, surfacing to breathe within the surface slick, or nesting on oiled shorelines. Marine sea turtles are vulnerable to the effects of oil at all life stages—eggs, post-hatchlings, juveniles, and adults in nearshore waters. Several aspects of marine turtle biology and behaviour place them at particular risk (NOAA 2010a), including a lack of avoidance behaviour, indiscriminate feeding in convergence zones, and large pre-dive inhalations.

There may be sea snakes present in the area predicted to be exposed to surface hydrocarbons; however, their presence is expected to be of a transitory nature only, and most species are not pelagic.

Predicted Impact:

Surface

Marine turtles make large, rapid inhalations before they dive which may result in inhalation of toxic vapours from hydrocarbons in surface waters (Milton and Lutz, 2003). This can lead to respiratory irritation, inflammation, emphysema or pneumonia (NOAA 2010a).

Ingested oil may cause harm to the internal organs of turtles. Visibly oiled turtles showed higher indicators of polycyclic aromatic hydrocarbons (PAH) in tissues, stomach content, colon content and faeces compared to non-visibly oiled turtles (Ylitalo et al., 2017). This exposure pathway may cause an increase in the production of white blood cells and may affect the functioning of their salt gland (Lutcavage et al. 1995). Oiling has the potential to cause mortality depending on the size of the individual and the extent of oiling (DWH Natural Resource Damage Assessment Trustees 2016).

In-water

Oil exposure affects different turtle life stages in different ways. Turtles may be exposed to chemicals in oil in two ways:

- Internally – eating or swallowing oil, consuming prey containing oil-based chemicals, or inhaling of volatile oil related compounds; and
- Externally – swimming in oil or dispersants, or oil or dispersants on skin and body.

Effects of oil on turtles include:

- Increased egg mortality and developmental defects,
- Direct mortality due to oiling in hatchlings, juveniles and adults.

Negative impacts to the skin, blood, digestive and immune systems (elevated susceptibility to infections (NOAA 2010a) and salt glands resulting

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 330 / 427
			Validity Status	Rev. No.	
				B	

Sea snakes undertaking foraging behaviours near the water surface may have an increased level of vulnerability to hydrocarbon exposure (Yaghmour et al., 2022).

from hydrocarbons adhering to body surfaces (Gagnon and Rawson 2010) and entering cavities such as the eyes, nostrils, or mouth.

Records of oiled wildlife during spills rarely include marine turtles, even from areas where they are known to be relatively abundant (Short 2011). An exception to this was the large number of marine turtles collected (613 dead and 536 live) during the Macondo spill in the Gulf of Mexico, although many of these animals did not show any sign of oil exposure (NOAA 2017). Of the dead turtles found, 3.4% were visibly oiled and 85% of the live turtles found were oiled (NOAA 2017). Of the captured animals, 88% were later released, suggesting that oiling does not inevitably lead to mortality.

The four species of marine turtles identified within the ZPI are all widely dispersed across North Australia and the North-West Shelf (NWS); therefore, it is unlikely that an individual will be foraging within the localised area exposed to hydrocarbons at the time of the spill incident. Any potential impact would be limited to individuals, with population impacts not anticipated.

Sea snakes found within the ZPI have the potential to be directly and indirectly impacted by hydrocarbons. In general, there is limited literature on the impacts of oil spills to sea snakes. A recent study by Yaghmour et al., (2022) is the only study to record lethal impacts to sea snakes following a crude oil spill in the Gulf of Oman. The study also identified varying levels of smothering, including over their eyes, snout, mouth, and oesophagus. Due to the hydrocarbon characteristics of the MDO, as a light, non-persistent hydrocarbon, the impact would differ to spills of heavy crude as studied in Yaghmour et al., (2022). Light oils, which are less likely to cause severe external oiling, may expose marine fauna to volatile PAHs during at the surface during inhalations. However, the number of sea snakes that may be exposed is expected to be low due to the offshore location, the lack of BIAs, the extent of exposure above the threshold, and the anticipated rapid weathering of the light-non persistent hydrocarbon. Therefore, potential impact would be limited to individuals, with population impacts not anticipated.

Predicted Impact Summary:

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 331 / 427
			Validity Status	Rev. No.	
				B	

The number of marine turtles that may be exposed to hydrocarbons during a spill event is expected to be low due to the localised and temporary presence of surface hydrocarbons at moderate exposure levels and the absence of habitat critical to the survival of the species within this area. The spill modelling predicted no shoreline accumulation at any threshold; therefore, no nesting beaches are anticipated to be contacted. Therefore, any potential impacts would be limited to individual transiting or foraging marine turtles, with not impacts to species populations or general ecosystem functioning anticipated. Due to the low number of sea snakes anticipated within the EMBA, impacts to sea snakes at both an individual or population level is not anticipated.

Marine Mammals

Exposure Evaluation:

Several cetacean species (whales and dolphins) have the potential to be present within the ZPI, and are threatened, migratory and/or listed as per the EPBC Act Protected Matters Search Tool, including:

- Blue whale (EPBC listed as Endangered)
- Fin Whale (EPBC listed as Endangered)
- Sei Whale (EPBC listed as Endangered).

There are no cetacean BIAs or habitat critical to the survival of the species identified within the ZPI.

No pinniped species were identified within the ZPI.

Marine mammals, such as cetaceans, can be exposed to the chemicals in oil through:

- Dermal contact, by swimming in oil and having oil directly on the skin and body (NRDA 2012; Hook et al. 2016),
- Inhaling volatile oil compounds when surfacing to breathe, and
- Internal exposure by consuming oil or contaminated prey.

Predicted Impact:

Surface

Cetaceans may come into contact with surface hydrocarbons when surfacing. However, direct surface oil contact with hydrocarbons is considered to have little deleterious effect on cetaceans, and any effect is likely to be minor and temporary. This may be due to the skin's effectiveness as a barrier to toxicity (Geraci & St Aubin 1988). Cetaceans have mostly smooth skins with limited areas of pelage (hair covered skin) or rough surfaces such as barnacled skin. Oil tends to adhere to rough surfaces, hair or calluses of animals, so contact with hydrocarbons by cetaceans is expected to cause only minor hydrocarbon adherence.

In-water

Cetaceans exposed to entrained hydrocarbons can result in physical coating as well as ingestion (Geraci and St Aubin, 1988). Such impacts are associated with 'fresh' hydrocarbon, the risk of impact declines rapidly as the hydrocarbon weathers.

The susceptibility to ingested hydrocarbon has also been shown to vary with feeding habits. Specifically, toothed whales and dolphins may be susceptible to ingestion of dissolved and entrained oil as they gulp feed at depth. There are reports of declines in the health of individual pods of killer whales (a toothed whale species), though not the population as a whole, in Prince

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 332 / 427
			Validity Status	Rev. No.	
				B	

<p>The inhalation of oil droplets, vapours and fumes is a distinct possibility if cetaceans' surface in slicks to breathe. Exposure to hydrocarbons in this way could damage mucous membranes, damage airways, or even cause death. Given the mobility of whales, only a small proportion of a population is anticipated to surface in the affected areas, resulting in short-term and localised consequences, with no long-term population viability effects.</p> <p>The susceptibility to ingested hydrocarbons has also been shown to vary with feeding habits. Baleen whales (such as blue, southern right, and humpback whales) are not particularly susceptible to ingestion of oil in the water column but are susceptible to oil at the sea surface as they feed by skimming the surface. Oil may stick to the baleen while they 'filter feed' near slicks. Sticky, tar-like residues are particularly likely to foul the baleen plates.</p>	<p>William Sound after the Exxon Valdez vessel spill (heavy oil) (Hook et al. 2016).</p> <p>Geraci & St Aubin (1988) found little evidence of cetacean mortality from hydrocarbon spills; however, some behaviour disturbance (including avoidance of the area) may occur. Pelagic species have been said to avoid hydrocarbon, mainly because of its noxious odours, but this has not been proven. In the event that avoidance was to occur, the potential for physiological impacts from contact with hydrocarbons would be reduced, however, active avoidance of an area may disrupt behaviours such as migration, or displace individuals from important habitat, such as foraging, resting or breeding. Although, the strong attraction to specific areas for breeding or feeding may override any tendency for cetaceans to avoid the noxious presence of hydrocarbons.</p> <p>Dolphin populations from Barataria Bay, Louisiana, USA, which were exposed to prolonged and continuous oiling from the Macondo oil spill in 2010, had higher incidences of lung and kidney disease than those in the other urbanised environments (Hook et al. 2016). The spill may have also contributed to unusually high perinatal mortality in bottlenose dolphins (Hook et al. 2016).</p>
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Predicted Impact Summary:

As highly mobile species, in general it is very unlikely that cetaceans will be constantly exposed to concentrations of hydrocarbons in the water column for continuous durations (e.g., >96 hours) that would lead to chronic toxicity effects.

The modelling predicted that hydrocarbons would weather rapidly if released to the environment. Relatively fresh hydrocarbon (closer to the release location) are considered to have the greatest potential for impact. Therefore, the potential for environmental impacts would be limited to a relatively short period following the release and would need to coincide with a migration or aggregation event to result in exposure to a large number of individuals. Regardless, such exposure is not anticipated to result in long-term population viability effects. A proportion of the migrating population of whales could be affected for a single migration event, which could result in temporary and localised consequences. Given the wide distribution of marine mammal species in the region and the nature of the potential impacts, impact to an entire population or the population's overall viability is not anticipated.

Seabirds and Shorebirds

Exposure Evaluation:

Several EPBC threatened, migratory and/or listed marine species have the potential to be rafting, resting, diving and feeding within the area predicted to be contacted by surface hydrocarbons; and diving or foraging within in-water hydrocarbons exposure at moderate thresholds.

No BIAs for any species of seabirds were identified to intersect the ZPI. See Section 4.4.5 for further details on these species.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 333 / 427
			Validity Status	Rev. No.	
				B	

Predicted Impact:	
Surface	In-water
<p>Seabirds rafting, resting, diving or feeding within surface hydrocarbons may be exposed to surface hydrocarbons. Species most at risk include those that readily rest on the sea surface and surface plunging species such as terns.</p> <p>Direct contact with hydrocarbons is likely to foul plumage, which may result in hypothermia due to a reduction in the ability of the bird to thermoregulate and impaired waterproofing (ITOPF 2011a). Increased heat loss as a result of a loss of water-proofing results in an increased metabolism of food reserves in the body, which is not countered by a corresponding increase in food intake and may lead to emaciation (DSEWPaC, 2011).</p> <p>A bird suffering from cold, exhaustion and a loss of buoyancy (resulting from fouling of plumage) may dehydrate, drown or starve (ITOPF 2011; DSEWPaC, 2011; AMSA, 2013). Physical smothering may also result in impaired navigation and flight performance (Hook et al. 2016).</p> <p>Toxic effects on birds, including internal tissue irritation in their lungs and stomachs, may also result where the oil is ingested as the bird attempts to preen its feathers (ITOPF 2011). The preening process may also spread oil over otherwise clean areas of the body (ITOPF 2011). Whether this toxicity ultimately results in mortality will depend on the amount consumed and other factors relating to the health and sensitivity of the bird.</p> <p>In a review of 45 marine hydrocarbon spills, there was no correlation between the numbers of bird deaths and the volume of the spill (Burger & Fry, 1993).</p>	<p>Seabirds could be impacted by in-water hydrocarbon exposure directly (i.e. whilst diving through the water column foraging) or indirectly (i.e. by consuming hydrocarbon-tainted fish, resulting in sub-lethal or toxic impacts).</p> <p>As seabirds are top order predators, any impact on other marine life (e.g., pelagic fish) from hydrocarbon exposure may disrupt and limit food supply both for the maintenance of adults and the provisioning of young.</p> <p>The foraging BIAs are typical over relatively extensive areas, therefore, impacts are not anticipated at a population level due to the localised and temporary exposure of moderate levels of surface hydrocarbons.</p> <p>Furthermore, the time spent within the water column is often time-limited, reducing the amount of exposure experienced whilst diving within the water column.</p>
Predicted Impact Summary:	
<p>Acute or chronic toxicity impacts (death or long-term poor health) to seabirds is possible, however, the presence of birds within areas exposed to moderate threshold levels is expected to be limited, due to the transitory nature of foraging individuals, and given the absence of offshore aggregation areas in the area.</p> <p>The modelling predicted rapid weathering of the hydrocarbons, limiting the area of surface exposure, for seabirds to come into contact with. Impacts to seabirds in offshore waters are expected to primarily consist of effects such as reduced prey abundance.</p> <p>Consequently, the potential impacts and risks to seabirds from a vessel collision event are expected to result in localised short-term impacts to species of recognised conservation value for a short duration but not expected to affect species populations or general ecosystem functioning.</p>	

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 334 / 427
			Validity Status	Rev. No. B	

8.6.3.3 Protected and Significant Areas

Protected and significant areas have been assessed based on the hydrocarbon exposure thresholds that have the potential to cause harmful impacts (see Section 4.1). Therefore, the extent of the hydrocarbon exposure has been defined by using low hydrocarbon exposure thresholds for both surface and in-water (dissolved and entrained) hydrocarbons. This is defined as the EMBA.

Table 8-7 evaluates the potential impact that hydrocarbon spills for this activity may have on protected and significant areas found within the EMBA.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 335 / 427
			Validity Status	Rev. No.	
				B	

Table 8-7: Potential Environmental Impact for MDO exposure on Protected and Significant Areas

Marine Parks	
Exposure Evaluation:	
<p>Modelling predicted one Australian Marine Park (AMP) to intersect the EMBA (see Section 4.5.1.1):</p> <ul style="list-style-type: none"> The Oceanic Shoals AMP <p>The major conservation values for this AMP have been identified within Section 4.5.1 and include pinnacles, carbonate banks and shoals; sites of enhanced biological productivity. The conservation values of these seabed features are recognised in marine bioregional plans through their assignment as Key Ecological Features (KEFs) of regional significance (CoA, 2012). These sites may be impacted by exposure to surface and in-water hydrocarbons.</p>	
Predicted Impact:	
Surface	In-water
<p>The values identified within the Oceanic Shoals AMP have the potential to be exposed to surface hydrocarbons at, or above, the low threshold, in the event of a spill incident.</p> <p>Impact to these receptors from direct or indirect exposure to surface hydrocarbons may cause a subsequent negative impact to the value of the AMPs.</p> <p>However, the values associated with this AMP are predominantly submerged values associated with the unique features, and are therefore, unlikely to be exposed to hydrocarbons at the sea surface.</p> <p>Refer also to:</p> <ul style="list-style-type: none"> Benthic Habitats Seabirds Marine Reptiles. 	<p>The values identified within these AMP have the potential to be exposed to entrained hydrocarbons at, or above, the low threshold in the event of a spill incident.</p> <p>The AMP is associated with unique submerged features, such as carbonate (limestone-like) banks, terraces and isolated pinnacles that provide hard substrates for sponge gardens and associated benthic fauna (Caley et al., 2015).</p> <p>The Oceanic Shoals AMP is identified as an important foraging area for marine turtles. There is a low probability that marine turtles will be exclusively feeding within the area exposed to hydrocarbons given their extensive foraging grounds. Therefore, there is a chance that foraging marine turtles will experience sub-lethal impacts from consuming contaminated prey, however, impacts will be limited to individuals and are not expected to cause impacts at a population-level.</p> <p>The exposure of entrained hydrocarbons will be greatest within the upper 0-10m of the water column and areas close to the spill source. The Oceanic Shoals AMP are located within waters 15m to 500m, respectively, therefore, conservation values within these AMP, such as ecosystems, habitats and sea-floor features are not predicted to be impacted.</p> <p>Studies have suggested that the AMP contributes larvae to the Montebello, Argo-Rowley Terrace, Mermaid Reef, Kimberly, Ashmore Reef, Cartier, Joseph</p>

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 336 / 427
			Validity Status	Rev. No.	
				B	

	<p>Bonaparte gulf, Arafura and Arnhem AMP (Caley et al., 2015). Therefore, due to this connectivity, hydrocarbon exposure may have indirect negative impacts to these AMPs.</p> <p>Impact to these receptors from direct or indirect exposure to in-water hydrocarbons may cause a subsequent negative impact to the value of the AMPs.</p> <p>Refer also to:</p> <ul style="list-style-type: none"> • Benthic Habitats • Seabirds • Fish and Sharks • Marine Reptiles • Key Ecological Features.
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Predicted Impact Summary:

The potential consequence to AMPs from exposure to hydrocarbons following a vessel collision has the potential for localized, medium-term impacts to habitats or species of recognised conservation value or to local ecosystem functioning.

Key Ecological Features

Exposure Evaluation:

Modelling predicted 3 Key Ecological Features (KEFs) to intersect the EMBA (see Section 4.5.2), these include:

- Carbonate bank and terrace system of the Sahul Shelf
- Carbonate bank and terrace system of the Van Diemen Rise
- Pinnacles of the Bonaparte Basin.

The major conservation values for KEFs have been identified within Section 4.5.2 and include unique seafloor features with ecological properties of regional significance, such as hard substrates which support diverse species.

The Carbonate bank and terrace system of the Sahul Shelf KEF provides areas of enhanced biological productivity, supporting a high diversity of organisms including reef fish, sponges, soft and hard corals, gorgonians, bryozoans, ascidians and other sessile filter feeders. The banks are known to be foraging areas for loggerhead, Olive Ridley and flatback turtles. Cetaceans and green and freshwater sawfish are likely to occur in the area (CoA, 2012).

The Carbonate bank and terrace system of the Van Diemen Rise is associated with raised geomorphic features, banks, ridges and terraces, with relatively high proportions of hard substrate which support sponge and octocoral gardens.

Both the Carbonate bank and terrace system of the Van Diemen Rise and the Pinnacles of the Bonaparte Basin have been identified as a sponge biodiversity hotspots (Przeslawski et al. 2014; NERP MBH 2014).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 337 / 427
			Validity Status	Rev. No.	
				B	

The conservation values of these seabed features are recognised in marine bioregional plans through their assignment as Key Ecological Features (KEFs) of regional significance (CoA, 2012). These sites may be impacted by exposure to surface and in-water hydrocarbons.

Predicted Impact:

Surface	In-water
<p>The values associated with these KEFs are identified as unique seafloor features with ecological properties of regional significance, such as hard substrates which support diverse species. As these features are predominantly submerged, they unlikely to be exposed to hydrocarbons at the sea surface. Therefore, only values of the KEFs that may come into contact with surface hydrocarbons, such as marine turtles, have the potential to be impacted by a hydrocarbon release.</p> <p>Refer also to:</p> <ul style="list-style-type: none"> • Marine Reptiles 	<p>The values identified within these KEFs have the potential to be exposed to entrained hydrocarbons at, or above, the low threshold.</p> <p>However, the exposure of entrained hydrocarbons will be greatest within the upper 0-10m of the water column and areas close to the spill source. Therefore, the spill is unlikely to intersect with majority of the values of the KEFs which are concentrated within the water column >10m deep or along the seafloor at varying water depths.</p> <p>Hydrocarbon exposure to the key receptors of the KEFs (e.g. marine turtles, sponges, fish species) may cause a subsequent negative impact to the value of the KEFs, however is expected to be limited to a small number of individuals, with no impacts to regional populations.</p> <p>Refer also to:</p> <ul style="list-style-type: none"> • Benthic Habitats • Plankton • Fish and sharks • Marine Reptiles.

Predicted Impact Summary:

The potential consequence to the KEFs from exposure to hydrocarbons following a vessel collision has the potential for localized, medium-term impacts to habitats or species of recognised conservation value or to local ecosystem functioning.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 338 / 427
			Validity Status	Rev. No.	
	B				

8.6.3.4 Socioeconomic and Cultural

Socioeconomic receptors have been assessed based on the hydrocarbon exposure thresholds that have the potential to cause harmful impacts (see Section 4.1). Therefore, the extent of the hydrocarbon exposure has been defined by using low hydrocarbon exposure thresholds for both surface and in-water (dissolved and entrained) hydrocarbons. This is defined as the EMBA.

Table 8-8 evaluates the potential impact that hydrocarbon spills for this activity may have on socioeconomic and cultural receptors found within the EMBA.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 339 / 427
			Validity Status	Rev. No.	
				B	

Table 8-8: Potential Environmental Impact for MDO exposure on Socioeconomic and Cultural receptors

Commercial Fisheries	
Exposure Evaluation:	
<p>Several commercial and state fisheries operate in the EMBA. These include:</p> <p>One Commercial Fishery:</p> <ul style="list-style-type: none"> Northern Prawn Fishery <p>7 Western Australian State Fisheries:</p> <ul style="list-style-type: none"> Kimberley Gillnet and Barramundi Fishery Kimberley Prawn Managed Fishery Mackerel Managed Fishery Northern Demersal Scalefish Managed Fishery Open Access in the North Coast Pearl Oyster Managed Fishery West Australian Sea Cucumber Fishery. <p>Refer to Section 4.6.1 for further description of the fisheries located within the EMBA.</p>	
Predicted Impact:	
Surface	In-water
<p>Physical displacement of commercial fishers may occur due to the establishment of exclusion zones during the spill response.</p> <p>Visible surface hydrocarbons (i.e. a rainbow sheen) may have the potential to cause impact public perception of the industry, potentially causing a negative economic impact.</p> <p>The commercial fisheries identified within the EMBA predominantly target pelagic or demersal species. As this spill scenario is a surface spill, it is unlikely that demersal species will be impacted as the entrained hydrocarbons are expected to remain within the first 10-20m of the water column. Pelagic species rarely break the sea surface, and studies have shown that fish species are able to detect and avoid contact with surface hydrocarbon slicks (Volkman et al. 1994), therefore there is a low likelihood of exposure to commercially targeted species.</p>	<p>As discussed in the relevant sections above (i.e. marine invertebrates and fish and sharks) exposure to in-water hydrocarbons has the potential to impact species.</p> <p>Due to the sensitivity, a small number of juvenile fish, larvae, invertebrates without exoskeletons and planktonic organisms, may be impacted.</p> <p>In-water hydrocarbon exposure may result in a reduction in commercially targeted marine species (i.e. marine invertebrates and fish and shark species), subsequently resulting in impacts to commercial fishing productivity. Contamination of target species can cause economic impacts to the industry.</p> <p>In-water exposure is limited to the upper 0 – 10m of the water column, and not within the deeper areas of the water column where several of the commercial species are found.</p>

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 340 / 427
			Validity Status	Rev. No.	
				B	

Refer to: <ul style="list-style-type: none"> Fish and sharks. 	Furthermore, given the relatively small extent of area potentially impacted by hydrocarbons, highly mobile pelagic species which are present within the EMBA are unlikely to remain in one area for long periods of time, which minimises the risk that they would be exposed to toxic levels of hydrocarbons for the length of time necessary to impart a lethal impact. <p>Therefore, any acute impacts are expected to be limited to individuals and not expected to cause impacts at a population level. Furthermore, impacts are not expected to affect population viability or recruitment.</p> Refer to: <ul style="list-style-type: none"> Marine Invertebrates Fish and sharks.
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Predicted Impact Summary:

Due to the nature of the hydrocarbon, being light, non-persistent with high anticipated evaporation and entrainment rates, any exclusion zones are not expected to be long-term and are unlikely to result in significant impacts.

Tourism and Recreational Fishing

Exposure Evaluation:

The areas identified as potentially being overlapped by the EMBA are areas where very little recreational or charter fishing is expected to occur. This is due to the distance from boating facilities, slipways and the overall lack of natural attractions found within the Operational Area and the ZPI. See Section 4.6.2 for further details.

Predicted Impact:

Surface	In-water
<p>Visible surface hydrocarbons (i.e. a rainbow sheen) have the potential to reduce the visual amenity of the area for tourism and discourage recreational activities.</p> <p>Recreation is also linked to the presence of marine fauna and direct impacts to marine fauna such as whales, birds, and pinnipeds can result in indirect impacts to recreational values.</p>	<p>In general, recreational and tourism activities are restricted to shallower coastal waters and shorelines. Given the absence of accumulation of hydrocarbons along shorelines an impact to coastal waters, any impact tourism and recreational is anticipated to be minimal.</p> <p>Precautionary exclusion from shorelines and coastal areas may be implemented by local governments until water quality monitoring verifies the absence of residual hydrocarbons. This could cause disruption to some recreational and tourism activities within that area.</p>

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 341 / 427
			Validity Status	Rev. No.	
				B	

<p>It is important to note that the impact from a public perception perspective may be even more conservative. This may deter tourists and locals from undertaking recreational activities. If this occurs, the attraction is temporarily closed, economic losses to the business are likely to eventuate. The extent of these losses would be dependent on how long the attraction remains closed.</p> <p>Refer also to:</p> <ul style="list-style-type: none"> • Fish and sharks • Seabirds and Shorebirds • Cetaceans. 	<p>Very limited recreational or charter fishing is expected to occur within the offshore waters of the EMBA (see Section 4.6.2), therefore, impacts are anticipated to be minimal.</p>
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Predicted Impact Summary:

Given the nature of the hydrocarbon, being a light and non-persistent, and the absence of shoreline impact, any impacts to recreation and tourism are expected to be localised and short-term.

Other Marine Users

Exposure Evaluation:

Surface hydrocarbons may interact with other marine users, such as commercial shipping, other petroleum exploration and production activities, subsea cables, and defence activities.

There are no known recognised major shipping routes through the permit areas, however vessels may occasionally pass through the EMBA. The nearest shipping fairway, designated by AMSA, is located more than 80km away. Therefore, shipping traffic will likely be limited to infrequent visits by Northern Prawn Fishery (NPF) and other fisheries (see Section 4.6.3 for further details).

Several other offshore industries are located within the area, see Section 4.6.5 for further details.

A network of submarine cables extends from Darwin through the Timor Sea and offshore waters of the Kimberley, linking Northern Australia with South-East Asia. No subsea cables intersect with the Operational Area. However, a subsea cable, the North West Cable System, does pass through the top North-East section of the EMBA (see Section 4.6.6).

The Petrel field is located within a military exercise zone named the Northern Australia Exercise Area, which incorporates the majority of the Northern Territories portion of the Bonaparte Basin (see Section 4.6.4 for further details).

Predicted Impact:

Surface	In-water
Physical displacement of other marine users may occur due to the establishment of exclusion zones during the spill response.	Given these industries are all located in offshore waters which utilise the sea surface vicinity, exposure to in-water hydrocarbons is not expected.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 342 / 427
			Validity Status	Rev. No.	
				B	

However, due to the comparatively small area of exposure, and the fact that exclusion zones are not expected to be long-term, significant impacts are not anticipated.

Predicted Impact Summary:

Due to the nature of the hydrocarbon, being light and non-persistent, with high anticipated evaporation and entrainment rates, exclusion zones are not expected to be long-term and are unlikely to result in significant impacts to other marine users.

First Nation Heritage

Exposure Evaluation:

Sea Country, often known as saltwater country, refers to locations of the sea with which Aboriginal and Torres Strait Islander peoples have a special connection. It is a sea and land estate comprising sacred locations inhabited by ancient creatures who reside in both the physical and spiritual worlds. Aboriginal and Torres Strait Islander cultural identity, health, and wellbeing are valued in Sea Country (DNP 2018a, 2018b).

Relevant First Nations groups were engaged during consultation (Section 5). The Northern Land Council (NLC) raised concerns about the event of an incident impacting the NT coastline or Sea Country. Spill modelling predicts no shoreline exposure. Balangarra Aboriginal Corporation (BAC) requested notification in the event of an activity related incident. Section 8.6.6 details Eni's commitments to notifying these groups in the event of an oil spill.

Sea Country is valued for First Nations cultural identity, health, and wellbeing (Section 4.6.8). Across Australia, First Nations people have been sustainably using and managing their Sea Country for tens of thousands of years. First Nations Heritage consisting of Cultural Heritage Values and Sea Country are considered as socially important receptors. These include coastal and marine Aboriginal heritage sites and places, some of which are registered Aboriginal sites and sacred sites. An unplanned large-scale spill has the potential to impact First Nations Heritage consisting of Cultural Heritage Values including coastal areas and Sea Country.

Maintaining relationships and facilitating ongoing discussions with First Nations people and communities connected to Sea Country allows for opportunities for ongoing improvements to spills preparedness, prevention and mitigation, building resilience and capacity in the community as well as the protection of socially important receptors.

Coastal areas and Sea Country in are most likely to be affected in the event of an unplanned large-scale spill such as loss of well containment compared to a small-scale spill of MDO as considered the worst case credible scenario for the activities within this EP. An unplanned large-scale spill will impact Sea Country for a period, while the spill disperses and weathers. Impacts following a MDO release to the range of species to which First Nation people may have cultural connections to has been discussed throughout this table. Section 4.6.8 provides information on First Nation people's knowledge and First Nations Heritage specific to this region and Section 5 discusses Eni's approach to engaging First Nation people and other relevant persons in such conversation.

It must be noted that that the likelihood of a hydrocarbon spill occurring is assessed as highly unlikely and the actual area that may be affected from any single spill event would be considerably smaller than represented by the EMBA.

Combining Traditional Owner knowledge and spill modelling data that considers geographic and metocean data as well as hydrocarbon exposure types, thresholds, concentrations, transport, dispersal, fate, and weathering assists with understanding potential impacts on social receptors in the EMBA or ZPI.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 343 / 427
			Validity Status	Rev. No.	
				B	

Whilst there are no IPAs intersecting the EMBA, the Marri-Jabin, Balanggarra and Unguu IPAs are within close proximity to the EMBA, and the sea component of these IPAs may be contacted from surface and in-water (dissolved and entrained) hydrocarbon exposure (Section 8.6.2.6). Hydrocarbon exposure (surface and in-water) may have the potential to impact the aesthetic, cultural value, and significance of Sea Country by the presence of physical hydrocarbons or the presence of oil spill responders.

Predicted Impact:

Surface	In-water
<p>Visible surface hydrocarbons have the potential to reduce the visual amenity of known culturally significant values identified within the marine environment, subsequently potentially impacting the value of the site to First Nations people.</p>	<p>First Nations people’s connection to Sea Country could potentially be impacted by exposure to hydrocarbons. See Section 4.6.8 for further details of the values.</p> <p>In-water exposure at relevant thresholds may impact culturally important species to First Nations peoples, such as cetaceans, which may impact the cultural value of the species.</p> <p>Hydrocarbon exposure (surface and entrained) may have the potential to impact the aesthetic, cultural value, and significance of Sea Country by the presence of physical hydrocarbons or the presence of oil spill responders.</p> <p>The Marri-Jabin, Balanggarra and Unguu IPAs are within close proximity to the EMBA although do not intersect with the EMBA (Section 4.6.8). Significant impact to First Nations people’s sensitivities or values of IPAs are not anticipated given the distance to the spill release sites and the hydrocarbon characteristics of the MDO indicating that high rates of evaporation will occur within the first few days, limiting the exposure to these sensitivities and values (Section 8.6.2.4). The 10ppb low entrained exposure threshold (used to define the extent of the EMBA) represents the very lowest concentration and corresponds generally with the lowest trigger levels for chronic exposure for entrained hydrocarbons in water quality guidelines, no ecological impacts are anticipated at this threshold. It is considered highly unlikely that there will be long-term impacts to First Nations activities from contact at the low entrained threshold.</p> <p>Furthermore, the spill scenario is expected to be localised and short-term, with the MDO evaporating within the first few days. The spill will likely also be restricted to the first 10-20m of the water column, and not come into contact with the seafloor.</p> <p>Refer also to:</p>

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 344 / 427
			Validity Status	Rev. No.	
				B	

	<ul style="list-style-type: none"> • Cetaceans • Australian Marine Parks.
Predicted Impact Summary:	
<p>First Nations people's connection to Sea Country could potentially be impacted by exposure to hydrocarbons. However due to the characteristics of the spill scenario, the MDO is expected to evaporate within the first few days. Consequently, the potential impacts and risks to underwater cultural heritage from a vessel collision event are expected to result in localised short-term impacts to socio-economic activities.</p>	

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 345 / 427
			Validity Status	Rev. No. B	

8.6.3.5 Residual risk summary

The worst-case residual severity to benthic habitats and communities, marine fauna, protected and significant area, and socioeconomic and cultural receptors from accidental release of MDO is evaluated as Local (3), given the hydrocarbon characteristics, water depths, transient nature of the marine fauna, and the offshore open water environment of the petroleum activity.

The likelihood of impacts to these receptors occurring as a result of the activities is considered Rare (A).

Therefore, the residual risk of an accidental release of MDO due to the petroleum activities is considered Low.

8.6.4 Environmental Performance Outcomes and Control Measures

EPOs relating to this event include:

- No loss of containment of hydrocarbons to the marine environment (EPO-13).

CMs relating to this risk include:

- Navigation equipment and procedures (CM-06);
- Consultation with relevant persons (including notification requirements) (CM-07);
- Vessel fuel quality (CM-10);
- Eni E&P Marine Manual (Marine assurance standard) (CM-13);
- Vessel SOPEP/emergency management plan (CM-34);
- NOPSEMA-accepted OPEP and OSMP (CM-33); and
- Refuelling transfer procedures (CM-37).

EPSs and MC relating to the above are presented in Section 9.1.

8.6.5 As Low as Reasonably Practicable Demonstration

Demonstration of ALARP			
Type	Control management	Evaluation	Adoption?
Eliminate	Eliminate the use of vessels in the Operational Area	Vessel use is required to support the MODU operations and cannot be eliminated.	✘
	Eliminate bunkering activities during operations	Would remove the spill risk from bunkering. However, the duration of the Petrel activities for the abandonment campaign requires that bunkering of fuel to the MODU occurs in the field, so the activity can be completed.	✘
Substitute	No fuel bunkering via hose	Removes spill risk from hose operations. Drums could be used; however, presents cost associated with multiple vessel transits and additional HSE risks during transfer of drums.	✘

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 346 / 427
				Validity Status	Rev. No. B	

Demonstration of ALARP			
Type	Control management	Evaluation	Adoption?
	Vessel fuel quality (in compliance with Marine Order 97)	<p>MDO is lighter than other types of fuels (e.g., heavy fuel oil) and will evaporate faster and persist less in the marine environment. MDO is already used on the vessels in accordance with Marine Orders.</p> <p>Minimal cost as vessels required to comply with Marine Orders.</p>	<p>✓ (CM-10)</p>
Engineering	Navigation equipment and procedures	<p>Ensures the MODU and vessels are seen by other marine users.</p> <p>Reduces risk of environmental impact from vessel collisions due to ensuring safety requirements are fulfilled.</p> <p>Negligible costs of operating navigational equipment.</p> <p>Marine Orders requires vessels to have navigational equipment to avoid collisions.</p>	<p>✓ (CM-06)</p>
	Contract double-hulled vessels only	<p>Double-hulled vessels only would provide additional protection to the fuel tanks.</p> <p>Vessels are subject to availability and are required to meet Eni standards. Double-hull requirement would be of high cost and subject to vessel availability, which could cause project delay.</p>	<p>*</p>
Isolation	N/A	N/A	N/A
Administrative	Consultation with relevant persons (refer Section 5)	<p>Relevant persons consultation ensures marine users are aware of the activities, reducing the likelihood of collisions or unplanned interactions. Provides marine users an opportunity to request practicable interface control measures.</p> <p>Enables identification of potential Sea Country protection and enhancement initiatives, and implementation where practicable.</p> <p>In order to ensure Eni activities do not conflict with Defence training in the future, Eni will notify Defence a minimum of five weeks before the actual commencement of activities. Notification will need to be provided to offshore.petroleum@defence.gov.au.</p> <p>Minor administrative costs in notifying Defence.</p> <p>Ensures Defence is aware of the activities, reducing the likelihood of interactions.</p>	<p>✓ (CM-07)</p>
	NOPSEMA-accepted OPEP and OSMP	<p>Implements response plans to manage an unplanned hydrocarbon release quickly and efficiently to reduce impacts to the marine environment.</p> <p>An accepted OPEP is a legislative requirement under the OPGGS Act.</p>	<p>✓ (CM-33)</p>

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 347 / 427
			Validity Status	Rev. No. B	

Demonstration of ALARP			
Type	Control management	Evaluation	Adoption?
	Vessel SOPEP/emergency management plan	<p>Environmental benefit outweighs minor costs in implementing and testing the vessel spill response plan (SOPEP), which contains plans to prevent spills reaching the marine environment.</p> <p>A SOPEP is a requirement under MARPOL Annex 1 (all vessels larger than 400 gross tonnage have a SOPEP or SMPEP outlining options to control the source of a hydrocarbon spill).</p>	<p>✓</p> <p>(CM-24)</p>
	Eni E&P Marine Manual (Marine assurance standard)	Ensures vessels meet Marine assurance standards to reduce the likelihood of an unplanned spill.	<p>✓</p> <p>(CM-13)</p>
	Refuelling transfer procedures	Administrative control, such as bunkering/bulk refuelling procedures (applied by the contractors) can reduce the potential for bunkering spills with minimal cost involved.	<p>✓</p> <p>(CM-37)</p>

8.6.6 Acceptability Demonstration

Demonstration of acceptability	
Compliance with Legal Requirements, Laws and Standards	<p>Physical presence of Petrel activities is managed to avoid collisions and associated spill risk in accordance with relevant legislative requirements, including compliance with international maritime conventions and Australian legislation, being:</p> <ul style="list-style-type: none"> • International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978 • International Convention for the Safety of Life at Sea 1974 • International Regulations for Preventing Collisions at Sea 1972 • <i>Navigation Act 2012</i>, including, as appropriate to vessel class: <ul style="list-style-type: none"> - Marine Order 21: Safety and emergency arrangements) - Marine Order 30: Prevention of collisions) - Marine Order 71: Masters and deck officers <p>The Petrel-3 and Petrel-4 Monitoring and Decommissioning OPEP (000694_DV_ES.HSE.0285.000) is considered to meet this condition.</p>
Policy Compliance	<p>The management of loss of MDO is aligned with Eni policies and standards.</p> <p>The EPOs, CMs and EPSs that will be implemented are consistent with Eni internal requirements.</p>
Social Acceptability	<p>Stakeholders have been consulted. DBCA and the Wunambal Gambera Aboriginal Corporation raised concerns regarding the potential for a spill to contact shorelines, and Sea Country within WA State waters respectively. Eni confirmed there is no potential for the EMBA to enter State waters or contact any shorelines.</p> <p>AMSA, WA DoT, DEMIRS, BAC and the Northern Land Council requested to be notified in the event of a spill that could impact their relevant values or responsibilities (refer Section 5); and have been included in routine external notifications (Table 10-3).An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.</p>

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 348 / 427
				Validity Status	Rev. No. B	

Area Sensitivity/ Biodiversity	<p>There are BIAs for 4 marine turtle species; and BIAs for 2 seabird species that overlap the EMBA. There is one marine park (Ocean Shoals AMP), and 3 KEFs that overlap the EMBA. There are no National Heritage Places or Ramsar wetlands within the EMBA. The EMBA does not contact the shoreline.</p> <p>Eni has considered information contained in relevant recovery plans and approved conservation advice for EPBC Act listed species that identify chemical discharges, pollution and habitat degradation or modification as a threat (as listed in Table 2-3). This includes:</p> <p>Conservation Advice:</p> <ul style="list-style-type: none"> • Approved Conservation Advice for Balaenoptera borealis (Sei Whale) • Approved Conservation Advice for Balaenoptera physalus (Fin Whale) • Approved Conservation Advice on Aipysurus apraefrontalis (Short Nosed Sea Snake) • Approved Conservation Advice on Aipysurus foliosquama (Leaf-Scaled Sea Snake) • Approved Conservation Advice for Pristis clavate (Dwarf Sawfish) • Approved Conservation Advice for Green Sawfish • Approved Conservation Advice for Pristis pristis (Large Tooth Sawfish) • Approved Conservation Advice for Glyphis garricki (Northern River Shark) • Approved Conservation Advice for Glyphis glyphis (Speartooth Shark) • Approved Conservation Advice for Rhincodon typus (Whale Shark). <p>Recovery/Management Plans</p> <p>The petroleum activity is consistent with the objectives and actions of the plans identified below through adoption of EPO-13 and the control measures outlined in Section 8.6.4:</p> <ul style="list-style-type: none"> • Conservation Management Plan for the Blue Whale 2015–2025 (DoE, 2015) identifies habitat modification, including acute and chronic chemical discharge, as a threat. There are no BIAs for the blue whale overlapping the EMBA. There are no explicit relevant management actions in this plan. The petroleum activity is consistent with the long-term recovery objective to 'minimise anthropogenic threats to allow the conservation status of the blue whale to improve so that it can be removed from the threatened species list under the EPBC Act' through the adoption of the EPO. • Recovery plan for Marine Turtles in Australia (DEE, 2017) identifies acute chemical and terrestrial discharge as a threat. Foraging BIAs for the green, flatback, loggerhead and Olive Ridley turtle overlap the EMBA. Action Area A4 to minimise chemical and terrestrial discharge is met through the adoption of the EPO. • Sawfish and River Shark Multispecies Recovery Plan (Commonwealth of Australia, 2015) lists habitat degradation or modification as a threat. No habitat critical or BIAs have been identified for sawfish or river sharks within the EMBA. The petroleum activity is consistent with Objective 5 of this plan to 'reduce and, where possible, eliminate adverse impacts of habitat degradation and modification on sawfish and river shark species', through adoption of the EPO. • Recovery Plan for the White Shark (Carcharodon carcharias) (2013) identifies habitat modification as a threat. No habitat critical or BIAs have been identified for white sharks within the EMBA. The petroleum activity is consistent with the objective of this plan to ensure anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future through adoption of the EPO. • Recovery Plan for the Grey Nurse Shark (Carcharias taurus) (DoE, 2014a) identifies pollution as a threat. No habitat critical or BIAs for the grey nurse shark have been identified in the EMBA. The petroleum activity is consistent with the objective of this plan to ensure anthropogenic activities do not hinder
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	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 349 / 427
				Validity Status	Rev. No. B	

	<p>recovery in the near future, or impact on the conservation status of the species in the future, through the adoption of the EPO.</p> <p>Australian Marine Park zoning principles and objectives were also considered:</p> <ul style="list-style-type: none"> • North Marine Parks Network Management Plan (2018). <p>Recovery Plans/Conservation Advice for other EPBC Act listed threatened and migratory species that may occur in the ZPI or EMBA do not identify chemical discharges, pollution and habitat degradation or modification as a key threat or have explicit relevant objectives or management actions related to these threats.</p> <p>The control measures outlined in Section 8.6.4 are consistent with the objectives and actions in these publications. The petroleum activities are not inconsistent with the objectives and actions in the relevant recovery plans/conservation advice.</p>
ESD Principles	<p>The risk of this unplanned event is consistent with the principles of ESD because:</p> <ul style="list-style-type: none"> • Controls that will be implemented reduce the risk • The impacts associated with unplanned MDO spill do not result in 'threats of serious or irreversible harm' as detailed within the EPBC Act and biodiversity and ecological integrity will be maintained • Conservative assumptions on scale of impact have been applied (see Section 4.1 for further details). • The health, diversity and productivity of the environment will be maintained, including for future generations.
ALARP	The residual risk has been demonstrated to be ALARP.

The worst-case residual severity to benthic habitats and communities, marine fauna, protected and significant area, and socioeconomic and cultural receptors from accidental release of MDO is evaluated as Local (3), given the hydrocarbon characteristics, water depths, transient nature of the marine fauna, and the offshore open water environment of the petroleum activity. Controls have been evaluated above and adopted in accordance with the ALARP criteria. The residual risk ranking is Low. This is acceptable in accordance with Eni's acceptability criteria (Table 6-5). No additional controls were identified to further reduce risk. Given the low potential risk and the controls that will be implemented, Eni considers the risks are acceptable and managed to ALARP.

8.7 Oil Spill Response Operations

8.7.1 Summary of Environmental Risk Assessment

Hazard	Oil Spill Response Operations		
	Frequency	Severity	Risk
Inherent Risk	A	1	L
Residual Risk	A	1	L

8.7.2 Description of Hazard

In the event of a hydrocarbon spill, response strategies will be implemented where possible to reduce environmental impacts to ALARP. The selection of strategies will be undertaken through the Net Environmental Benefit Analysis (NEBA) process, outlined in the OPEP (Appendix E: OPEP).

NEBA is the process of considering advantages and disadvantages of different spill response options (including no response) to arrive at a spill response decision resulting in the lowest overall environmental and social impacts. This process acknowledges that some response techniques can result in a negative impact to the environment.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 350 / 427
			Validity Status	Rev. No.	
	B				

A preliminary NEBA is undertaken at a strategic level to identify pre-determined recommended response strategies, and an operational NEBA is undertaken throughout the emergency response. The process requires the identification of sensitive environmental receptors and the prioritisation of those receptors for protection so that the strategic objectives of the response can be established.

The spill response, including the completion of the operational NEBA, will be under the direction of the relevant Control Agency, as defined within the OPEP (Appendix E: OPEP).

Based on the outcomes from the preliminary strategic NEBA, described within the OPEP, the response techniques considered appropriate for this EP include:

- Source control;
- Monitor and Evaluate;
- Oiled Wildlife Response (OWR); and
- Scientific monitoring.

There is no shoreline contact predicted by the spill modelling (Section 8.6.2.6); therefore, shoreline protection and deflection and clean-up strategies are not required.

8.7.2.1 Source Control

Source control arrangements for an accidental release from a vessel requires the activation of the vessels SOPEP/SMPEP (or equivalent), which will be stored on each vessel as required by AMSA Marine Orders Part 21 and/or 91. Techniques may include:

- Containment;
- Closing watertight doors;
- Checking bulkheads;
- Vessel separation will increase spillage;
- Isolating penetrated tanks; and
- Tank lightening.

8.7.2.2 Monitor and Evaluate

Monitor and evaluate will apply to all marine spills. Higher levels of surveillance such as vessel/aerial surveillance, and oil spill trajectory modelling will only be undertaken for Level 2/3 spills given the nature and scale of the spill risk.

It is the responsibility of the Control Agency to undertake operational monitoring during the spill event to inform the operational response. Operational monitoring may include the following:

- Aerial surveillance;
- Vessel surveillance;
- Oil Spill Trajectory Modelling (OSTM);
- Satellite Tracking Buoys; and
- Satellite surveillance.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 351 / 427
			Validity Status	Rev. No. B	

For vessel-based spills, the responsibility for operational monitoring lies with AMSA (Commonwealth waters) and the relevant control agency (for State/Territory waters). For spills from hydrocarbon infrastructure this is the responsibility of the operator.

8.7.2.3 Oiled Wildlife Response

Due to the characteristics of the MDO being a light, non-persistent hydrocarbon, and the small volume release, large numbers of oiled wildlife are unlikely to occur. The potential impacts that may occur in the unlikely event that an Oiled Wildlife Response (OWR) is required has been assessed below as a cautionary measure. The impacts on wildlife are determined by the types of fauna present, the type of oil spilled and the extent of exposure.

OWR can consist of a number of approaches depending on the response required, including:

- Wildlife reconnaissance - assessment of the wildlife potentially at risk;
- Hazing (deterrence or displacement strategies by auditory, visual, physical deterrents);
- Pre-emptive capture (capture of wildlife at risk prior to oiling and relocation);
- Establishment of any staging centres (if required); and
- Rehabilitation of any oiled fauna (e.g. capture, field stabilisation, transport, veterinary examination, triage, stabilisation, cleaning, rehabilitation, release).

8.7.2.4 Operational and Scientific Monitoring Program

Eni have developed an Operational and Scientific Monitoring Program (OSMP) to meet the requirements of the OPGGS(E) Regulations (Appendix F: OSMP). The OSMP is the principal tool for determining the extent, severity, and persistence of environmental impacts from an oil spill and allows titleholders to determine whether their environmental protection goals are met.

OSMP techniques vary, depending on the type of spill, location and status of the response. The use of vessels and aircraft may be required to undertake the techniques identified within the OSMP (Appendix F: OSMP).

8.7.3 Potential Environmental Impact

Potential risks that may arise through the implementation of response strategies are summarised in Table 8-9.

Table 8-9: Potential hazards from oil spill response techniques

Potential Hazards	Oil Spill Response Techniques			
	Source control	Monitor and Evaluate	Oiled Wildlife Response	Operational and Scientific Monitoring
Light emissions	x	✓	✓	✓
Noise emissions	x	✓	✓	✓
Atmospheric emissions	x	✓	✓	✓
Operational discharges	x	✓	✓	✓

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 352 / 427
				Validity Status	Rev. No. B	

Interaction with marine fauna	✓	✓	✓	✓
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The potential impacts and risks associated with vessel and aircraft activities, such as those identified within Table 8-9, are similar to those already evaluated within Section 7 and 8 of this EP. Due to the nature and scale of these activities, the evaluation is considered appropriate for any impacts and risks that may occur during source control, monitor and evaluate, and operational and scientific monitoring response activities. Therefore, these have not been considered further.

The environmental impacts that may arise as a result of OWR will be evaluated within this section as they have not been assessed previously in this EP. These include:

- Change in fauna behaviour; and
- Injury / mortality to fauna.

8.7.3.1 Marine Fauna

Change in fauna behaviour

Hazing of wildlife from impacted areas will result in a change of fauna behaviour. The presence of deliberate noise, such as auditory deterrence devices, may result in disturbance to species feeding, breeding, nesting, or resting. The physical displacement and exclusion of species may have a negative impact to a species if they can no longer access suitable feeding or breeding areas nearby. Exclusion from breeding sites and disrupting the ability for the species to return to a certain site may cause increased stress to be species, particularly species with high site fidelity.

Given the absence of shoreline contact and offshore islands within the EMBA, any OWR required is not anticipated to impact breeding or nesting sites; however, it is possible that impacts to species transiting or using the area for mating or foraging may occur (see Section 4.4 for further details of BIAs present within the EMBA). Therefore, OWR is expected to result in localised, short-term impacts to individuals and not affect species population or general ecosystem functioning. Injury / mortality of marine fauna

Incorrect handling of native marine fauna during capture, transportation, cleaning or rehabilitation steps has the potential to result in increased stress, injury, or mortality. To prevent these impacts, only authorised oiled wildlife responders, will approach and handle fauna. This will eliminate any handling impacts to fauna from untrained personnel and reduce the potential for distress, injury or death of a species. Furthermore, only trained response personnel from Eni, AMSA, Australian Marine Oil Spill Centre (AMOSC), the relevant state Control Agencies, and subject matter experts will be used to implement the response strategies to ensure best practice is undertaken and the risks are reduced.

Interactions with marine fauna are only expected to be limited to the duration of the response. Given, the nature and scale of the worst-case spill scenario identified for the activities within this EP, any impact are not expected to affect species population or general ecosystem functioning.

8.7.3.2 Residual risk summary

The worst-case residual severity to marine fauna from spill response operations is evaluated as Slight (1), given the relatively small scale of response that would be implemented.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 353 / 427
			Validity Status	Rev. No. B	

The likelihood of an impact to marine fauna occurring as a result of oil spill response operations is considered Rare (A).

Therefore, the residual risk of oil spill operations due to the petroleum activities is considered Low.

8.7.4 Environmental Performance Outcomes and Control Measures

EPOs relating to this event include:

- Activities are managed in accordance with navigational and safety requirements (EPO-03);
- No significant decrease in air quality (EPO-04);
- No injury or mortality to EPBC Act listed fauna during operational activities (EPO-05);
- No unplanned objects, emissions or discharges to sea or air (EPO-12);
- No unplanned discharges to sea of untreated sewage, greywater, putrescible wastes, bilge, and deck drainage (EPO-07);
- No unplanned discharge of oily water or chemicals (EPO-08);
- Reduce impacts from oil spill response operations through incident planning (EPO-14); and
- No unplanned interactions with other users (EPO-15).

CMs relating to this risk include:

- Navigation equipment and procedures (CM-06);
- International air pollution prevention certificate (CM-11);
- Vessel fuel quality (CM-10);
- Regulations and measures for interacting with marine fauna (CM-15);
- Vessels comply with Marine Order 96 (Marine pollution prevention – sewage) (CM-17);
- Vessels comply with Marine Order 95 (Marine pollution prevention – garbage) (CM-18);
- Vessels comply with Marine Order 91 (Marine pollution prevention – oil) (CM-19);
- NOPSEMA-accepted OPEP and OSMP (CM-33); and
- Trained Oiled Wildlife Responders (CM-38).

EPSs and MC relating to the above are presented in Section 9.

For EPOs, EPSs and MCs relating to spill response in the event of a spill during this activity, refer to the Petrel-3 and Petrel-4 Monitoring and Decommissioning OPEP (Appendix E: OPEP) and OSMP (Appendix F: OSMP).

8.7.5 As Low As Reasonably Practicable Demonstration

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 354 / 427
				Validity Status	Rev. No. B	

Demonstration of ALARP			
Type	Control management	Evaluation	Adoption?
Eliminate	N/A	N/A	N/A
Substitute	Vessel fuel quality (in compliance with Marine Order 97)	Reduces emissions through use of low sulphur fuel in accordance with Marine Order 97. Minimal cost as vessels are required to comply with Marine Orders.	✓ (CM-10)
Engineering	Navigation equipment and procedures	Ensures the vessels are seen by other marine users, thereby reducing the risk of collisions. A requirement under Marine Orders, requires vessels to have navigational equipment to avoid collisions.	✓ (CM-06)
	Vessels are equipped with oily water prevention system and IMO-approved oil filtering equipment	Reduces potential impacts of planned discharge of oily water to the environment with minor administrative and maintenance cost. In compliance with Marine Order 91.	✓ (CM-19)
Isolation	Capture of contaminated waters/bilge water on vessels	Fixed equipment, such as engines and generators, are contained and captured in the bilge water tank for treatment via the OIW separator (on vessels). In compliance with Marine Order 91.	✓ (CM-19)
Administrative	Vessel air pollution prevention certificate (in compliance with Marine Order 97)	Reduces probability of potential impacts to air quality. Minimal cost as vessels are required to comply with Marine Orders.	✓ (CM-11)
	Regulations and measures for interacting with marine fauna (e.g., EPBC Regulations 8 (Part 8))	Minor cost in complying. Reduces risk of physical and behavioural impacts to marine fauna. While not directly relating to survey noise, EPBC Regulations include restrictions such as vessel speed and direction when in proximity to marine fauna and are based on legislated requirements.	✓ (CM-15)
	Implementation of measures in Marine Order 95 (Marine pollution prevention – garbage)	Marine Order 95 reduces potential impacts of inappropriate discharge of sewage. Stipulates putrescible (food) waste disposal conditions and limitations. Environmental benefit outweighs the minor administrative costs in implementing the Marine Order.	✓ (CM-18)
	Implementation of measures in Marine Order 96 (Marine pollution prevention – sewage)	Marine Order 96 reduces the probability of garbage being discharged to sea. Environmental benefit outweighs the minor administrative costs in implementing the Marine Order.	✓ (CM-17)

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 355 / 427
				Validity Status	Rev. No. B	

Demonstration of ALARP			
Type	Control management	Evaluation	Adoption?
	Vessels comply with Marine Order 91 (Marine pollution prevention – oil)	Marine Order 91 stipulates the oily water prevention system and treatment requirements for OIW discharge from vessels. Environmental benefit outweighs the minor administrative costs in implementing the Marine Order.	✓ (CM-19)
	Competent Incident Management Team (IMT) and oil spill responder personnel	Considered a standard spill response control. IMT establishment identified within the OPEP. An accepted OPEP is a legislative requirement under the OPGGS Act.	✓ (CM-33)
	Vessel SOPEP/emergency management plan	Environmental benefit outweighs minor costs in implementing and testing the vessel spill response plan (SOPEP), which contains plans to prevent spills reaching the marine environment. A SOPEP is a requirement under MARPOL Annex 1 (all vessels larger than 400 gross tonnage have a SOPEP or SMPEP outlining options to control the source of a hydrocarbon spill).	✓ (CM-24)
	NOPSEMA-accepted OPEP and OSMP	Implement spill response preparedness, training, competency and control measures as per NOPSEMA-accepted OPEP and OSMP. Regulatory requirement.	✓ (CM-33)
	Trained Oiled Wildlife Responders.	Only trained responders to undertake oiled wildlife response activities as required under the direction of the Control Agency.	✓ (CM-38)

8.7.6 Acceptability Demonstration

Demonstration of acceptability	
Compliance with Legal Requirements, Laws and Standards	Response vessels will comply with the EPBC Regulations 2000 Part 8 and the Australian National Guidelines for Whale and Dolphin Watching (DEE, 2017b). Response vessels will comply with relevant MARPOL/Marine Order requirements as detailed throughout Sections 7 and 9.
Policy Compliance	The management of response operations is aligned with Eni policies and standards. The residual risk is Low, which is acceptable. The EPO and the controls that will be implemented are consistent with Eni internal requirements
Social Acceptability	To date, no relevant person concerns have been raised regarding spill response operations (refer Section 5). An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 356 / 427
				Validity Status	Rev. No. B	

Area Sensitivity/ Biodiversity	<p>There are BIAs for 4 marine turtle species; and BIAs for 2 seabird species that overlap the EMBA. There is one marine park (Ocean Shoals AMP), and 3 KEFs that overlap the EMBA. There are no National Heritage Places or Ramsar wetlands within the EMBA. The EMBA does not contact the shoreline.</p> <p>Eni has considered information contained in relevant recovery plans and approved conservation advice for EPBC Act listed species that identify chemical discharges, pollution and habitat degradation or modification as a threat (as listed in Table 2-3), which may result from spill response operations. This includes:</p> <p>Conservation Advice:</p> <ul style="list-style-type: none"> • Approved Conservation Advice for <i>Balaenoptera borealis</i> (Sei Whale) • Approved Conservation Advice for <i>Balaenoptera physalus</i> (Fin Whale) • Approved Conservation Advice on <i>Aipysurus apraefrontalis</i> (Short Nosed Sea Snake) • Approved Conservation Advice on <i>Aipysurus foliosquama</i> (Leaf-Scaled Sea Snake) • Approved Conservation Advice for <i>Pristis clavate</i> (Dwarf Sawfish) • Approved Conservation Advice for Green Sawfish • Approved Conservation Advice for <i>Pristis pristis</i> (Large Tooth Sawfish) • Approved Conservation Advice for <i>Glyphis garricki</i> (Northern River Shark) • Approved Conservation Advice for <i>Glyphis glyphis</i> (Speartooth Shark) • Approved Conservation Advice for <i>Rhincodon typus</i> (Whale Shark). <p>Recovery/Management Plans</p> <p>The petroleum activity is consistent with the objectives and actions of the plans identified below through adoption of EPO-13 and the control measures outlined in Section 8.7.4:</p> <ul style="list-style-type: none"> • Conservation Management Plan for the Blue Whale 2015–2025 (DoE, 2015) identifies habitat modification, including acute and chronic chemical discharge, as a threat. There are no BIAs for the blue whale overlapping the EMBA. There are no explicit relevant management actions in this plan. The petroleum activity is consistent with the long-term recovery objective to 'minimise anthropogenic threats to allow the conservation status of the blue whale to improve so that it can be removed from the threatened species list under the EPBC Act' through the adoption of the EPO. • Recovery plan for Marine Turtles in Australia (DEE, 2017) identifies acute chemical and terrestrial discharge as a threat. Foraging BIAs for the green, flatback, loggerhead and Olive Ridley turtle overlap the EMBA. Action Area A4 to minimise chemical and terrestrial discharge is met through the adoption of the EPO. • Sawfish and River Shark Multispecies Recovery Plan (Commonwealth of Australia, 2015) lists habitat degradation or modification as a threat. No habitat critical or BIAs have been identified for sawfish or river sharks within the EMBA. The petroleum activity is consistent with Objective 5 of this plan to 'reduce and, where possible, eliminate adverse impacts of habitat degradation and modification on sawfish and river shark species', through adoption of the EPO. • Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) (2013) identifies habitat modification as a threat. No habitat critical or BIAs have been identified for white sharks within the EMBA. The petroleum activity is consistent with the objective of this plan to ensure anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future through adoption of the EPO. • Recovery Plan for the Grey Nurse Shark (<i>Carcharias taurus</i>) (DoE, 2014a) identifies pollution as a threat. No habitat critical or BIAs for the grey nurse
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 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 357 / 427
			Validity Status	Rev. No. B	

	<p>shark have been identified in the EMBA. The petroleum activity is consistent with the objective of this plan to ensure anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future, through the adoption of the EPO.</p> <p>Australian Marine Park zoning principles and objectives were also considered:</p> <ul style="list-style-type: none"> • North Marine Parks Network Management Plan (2018). <p>Recovery Plans/Conservation Advice for other EPBC Act listed threatened and migratory species that may occur in the ZPI or EMBA do not identify chemical discharges, pollution and habitat degradation or modification as a key threat or have explicit relevant objectives or management actions related to these threats.</p> <p>The control measures outlined in Section 8.7.4 are consistent with the objectives and actions in these publications. The petroleum activities are not inconsistent with the objectives and actions in the relevant recovery plans/conservation advice.</p>
ESD Principles	<p>Petrel response operations are consistent with the principles of ESD because:</p> <ul style="list-style-type: none"> • The impacts associated with the response operations do not result in 'threats of serious or irreversible harm' as detailed within the EPBC Act and biodiversity and ecological integrity will be maintained • There are no identified health, diversity or productivity impacts that may affect the biodiversity or ecological function for future generations.
ALARP	The residual risk has been demonstrated to be ALARP.

Given the controls that will be implemented, the residual risk is considered Low, which is acceptable in accordance with Eni's acceptability criteria (Table 6-5). Potential impacts are acceptable and ALARP.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 358 / 427
			Validity Status	Rev. No. B	

9 ENVIRONMENT OUTCOMES, STANDARDS AND MEASUREMENT CRITERIA

Section 21(7) of the OPGGS Regulations requires an EP to include EPOs, EPSs and MC that:

- Address legislative and other controls that manage environmental features of the activity;
- Define objectives and set standards for measuring Eni's performance in protecting the environment during its operations; and
- Include measurement criteria for assessing whether performance outcomes and standards have been met.

The terms used for measuring the environmental performance are defined below:

- EPO – is a statement of the goal that Eni aims to achieve with regard to the management of a given hazard;
- EPS – is a statement of performance required of a system, an item of equipment, a person or a procedure that is used as a basis for managing environmental risk. Generally, a number of standards may relate to a single objective; and
- MC – defines how the application of the performance standard will be verified. Several measurement criteria may relate to a single performance standard. Measurement criteria are defined in a manner that enables efficient inspection and audit against the performance outcomes and allows for an audit trail.

To ensure environmental risks and impacts will be of an acceptable level, EPOs have been defined and are listed in Table 9-1. These outcomes will be achieved by implementing the identified control measures to the defined EPSs.

Table 9-1: Environmental Performance Outcomes

Reference	Environmental Performance Outcomes
EPO-01	Seabed disturbance is limited to planned activities.
EPO-02	Information is provided to relevant persons to manage impacts on their functions, interests, and activities.
EPO-03	Activities are managed in accordance with navigational and safety requirements.
EPO-04	No significant decrease in air quality.
EPO-05	No injury or mortality to EPBC Act listed fauna during operational activities.
EPO-06	No significant impacts to marine fauna from light emissions.
EPO-07	No unplanned discharges to sea of untreated sewage, greywater, putrescible wastes, bilge, and deck drainage.
EPO-08	No unplanned discharge of oily water or chemicals.
EPO-09	No impact to water quality or marine biota greater than a severity level of 2 from decommissioning discharges.
EPO-10	Reduce impacts on other marine users through the provision of information to relevant stakeholders such that they are able to plan for their activities and avoid unexpected interference.
EPO-11	No introduction of invasive marine species.
EPO-12	No unplanned objects, emissions or discharges to sea or air.
EPO-13	No loss of containment of hydrocarbons to the marine environment.
EPO-14	Reduce impacts from oil spill response operations through incident planning.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 359 / 427
			Validity Status	Rev. No.	
	B				

EPO-15	No unplanned interactions with other users.
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9.1 Control Measures and Performance Standards

The CMs that will be used to manage identified environmental impacts and risks, and the associated statements of performance required of the control measure (as in, EPSs) are listed in Table 9-2.

A separate set of performance standards based on the oil spill response operational control measures are included in the Petrel-3 and Petrel-4 Monitoring and Decommissioning OPEP (Appendix E: OPEP).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 360 / 427
			Validity Status	Rev. No. B	

Table 9-2: Control measures and environmental performance standards

Control measure	Environmental performance standard	Measurement criteria
CM-01 MODU move and anchoring procedure (including mooring analysis)	EPS-1.1 For each well location, a MODU mooring plan, derived from ISO Standard compliant mooring analysis and seabed surveys, will be developed to ensure the mooring spread and anchor locations are appropriate for the environment, and adequate tensioning of mooring is applied and maintained.	MC-1.1 MODU mooring plan
CM-02 MODU station keeping system (for DP and DP-assisted MODU option)	EPS-2.1 For a dynamically positioned (DP) MODU, DP beacons that have been deployed to sea are detached from their clump weights and recovered prior to MODU departure to mitigate consequences from objects remaining in the marine environment.	MC-2.1 Recovery recorded in an operational report
CM-03 Recovery of all deployed equipment	EPS-3.1 All equipment deployed during any activity will be recovered.	MC-3.1 Survey records
CM-04 Post-activity ROV survey	EPS-4.1 An as left survey will be undertaken at each location in the vicinity of the MODU by an ROV. The survey will document the seabed condition at departure and any equipment identified would be recovered by an ROV (if small / light enough).	MC-4.1 Survey records
CM-05 Lifting Operations Standard (ENI HSE ST 007)	EPS-5.1 Lifting operations have been performed in accordance with Lifting Operations Standard (ENI HSE ST 007), including: <ul style="list-style-type: none"> • competency of persons undertaking lift • planning and preparation process for undertaking lifts. 	MC-5.1 Records show compliance with Lifting Operations Standard (ENI HSE-ST-007).
CM-06 Navigation equipment and procedures	EPS-6.1 Navigation equipment and procedures on vessels and MODU compliant (where applicable) with standard maritime safety/navigation procedures including AMSA Marine Order Part 30 (Prevention of Collisions) 2009, including (where applicable): <ul style="list-style-type: none"> • adhering to steering and sailing rules including maintaining lookouts (e.g., visual, hearing, radar), proceeding at safe speeds, assessing risk of collision and taking action to avoid collision (monitoring radar) • adhering to navigation light display requirements, including visibility, light position/shape appropriate to activity • adhering to navigation noise signals as required. EPS-6.2 Navigation equipment and procedures on vessels and MODU compliant (where applicable) with standard maritime safety/navigation procedures, including AMSA Marine Order Part 21 (Safety of Navigation and Emergency Procedure) 2012, including: <ul style="list-style-type: none"> • adherence to minimum safe manning levels • maintenance of navigation equipment in efficient working order (compass/radar) • navigational systems and equipment required are those specified in Safety of Life at Sea (SOLAS) Chapter V (Regulation 19) • installation of Automatic Identification System as required by vessel class in accordance with SOLAS Chapter V (Regulation 19). 	MC-6.1 Vessels and MODU have a current (<12 months) International Marine Contractors Association or Offshore Vessel Inspection Database certificate prior to mobilisation and show compliance with the applicable Marine Order requirements.
CM-07 Consultation with relevant persons (including notification requirements)	EPS-7.1 Eni has provided consultation update to relevant persons, and all correspondence has been recorded in the consultation database.	MC-7.1 Records of transmittal and stakeholder database.
	EPS-7.2 The Australian Hydrographic Office (AHO) is notified four weeks prior to commencing activities so they can then issue a Notice to Mariners.	MC-7.2 Notice to AHO completed.
	EPS-7.3 The AMSA ARC (as part of marine safety division) will be notified of the activities four weeks prior to mobilisation to ensure navigation AUSCOAST warnings can be issued and kept up to date.	MC-7.3 Notice to AMSA ARC completed.
CM-08	EPS-8.1	MC-8.1

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 361 / 427
			Validity Status	Rev. No. B	

Control measure	Environmental performance standard	Measurement criteria
Drilling contractor bulk solids transfer procedure.	Bulk solids transferred in accordance with bulk transfer procedures to reduce the risk of an unintentional release to sea and air. The procedure includes standards for: <ul style="list-style-type: none"> • hose integrity: certified hoses • hose flotation: bulk hoses in the water fitted with floatation collars • valve alignment: a MODU supervisor checks that all valves are lined up correctly • communications: constant radio communications between MODU control room and vessel • inventory control: MODU control room monitors tank fill levels or air vents watched to detect tank overflow • emergency shutdown available and tested before each transfer operation. 	Completed procedural documents, for example work permits, job safety analysis forms, checklists, etc. MC-8.2 Spill details contained in incident documentation
CM-09 Waste Incineration	EPS-9.1 No incineration during Petrel-3 and Petrel-4 petroleum activities	MC-9.1 Completed waste record book or recording system.
CM-10 Vessel fuel quality	EPS-10.1 Low sulphur fuel is used on vessels, in accordance with Marine Order 97.	MC-10.1 Records of fuel type for vessels show use of low sulphur fuel (in accordance with Marine Order 97).
CM-11 International air pollution prevention certification	EPS-11.1 Vessels and MODU comply with MARPOL 73/78 Annex VI, as applied in Australia under the Commonwealth Protection of the Sea (Prevention of Pollution from Ships) Act 1983 (Part IIID Prevention of air pollution), and Marine Order 97 (marine pollution prevention – air pollution) 2007, as required by vessel class: <ul style="list-style-type: none"> • vessels and MODU vessels will have valid international air pollution prevention certificate where required. 	MC-11.1 MODU and vessels have valid international air pollution prevention certificate where required.
CM-12 Ozone-depleting substance handling procedures	EPS-12.1 Ozone-depleting substances (ODS) managed in accordance with MARPOL Annexe VI to reduce the risk of an accidental release of ODS to air	MC-12.1 Completed ODS record book or recording system
CM-13 Eni E&P Marine Manual (Marine assurance standard)	EPS-13.1 MODU, vessels selected and on-boarded are operated, maintained and manned in accordance with Eni E&P Marine Manual which includes industry standards (Marine Orders) and regulatory requirements.	MC-13.1 Completed documentation demonstrates procedure requirements
CM-14 Planned Maintenance System (PMS)	EPS-14.1 Documented maintenance program is in place for equipment on MODU and vessels that provides a status on the maintenance of equipment.	MC-14.1 MODU and vessels daily/weekly records
		MC-14.2 Computerized Maintenance Management System (CMMS) records
		MC-14.3 MODU contractor written verification demonstrates compliance with PMS.
		MC-14.4 Vessel contractor written verification demonstrates compliance with PMS.
		MC-14.5 IMCA Common Marine Inspection Document (CMID)
	EPS-14.2 Engines and associated equipment that require cooling by water will be maintained in accordance with the vessel/ MODU PMS so that they are operating within accepted parameters.	MC-14.6 PMS records verify that the equipment is maintained to schedule.
	EPS-14.3 Processing equipment must be capable of comminuting food waste to a size of <25mm. The macerator will be maintained in accordance with manufacturer specifications.	MC-14.7 Records show routine completion of maintenance in accordance with manufacturer specifications or preventative maintenance system for the macerators.
	EPS-14.4 The Sewage Treatment Plan (STP) will be maintained in accordance with manufacturer specifications.	MC-14.8

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 362 / 427
			Validity Status	Rev. No. B	

Control measure	Environmental performance standard	Measurement criteria
		Records show routine completion of maintenance in accordance with manufacturer specifications or preventative maintenance system for the STP.
CM-15 Regulations and measures for interacting with fauna	EPS-15.1 PBC Regulations 2000 – Part 8 for interacting with marine fauna are enforced during the activities, including Part 8 Division 8.1 (Regulation 8.05), which requires that: <ul style="list-style-type: none"> a vessel will not travel greater than 6 knots within 300m of a whale (caution zone) and not approach closer than 100m from a whale a vessel will not approach closer than 50m of a dolphin or 100m of a whale (with the exception of animals bow riding). EPS-15.2 EPBC Regulations 2000 – Part 8 for interacting with marine fauna are enforced during the activities, including Part 8 Division 8.1 (Regulation 8.06) – Interacting with calves, which requires that: <ul style="list-style-type: none"> vessel will not approach closer than 300m to a calf (whale or dolphin) (the exclusion zone) then the vessel must be immediately stopped and must: <ul style="list-style-type: none"> turn off the vessel’s engines, or disengage the gears, or withdraw the vessel from the caution zone at a constant speed of less than 6 knots. EPS-15.3 Helicopters will comply with EPBC Regulations 2000 – Part 8 Division 8.1 (Regulation 8.07), which requires that: <ul style="list-style-type: none"> helicopters shall not operate lower than 1650 feet or within a horizontal radius of 500m of a cetacean known to be present in the area, except for take-off and landing. 	MC-15.1 Conformance to EPBC Regulations 2000 – Part 8 is checked on receipt of marine fauna sighting datasheets.
CM-16 Lighting will be used as required for safe work conditions and navigational purposes.	EPS-16.1 Vessel/MODU navigation lighting and equipment is compliant with COLREGS/Marine Orders 30: Prevention of Collisions, and with Marine Orders 21: Safety of Navigation and Emergency Procedures.	MC-16.1 Vessel/MODU certification confirms compliance with applicable regulations
CM-17 Vessels and MODU comply with Marine Order 96 (Marine pollution prevention – sewage)	EPS-17.1 Vessels and MODU comply with Marine Order 96: Marine pollution prevention – sewage (as appropriate to vessel class), which requires: <ul style="list-style-type: none"> a valid International Sewage Pollution Prevention Certificate, as required by vessel class an ASMA-approved sewage treatment plant a sewage comminuting and disinfecting system. a sewage holding tank sized appropriately to contain all generated waste (black and grey water) discharge of sewage which is not comminuted or disinfected will only occur at a distance of more than 12 nm from the nearest land discharge of sewage which is comminuted or disinfected using a certified approved sewage treatment plant and will only occur at a distance of more than 3 nm from the nearest land. discharge of sewage will occur at a moderate rate while support vessel is proceeding (> 4 knots), to avoid discharges in environmentally sensitive areas. 	MC-17.1 Records demonstrate vessels have valid international sewage pollution prevention certificates.
CM-18 Vessels and MODU comply with Marine Order 95 (Marine pollution prevention – garbage)	EPS-18.1 Vessels and MODU comply with Marine Order 95 (Marine pollution prevention – garbage), which requires: <ul style="list-style-type: none"> putrescible waste will only be discharged to sea if comminuted to 25 mm or less and discharged en route when greater than 3 nm from the ‘territorial sea baseline’ if putrescible waste is not comminuted to 25 mm or less, it will be discharged greater than 12 nm from the territorial sea baseline while en route. 	MC-18.1 Records demonstrate vessels and MODU are compliant with Marine Order 95: Marine pollution prevention – garbage (as appropriate to vessel class).
CM-19 Vessels and MODU comply with Marine Order 91 (Marine pollution prevention – oil)	EPS-19.1 Vessels and MODU comply with Marine Order 91 (Marine pollution prevention – oil) (as relevant to vessel class) requirements, which include mandatory measures for the processing of oily water prior to discharge including:	MC-19.1 Records demonstrate vessels are compliant with Marine Order 91: Marine pollution prevention – oil (as appropriate to vessel).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 363 / 427
			Validity Status	Rev. No. B	

Control measure	Environmental performance standard	Measurement criteria
	<ul style="list-style-type: none"> Machinery space bilge/oily water shall have IMO approved oil filtering equipment (oil/water separator) with an on-line monitoring device to measure OIW content to be less than 15ppm prior to discharge. IMO-approved oil filtering equipment shall also have an alarm and an automatic stopping device or be capable of recirculating in the event that OIW concentration exceeds 15ppm. A deck drainage system shall be capable of controlling the content of discharges for areas of high risk of fuel, oil and grease or hazardous chemical contamination. There shall be a waste oil storage tank available, to restrict oil discharges. In the event that machinery space bilge and deck drainage discharges cannot meet the oil content standard of <15ppm without dilution or be treated by an IMO approved oil/water separator, they will be contained on-board and disposed of onshore. 	
CM-20 Hazardous and non-hazardous waste management processes	EPS-20.1 Vessels and MODU comply with measures outlined in Marine Order 95 (Marine pollution prevention – garbage) as required by vessel class: <ul style="list-style-type: none"> vessel(s) will have a Garbage Management Plan in place which outlines procedures for handling storing, processing and disposing of garbage. 	MC-20.1 Compliant Garbage Management Plan in place for vessels and MODU.
	EPS-20.2 A garbage record book shall be maintained with details of non-hazardous and hazardous waste volumes generated and transferred for onshore recycling or disposal.	MC-20.2 Garbage record book is maintained and available for the vessels and MODU.
	EPS-20.3 All hazardous and non-hazardous wastes generated at sea are retained on vessel/MODU and disposed of onshore by a licenced waste management contractor (excluding putrescible waste and sewage).	MC-20.3 Hazardous and non-hazardous wastes records maintained and available for the vessels and MODU.
	EPS-20.4 All personnel will be notified of the correct waste management procedures through the induction process.	MC-20.4 Waste management procedures included in induction material.
CM-21 Chemical risk assessment process	EPS-21.1 Cement, clean-up fluids and WBM chemicals intended or likely to be discharged into the marine environment are approved before use in accordance with the chemical risk assessment process detailed in Section 3.12.	MC-21.1 ALARP assessment documentation shows chemicals requiring further assessment are ALARP and selected in accordance with the chemical assessment process detailed in Section 3.12.
CM-22 Cuttings management system	EPS-22.1 All well returns to the MODU are diverted to shale shakers, except if drilling with seawater. The recovered drilling fluid is recycled to the mud pits and separated drilled cuttings/solids diverted overboard. If drilling with seawater, cuttings/solids returned to the MODU are diverted overboard.	MC-22.1 Daily Mud Report.
	EPS-22.2 The shale shakers are fitted with screens that meet API standards for solids removal particle size cut points.	MC-22.2 Inspection records.
	EPS-22.3 Centrifuges may be used as required to remove additional finer drilled cuttings/solids that are too small for the shale shakers to remove.	MC-22.1 Daily Mud Report.
	EPS-22.4 SBM will not be used during the petroleum activities.	MC-22.4 Completed operational reports.
CM-23 Eliminate discharge of excess barite/bentonite and cement at the end of drilling by returning product to shore or passing the product to other operators	EPS-23.1 Excess cement is not discharged as a bulk product at the end of drilling.	MC-23.1 Records show that cements have not been discharged as bulk products and have been dealt with by other means (e.g., passed to next operator). It is intended to either pass cement to the next operator, or return to shore for disposal, unless safety risks in handling the bulks offshore and onshore are not able to be managed to a tolerable level as defined through a safety risk assessment process

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 364 / 427
			Validity Status	Rev. No. B	

Control measure	Environmental performance standard	Measurement criteria
		and evidenced formally within a safety risk assessment report.
	EPS-23.2 Excess bentonite or barite are not discharged as a bulk product at the end of drilling, providing always that safety risks in handling the bulks offshore and onshore are managed to ALARP and are tolerable.	MC-23.2 Records show that bentonite or barite have not been discharged as bulk products and have been dealt with by other means (e.g., passed to next operator). It is intended to either pass cement to the next operator, or return to shore for disposal, unless safety risks in handling the bulks offshore and onshore are not able to be managed to a tolerable level as defined through a safety risk assessment process and evidenced formally within a safety risk assessment report.
CM-24 Quality control for barite and bentonite	EPS-24.1 Contaminant limit concentrations in barite: <ul style="list-style-type: none"> Mercury (Hg) – 1 mg/kg dry weight in stock barite Cadmium (Cd) – 3 mg/kg dry weight in stock barite 	MC-24.1 Records show barite used for the drilling meets the below standard: <ul style="list-style-type: none"> Mercury (Hg) – 1 mg/kg dry weight in stock barite Cadmium (Cd) – 3 mg/kg dry weight in stock barite
CM-25 AHO Nautical charts	EPS-25.1 Wellhead is charted on AHO nautical charts so that marine users are aware of its location, they can therefore avoid the wellhead if required thus reducing snag risk	MC-25.1 Eni correspondence with AHO
	EPS-25.2 Marine users will not be excluded from the area	MC-25.2 Consultation records
CM-26 Implementation of an IMS risk assessment tool	EPS-26.1 MODU and vessels to be risk assessed (e.g., the DPIRD vessel check tool or similar), demonstrating support vessels they are at 'low risk' of introducing invasive marine species. IMS management measures will be applied to reduce IMS risk to 'low risk'.	MC-26.1 Completed vessel check report demonstrating MODU and vessels are 'low risk' of IMS.
	EPS-26.2 Vessel check assessment has been reviewed or completed by a member of the Eni HSE Team.	MC-26.2 Records show vessel check assessment has been reviewed completed by member of the Eni HSE Team
CM-27 Ballast water management	EPS-27.1 Compliance with Australian Ballast Water Management Requirements (as defined under the <i>Biosecurity Act 2015</i> , aligned with the International Convention for the Control and Management of Ships' Ballast Water and Sediments). This includes operators of all vessels answering biofouling questions on a pre-arrival report prior to entering Australia.	MC-27.1 Administrator-approved ballast water management plan on vessels. Completed ballast water record book or log.
CM-28 Biofouling management	EPS-28.1 Vessels and MODU have a Biofouling Management Plan and record book consistent with the International Maritime Organization 2011 Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species (IMO Biofouling Guidelines).	MC-28.1. Records show vessel Biofouling Management Plan and record book in place on MODU and vessels.
CM-29 Procedures to reduce the potential for loss of non-hazardous and hazardous waste and dropped objects	EPS-29.1 MODU Safety Case includes the following control measures for dropped objects that reduce the risk of objects entering the marine environment: <ul style="list-style-type: none"> Lifting equipment certification and inspection. Lifting crew competencies. Heavy-lift procedures. Preventative maintenance on cranes. 	MC-29.1 NOPSEMA-accepted Safety Case. Completed inspection checklist. Details contained in incident documents.
	EPS-29.2. Lifting operations managed in accordance with MODU work instructions or procedures.	MC-29.2 MODU work instructions or procedures.
CM-30 Dropped objects to be retrieved where possible	EPS-30.1	MC-30.1 Fate of dropped objects detailed in incident documents.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 365 / 427
			Validity Status	Rev. No. B	

Control measure	Environmental performance standard	Measurement criteria
	Objects dropped overboard are recovered to mitigate the environmental consequences from objects remaining in the marine environment, unless the environmental consequences are negligible, or safety risks are disproportionate to the environmental consequences.	
CM-31 Hazardous chemical management procedures	EPS-31.1 For hazardous chemicals including hydrocarbons, the following standards apply to reduce the risk of an accidental release to sea: <ul style="list-style-type: none"> Storage containers closed when the product is not being used. Storage containers managed in a manner that provides for secondary containment in the event of a spill or leak. Storage containers labelled with the technical product name as per the safety data sheet (SDS). Spills and leaks to deck, excluding storage bunds and drip trays, immediately cleaned up. Storage bunds and drip trays do not contain free flowing volumes of liquid. Spill response equipment readily available. 	MC-31.1 Completed inspection checklist.
CM-32 Maritime Dangerous Goods Code	EPS-32.1 Dangerous goods managed in accordance with IMDG Code to reduce the risk of an environmental incident, such as an accidental release to sea or unintended chemical reaction.	MC-32.1 Completed Multimodal Dangerous Goods Form for OSV transfers. Completed inspection checklist.
CM-33 NOPSEMA-accepted OPEP and OSMP	EPS-33.1 In the event of an oil spill to sea, the OPEP requirements are implemented to mitigate environmental impacts.	MC-33.1 Completed incident documentation shows OPEP implemented as applicable.
	EPS-33.2 In the event of an oil spill to sea, the OSMP requirements are implemented to mitigate environmental impacts, as per initiation criteria.	MC-33.2 Completed incident documentation shows OSMP implemented as per initiation criteria.
CM-34 Vessel SOPEP/emergency management plan	EPS-34.1 Vessel has and implements a vessel emergency management plan or SOPEP pursuant to MARPOL Annex I	MC-34.1 Approved vessel emergency management plan or SOPEP
	EPS-34.2 Vessel emergency management plan or SOPEP spill response exercises conducted at least every three months to ensure personnel are prepared.	MC-34.2 Spill exercise records or evidence of a spill exercise.
CM-35 Bulk solid transfer procedure	EPS-35.1 Bulk solids transferred in accordance with bulk transfer procedures to reduce the risk of an unintentional release to sea. The procedures includes standards for: <ul style="list-style-type: none"> hose integrity: certified hoses hose flotation: bulk hoses in the water fitted with floatation collars valve alignment: a MODU supervisor checks that all valves are lined up correctly communications: constant radio communications between MODU control room and vessel inventory control: MODU control room monitors tank fill levels or air vents watched to detect tank overflow emergency shutdown available and tested before each transfer operation. 	MC-35.1 Completed procedural documents, for example work permits, job safety analysis forms, checklists, etc. Spill details contained in incident documentation.
CM-36 Remotely operated vehicle (ROV) inspection and maintenance procedures as per maintenance regime	EPS-36.1 Preventative maintenance on ROV completed as scheduled to reduce the risk of hydraulic fluid releases to sea.	MC-36.1 Maintenance records or evidence of maintenance in operational reports
	EPS-36.2 ROV pre-deployment inspection completed to reduce the risk of hydraulic fluid releases to sea.	MC-36.2 Completed pre-deployment inspection checklist
CM-37 Refuelling transfer procedures	EPS-37.1 Vessel/MODU contractor bunkering procedure implemented for all hydrocarbon vessel bunkering and helicopter refuelling activities includes the requirements for: <ul style="list-style-type: none"> a completed Permit to Work or Job Safety Analysis implemented for the hydrocarbon bunkering and refuelling operation visual monitoring of gauges, hoses, fittings and the sea surface during the operation hose checks before commencement. 	MC-37.1 Records demonstrate refuelling undertaken in accordance with contractor bunkering procedures.
	EPS-37.2	MC-37.2

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 366 / 427
			Validity Status	Rev. No. B	

Control measure	Environmental performance standard	Measurement criteria
	Bunkering is completed in accordance with the following: <ul style="list-style-type: none"> • All hoses that have a potential environmental risk after damage or failure shall be placed on a hose register that is linked to the MODU's preventative maintenance system. • There shall be dry-break couplings and flotation on fuel hoses. • There shall be an adequate number of appropriately stocked, located and maintained spill kits. • All bulk transfer hoses shall be certified for integrity before use (in accordance with OEM recommendations). 	Records confirm the MODU bunkering equipment complies with the management measures to prevent bunkering spills.
	EPS-37.3 Bunkering is not undertaken in adverse weather conditions and is addressed within a Job Safety Analysis.	MC-37.3 Records demonstrate consideration of daylight and weather conditions before undertaking bunkering and refuelling operations.
CM-38 Trained Oiled Wildlife Responders.	EPS-38.1 Oil wildlife responders to be trained and competent to prevent injury to wildlife during response activities.	MC-38.1 Records of training and/or qualification to be provided to be appropriate Control Agency.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 367 / 427
			Validity Status	Rev. No. B	

10 IMPLEMENTATION STRATEGY

The purpose of the implementation strategy section is to manage the activities and their associated environmental risks to ALARP and ensure environmental performance is monitored. Section 22(1) of the OPGGS Regulations requires that the EP contain an implementation strategy. To meet this requirement, this section:

- Describes the environmental management system for the activity, including specific measures to be used to ensure that, for the duration of the activity:
 - the environmental impacts and risks of the activity continue to be identified and reduced to a level that is as ALARP
 - control measures detailed in the environment plan are effective in reducing the environmental impacts and risks of the activity to as low as reasonably practicable and an acceptable level
 - environmental performance outcomes and standards set out in the environment plan are being met. [Section 22(2)]
- Establishes a clear chain of command and sets out the roles and responsibilities of personnel responsible for implementing, managing and reviewing the EP [Section 22(3)];
- Presents measures to ensure all personnel directly undertaking works or associated works related to the activity have the appropriate competencies and training and are aware of their responsibilities under this EP [Section 22(4)];
- Provides sufficient monitoring, recording, audit, management of non-conformance and review of the titleholder's environmental performance and the implementation strategy to ensure the environmental performance outcomes and standards in the environment plan are being met [Section 22(5)];
- Provides for sufficient monitoring of, and maintaining a quantitative record of, emissions and discharges (whether occurring during normal operations or otherwise), such that the record can be used to assess whether the environmental performance outcomes and standards in the environment plan are being met [Section 22(6)]; and
- Includes a process for maintaining an OPEP [Section 22(8)].

This section presents the implementation strategy for the Petrel-3 and Petrel-4 monitoring and decommissioning activities (the petroleum activities).

10.1 Systems, Practices and procedures

10.1.1 HSE Management System Overview

Eni's management of HSE matters is arranged hierarchically in three distinct levels, being:

3. Corporate-level Management System (Section 10.1.2)
4. Subsidiary (Eni Australia) level HSE Integrated Management System (HSE IMS) (Section 10.1.3)
5. Facilities Management Systems.

Within Eni Australia, HSE management is delivered at the regional and asset level through the Eni HSE IMS, which is the means by which all HSE hazards and risks are controlled. The HSE IMS refers to the totality of Eni Australia's management systems in terms of:

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 368 / 427
			Validity Status	Rev. No. B	

- The concepts, policies, strategies, HSE goals, processes, procedures and work instructions that comprise the formal content of the HSE IMS
- The organisational structures, communication systems, safety-related data, roles and responsibilities, competencies and training needed by the personnel
- The physical elements that are critical to safety (equipment, structures and engineered systems), including the codes and standards used to design and construct them.

10.1.2 Eni Corporate Management System

Eni Australia's HSE IMS conforms to Eni Natural Resources Policy & HSE Management System Guidelines. Five main Management System elements are shown in Figure 10-1 and incorporated into the Eni Australia HSE IMS.

Elements are largely based on the structure of the ISO 14001 and ISO 45001 series of standards and therefore provide a consistent and recognisable platform for managing HSE, while also ensuring the intent of the principle of continuous improvement is followed.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 369 / 427
			Validity Status	Rev. No.	
				B	

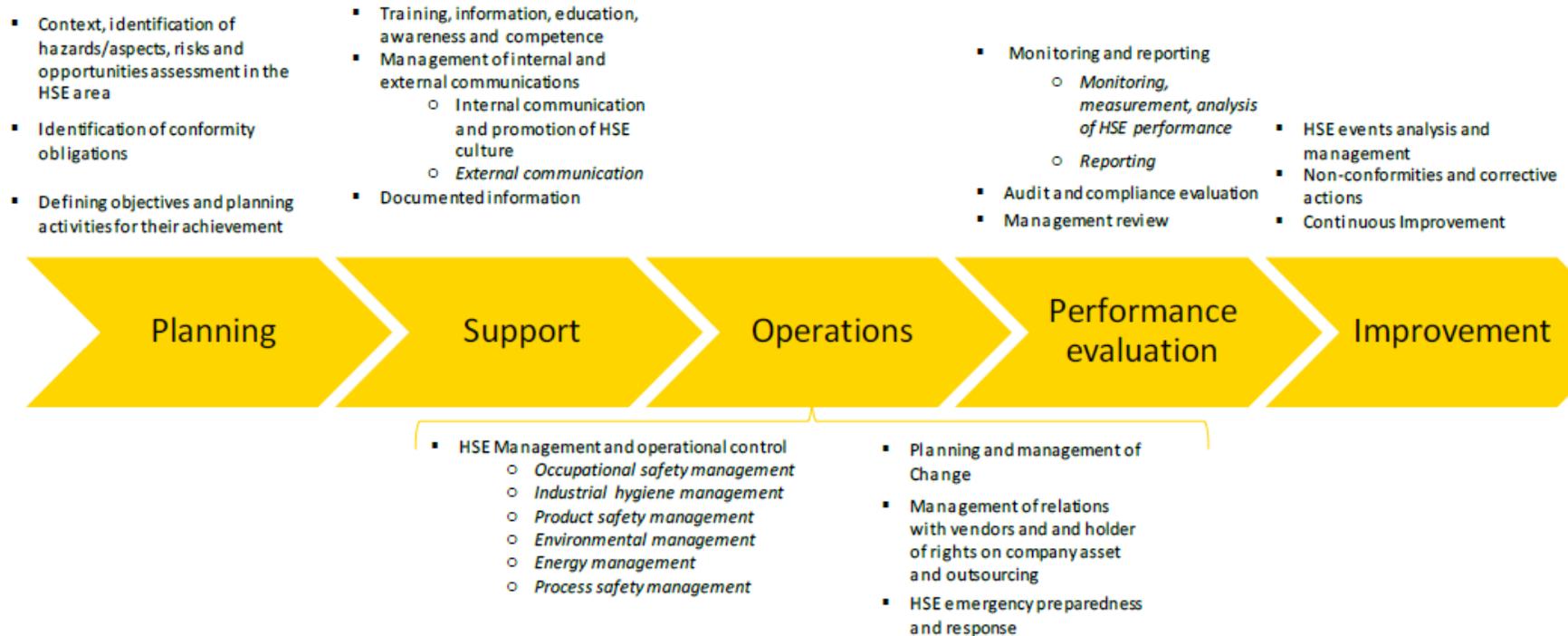


Figure 10-1: The HSE IMS Elements to achieve continual improvement

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 370 / 427
			Validity Status	Rev. No. B	

10.1.3 Regional Eni Australia HSE Integrated Management System

The Eni Australia HSE IMS, which covers petroleum activities, has been certified against the standards of:

- ISO 14001: Environmental Management System; and
- ISO 45001: Occupational Health and Safety Management.

Audits are performed to verify conformance with these standards and the Eni Natural Resources Corporate Directive.

The HSE Integrated Management System Framework Document (ENI-HSE-IN-002) serves as the key reference for Eni Australia's HSE IMS and is an information source for Eni employees and contractors.

The HSE Integrated Management System Framework Document (ENI-HSE-IN-002) provides an overview of the strategies that are used to manage HSE aspects of Eni Australia's operations, including emergency response, risk and security, and ensure their continual improvement in line with established objectives and targets. This document also describes the core elements of the HSE IMS and their interaction with related documentation.

The HSE Integrated Management System Framework Document (ENI-HSE-IN-002) sets out functional requirements for HSE management. Eni Australia has developed a set of supporting documents that provide standards, processes, guidelines and criteria and information by which the functional requirements can be met. The documents are generally classified as information, standards, procedures or specification documents.

The HSE standards cover a broad range of high-risk activities and outline Eni Australia's minimum requirements and expectations across its operations. The HSE standards complement the Eni Australia HSE Golden Rules and are based on worldwide IOGP and company best practices.

The HSE standards apply to all personnel working on Eni sites, whether they are an employee, contractor or visitor. The standards apply to activities where Eni has direct operational control but also apply to activities where Eni has a prevailing influence over the performance of its contractors and suppliers.

At the apex of the HSE IMS is Eni's HSE Statement (Appendix A: HSE Statement), which is approved by the Managing Director and provides a public statement of Eni's commitment to the environment and improving environmental performance.

10.2 Roles and Responsibilities

Table 10-1 summarises key roles and responsibilities of Eni personnel and contractors for implementing the petroleum activities.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 371 / 427
				Validity Status	Rev. No. B	

Table 10-1: Key roles and responsibilities for health, safety, and environment management for Petrel-3 and Petrel-4 petroleum activities

Role	Responsibilities
Onshore personnel	
Eni Well Operations Manager	<p>Reviewing this EP and confirming all environmental risks have been identified, mitigation strategies are effective and will be undertaken during field management and field management and petroleum activities, including emergencies or potential emergencies. Ensuring:</p> <ul style="list-style-type: none"> • Compliance with all environmental regulations and the EP • The requirements of the EP are communicated to third party contractors • All personnel are inducted and are aware of their environmental responsibilities • Environmental audits are undertaken on project vessels to verify compliance with the EP • All equipment is maintained and in an operable condition • Actions are tracked in an action register, implemented and closed out, including corrective actions identified during audits • Waste is managed on all vessels according to this EP. • Reporting all environmental incidents to the Eni Operations Manager and HSEQ Manager. • Ensuring all notifications are undertaken as per Table 10-3. • Reporting to NOPSEMA any environmental incident (as in, reporting 'reportable incidents' and 'recordable incidents') (Section 10.8.2).
Eni Well Operations Superintendent	<ul style="list-style-type: none"> • Ongoing communications with Offshore Installation Manager (OIM). • Reviewing this EP and confirming all environmental risks have been identified, mitigation strategies are effective and will be undertaken during field management and field management and petroleum activities, including emergencies or potential emergencies. • Ensuring compliance with all environmental regulations and the EP. • Reporting all environmental incidents to the Eni Drilling Manager, HSE Manager and IMT Leader.
HSEQ Manager (office-based)	<ul style="list-style-type: none"> • Reviewing this EP and confirming all environmental risks have been identified, mitigation strategies are effective and will be undertaken during activities, including emergencies or potential emergencies. • Providing and maintaining effective emergency response arrangements for project activities where there is potential environmental risk. • Performing incident investigations. • Submitting annual environmental compliance report to NOPSEMA.
Environmental Advisor (office-based)	<ul style="list-style-type: none"> • Reviewing HSE Management Plans for acceptability and ensuring compliance with this EP. • Reporting all incidents to NOPSEMA in accordance with Section 10.8.2. • Coordinating and reviewing environmental audits to ensure compliance with the agreed EPOs. • Providing advice in the event of an oil spill or other environmental incident.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 372 / 427
				Validity Status	Rev. No. B	

Role	Responsibilities
HSE Assurance Advisor	<ul style="list-style-type: none"> • NOPSEMA monthly environment reporting of 'recordable incidents'.
Eni IMT Leader	<ul style="list-style-type: none"> • Directing the Eni response in the event of an incident. • Notifying NOPSEMA of the details of reportable incidents and providing updates on the status of the incident • Notifying AMSA in the case of vessel incidents. • Communicating with IMT and Crisis Management Team (CMT), government, stakeholders, and media in the event of an incident.
Eni IMT Duty Officer	<ul style="list-style-type: none"> • Acting as the first point of contact in an incident. • Notifying the Eni IMT Leader of the incident.
Offshore personnel	
Eni Offshore Representative	<ul style="list-style-type: none"> • Reviewing this EP and confirming all environmental risks have been identified and mitigation strategies are effective and will be undertaken during activities, including emergencies or potential emergencies. • Notifying the Eni Operations Manager, HSEQ Manager and Well Operations Manager, should additional environmental risks arise during the activities that have not been identified in this EP. • Ensuring all offshore personnel comply with the health, safety and environmental requirements. • Ensuring all personnel receive the Eni environmental induction before commencing drilling activities. • Providing a daily log of activities and reporting reportable and recordable incidents to the Well Operations Manager. • In the event of an emergency, communicating between the support vessel(s) and the Eni IMT in Perth. • Implementing and complying with all operational plans, including this EP. • Ensuring all required plans, audits and reviews are undertaken in accordance with the regulatory requirements and as required by this EP. • Implementing and closing out actions in an action register. • Ensuring all monitoring is undertaken in accordance with this EP (Section 10.5) and data is made available to the Well Operations Manager. • Ensuring adherence to management and mitigation measures outlined to minimise interaction with cetaceans and other marine fauna. • Ensuring all whale interaction reports are submitted to the Environment Advisor. • Notifying NOPSEMA of the details of reportable incidents and providing updates about the status of the incident (Section 10.8.2). • Investigating hydrocarbon spills, should they occur.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 373 / 427
				Validity Status	Rev. No.	
					B	

Role	Responsibilities
MODU OIM/Vessel Master	<ul style="list-style-type: none"> • Ensuring full compliance with all applicable navigational safety standards and regulations. • Conducting emergency drills. • Supervising MODU/vessel crew to ensure they are fit for duty and undertaking work only within their area of qualification and training. • Monitoring, reporting, and taking appropriate action to remedy any MODU/vessel or equipment defects that may impact on safety and environmental performance of the vessel. • Maintaining logs with respect to MARPOL 73/78 regulations. • Ensuring all crew are appropriately qualified, trained and equipped for their roles on the MODU/vessel. • Ensuring MODU/vessel activities comply with the requirements of this EP. • Notifying all MODU/vessel-related incidents immediately to the Eni Site Representative.
MODU/vessel operators, technicians and crew	<ul style="list-style-type: none"> • Applying operating procedures in letter and in spirit. • Following good housekeeping procedures and work practices. • Encouraging improvement in environmental performance, wherever possible. • Immediately reporting environmental incidents or spillage of hydrocarbons or chemicals to the MODU OIM/Vessel Master.

10.3 Training

10.3.1 General Arrangements

All staff and contractors working on the petroleum activities must undertake an induction. The induction programs include:

- Company Induction:
 - Eni Golden Rules
 - Eni HSE IMS
 - Substance Abuse.
- Petrel-3 and Petrel-4 monitoring and decommissioning activities inductions:
 - Site Induction
 - Eni Environment Plan Awareness/Legislation:
 - environmental regulatory requirements
 - marine mammal interaction – requirement to record and report sightings of whales and dolphins
 - requirements for waste, segregation, labelling, handling, and storage
 - housekeeping and spill prevention
 - spill preparedness and response
 - environmental incident reporting
 - requirements for recording waste movements and transfers.
 - HSE Standards
 - Job Hazard Analysis
 - Petrel-3 and Petrel-4 Emergency Response arrangements
- Cultural Awareness Induction.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 374 / 427
				Validity Status	Rev. No. B	

Training is provided to Eni employees and contractors as appropriate in order to ensure that individuals have the skills, knowledge and competencies to fulfil their roles.

The Eni approach to training and development is managed under the Training and Development Procedure (ENI-HRO-PR-020), which describes the mechanisms by which training, and competency are managed and outlines the process by which operations staff are trained.

Eni uses a number of training matrices which define the competency requirements for the roles relevant for the petroleum activities, specifically:

- Emergency Response Training Matrix
- Induction & HSE Training Matrix
- Technical Training Matrix.

For each position, the training matrices indicate the minimum training requirements. An employee's training needs are based upon the matrix and any other training identified by the Line Manager, and are recorded within the individual's Personal Development Plan (which outlines training needs on an annual basis).

The training process has been established to ensure training activities are interactive, effective, competency-based and auditable, in terms of frequency of sessions and attendance of individuals.

HSE training, based on roles and responsibilities, includes:

- Dangerous goods awareness;
- Management of change;
- Safety Case awareness and legislation;
- Hazard identification and risk management;
- Manual handling;
- HSE Management System and auditing;
- Root cause analysis incident investigation; and
- HSE for supervisors.

OPEP training requirements are outlined in the Petrel-3 and Petrel-4 Monitoring and Decommissioning OPEP (000694_DV_ES.HSE.0285.000).

10.4 Competency

10.4.1 Contractor Selection and Management

All Eni contractors must have satisfied the general HSE prerequisites in the contractor selection process in accordance with the Contractor HSE Management Procedure (ENI HSE-PR-008) and Contractor HSE Specification and Requirements (ENI HSE SP 002).

In addition to this, Eni Australia ensures contractor personnel receive appropriate training on their HSE responsibilities in connection with petroleum activities. This may be achieved in a number of ways; in particular all workforce, including contractors, attend HSE Forums which contain a range of HSE awareness presentations and training.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 375 / 427
				Validity Status	Rev. No. B	

Eni will agree and approve the competencies of the contractor's technicians before they start work in relation to the petroleum activities. All subcontractors and specialist services providers engaged under the maintenance services contract will similarly be approved by Eni.

The Eni contracting process for the contractor vessel selection and management, and the appropriate operators for selected operations associated with the petroleum activities, requires the development of a project-specific vessel scope of work, that is consistent with Logistic Technical Requirements for Supporting Project Activities and corresponding appendix on Vessel Technical Specifications Requirements. These are developed in accordance with Eni Performance Standard P43 Marine Vessels and Eni Marine Transportation Manual, out of which come the requirements informing the vessel on-hire inspection process.

Each vessel must be audited to comply with local and international standards and regulations and Eni Marine Transportation Manual. A complete set of vessel documents will be requested from the operator and once received, Eni's Marine Advisor will review to ensure all documents comply. This may include specific requirements for the vessel scope of work:

- Vessels must have a current (within 12 months of issue) Offshore Vessel Inspection Database (Oil Companies International Marine Forum), Common Marine Inspection Document (International Marine Contractors Association), or Eni marine inspection. If the vessel holds neither of the previous documents, an inspection request will be generated.
- All information and advice will then be on forwarded to Eni Headquarters (LOGIS) for final technical approval. Vessels require technical approval from headquarters if the vessel is going to carry passengers who are Eni employees or direct contractors.

Existing vessels, which Eni has listed as recently engaged, are required to hold a current audit from within the last 12 months and periodically renewed on an annual basis.

10.4.2 Verification of Competence

Personnel qualification and training records will be sampled before and during an activity. Such checks will be performed during the procurement process, inductions, crew change, and operational inspections and audits (refer to Section 10.6).

10.5 Monitoring

For the petroleum activities, information is collected for monitoring compliance to the EPOs, CMs, EPSs and MC in this EP (refer Section 9). At a minimum, evidence identified in the MC in Table 9-2 will be collected and used to demonstrate the EPOs and EPSs are met.

Discharges to the marine environment associated with vessel and MODU activities will be recorded and controlled in accordance with requirements under relevant Marine Orders and MARPOL requirements. Contractors will maintain records so emissions and discharges can be determined or estimated. Such records will be maintained for a period of five years. Contractors are required to make these records available upon request.

To monitor environmental performance during vessel or MODU based activities, Eni and its contractors may use:

- Daily vessel or drilling reports during relevant offshore activities;
- Monthly drilling reports, which include the number of toolboxes and training undertaken, waste, discharges and cetacean sightings;
- Reports from monitoring as detailed in Table 10-2;

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 376 / 427
				Validity Status	Rev. No. B	

- Contractor inspections and audits;
- Review of waste management and recycling records; and
- Audits against the management system, EP requirements or other requirements (Section 10.6).

Table 10-2: Environmental monitoring parameters

Monitoring criteria	Threshold limit	Monitoring method
Marine fauna sightings	N/A	Opportunistic visual observations
Volume of solid waste	No prescriptive limit but principle of ALARP to be applied	Calculated based on capacity of storage containers transferred for onshore disposal
Volume of sewage, greywater, and mass of food scraps discharged overboard	Discharged in accordance with Marine Order requirements	Estimated based on persons on board, storage capacity and dimensions of discharge point
OIW concentration of treated wastewater	Discharged in accordance with Marine Order requirements ($\leq 15\text{mg/L}$)	In compliance with vessel Marine Order requirements
Ballast water	N/A	Ballast water record book or log

10.5.1 Waste Monitoring

Waste management records shall include:

- Waste manifests for all wastes transferred to shore;
- Waste type and volumes disposed of to landfill;
- Waste type and volumes recycled; and
- Estimate of macerated food and sewage waste discharged offshore.

All waste transported from offshore will be properly manifested. Waste manifests will include information about:

- Manifest identification number;
- Quantity (m^3/kg);
- Waste description;
- Waste container(s) number and description;
- Date of shipment;
- Final destination description (such as incineration, landfill);
- Generator data;
- Transporter(s) data and waste acceptance declaration;
- Receiver data and waste acceptance declaration;
- Dangerous goods class and United Nations number (for environmentally hazardous waste);

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 377 / 427
			Validity Status	Rev. No. B	

- Special handling instructions; and
- Any other information required by the waste contractor.

10.6 Auditing and Inspection

Compliance verification and auditing processes for the management of HSE is performed on a number of levels.

At the Eni Australia HSE IMS level, there is a management system element dedicated to the audit and review process and an HSE Auditing Procedure (ENI-HSE-PR-005). This requires that the management system is formally reviewed to ensure ongoing effectiveness and continual HSE improvement. It also ensures critical HSE processes are in place – for example, the HSE auditing of contractors and subcontractors – and annual audit of the permit to work system.

At a contractor management level, the HSE performance of the contractors is assessed as part of the contractual performance review process. Eni also reserves the right to undertake HSE audits on contractors and their subcontractors.

At an activity level, HSE is monitored as part of the execution of discrete work scopes; for example, pipeline inspection, maintenance and repair. For these activities, a project specific plan is prepared that will identify HSE audits, such as pre-mobilisation and during activity execution.

Environmental audits and inspections aim to:

- Identify potential new, or changes to existing, environmental impacts and risk, and methods for reducing those to ALARP;
- Confirm mitigation measures detailed in this EP are effectively reducing environmental impacts and risk, that mitigation measures proposed are practicable and provide appropriate information to verify compliance; and
- Confirm compliance with the EPOs, CMs and EPSs detailed in this EP.

Further details regarding specific audits are outlined in Sections 10.6.1.

10.6.1 Vessel Audits

Before chartering or subcontracting new vessels, technical evaluation will be undertaken to verify compliance with applicable international rules, regulations and conventions, State and Commonwealth requirements and Eni standards and best practice. New vessels (not previously used by Eni Australia) will be subject to an audit of the complete set of vessel documents and an Offshore Vehicle Inspection Database or International Marine Contractors Association inspection will be requested. Vessels used regularly are required to have a vessel audit completed every 12 months.

Internal auditing is also undertaken for vessels to collect evidence for and assure compliance with EP commitments. Compliance documentation and evidence is collected on an ongoing basis.

Before the decommissioning activities start, the proposed MODU will also be inspected to verify suitability and compliance with Eni requirements.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 378 / 427
			Validity Status	Rev. No.	
	B				

10.6.2 Environmental Inspections

An environment inspection will be conducted during or before the activities, to ensure the requirements of this EP are being met. Table 9-2 will be used as a basis for the inspection checklist.

The environmental inspection will be conducted by the Offshore HSE Representative or Environmental Advisor and may include verification of:

- Bunkering and transfers between vessels and MODU and offshore supporting vessels;
- Environment containment, including chemical storage, spill response equipment and housekeeping;
- General MODU environment risks, including waste management, drilling fluids oil/water separation and inspection of subsea and moonpool areas; and
- Other relevant EPSs applicable during the activity.

10.7 Non-conformance, Corrective and Preventative Actions

Non-conformances may be identified from the audits (refer Section 10.6). Close-outs of non-conformances are recorded and tracked in an action tracking database in accordance with the Eni Australia Corrective Action Tracking and Non-conformance Reporting Procedure (ENI-HSE-PR-015). Root cause analysis of incidents is performed to determine the cause and to aid identification of corrective actions, in accordance with the Eni Australia Incident Investigation Procedure (ENI-HSE-PR-025).

Corrective and preventative actions are raised for all identified hazards and incidents according to Eni Australia Procedure Hazard and Incident Reporting (ENI-HSE-PR-003) and are registered and maintained within the Eni SharePoint system.

The Eni HSEQ Manager ensures all corrective and preventative actions are tracked and appropriate reminders are communicated to relevant Department Managers.

Breaches of this EP by Eni's vendors can be managed through issuing a formal Non-Conformance Report, in accordance with Procedure Vendor Management (ENI PRC PR-001), which links with legal management of the contract. The procedure provides for vendor qualification, evaluation, due diligence, feedback and serious non-performance management. This would apply to any serious or repeated breaches of Eni procedures that could cause environmental harm.

10.8 External Reporting

10.8.1 Routine Reporting and Notifications

Routine regulatory reporting requirements for the Petrel-3 and Petrel-4 activities are summarised in Table 10-3. The requirements include that Eni develops and submits an end-of-activity EP Performance Report to NOPSEMA. The process and details for activation of spill response providers and control agencies in the event of an oil spill is in Section 3 of the OPEP.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 379 / 427
			Validity Status	Rev. No.	
				B	

Table 10-3: Routine external reporting requirements

Requirements	Recipient	Timing	Content
Before the Activity			
AHO notification	AHO	Email AHO four weeks before the confirmed activity start date.	Written. Notify AHO (datacentre@hydro.gov.au) of the activity commencement date and duration to enable a Notice to Mariners to be issued.
AMSA Rescue Centre (ARC) notification	AMSA	24 to 48 hours before activities commence.	Written. Through rccaus@amsa.gov.au (Phone: 1800 641 792 or +61 2 6230 6811) for promulgation of radio-navigation warnings.
NOPSEMA: advise about the start date of the activity	NOPSEMA	Email NOPSEMA at least ten days before the activity starting.	Complete NOPSEMA's Regulation 54 Start or end of an activity Form before petroleum activity.
Defence notification	Defence	Minimum of five weeks before the confirmed activity start date.	Notification will be provided to offshore.petroleum@defence.gov.au.
Notification to relevant persons as requested	AFMA DITT NT Fisheries EOG Resources Inpex NTSC NWSA RecFishWest Wilderness Society	Prior to activities commencing.	Details on file.
During the Activity			
NOPSEMA: advise about the end date of the activity	NOPSEMA	Email NOPSEMA within ten days of the end of the activity.	Written. In accordance with Section 54 of the OPGGS(E) Regulations (submissions@nopsema.gov.au).
DEMIRS notification	WA DEMIRS	Notify DEMIRS of the end date/cessation of the activities.	Notify DEMIRS of the end-date/cessation of activities (petroleum.environment@dmirs.wa.gov.au).
In the event of an unplanned incident			

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 380 / 427
			Validity Status	Rev. No.	
				B	

Requirements	Recipient	Timing	Content
AMSA: advise about any oil pollution incidents in Commonwealth waters	AMSA	Within two hours of any oil pollution incidents in Commonwealth waters.	<p>In accordance with the <i>Navigation Act 2012</i>, any oil pollution incidents in Commonwealth waters will be reported by the Vessel Master to AMSA within two hours via the national emergency notification contacts and a written report within 24 hours of the request by AMSA.</p> <p>The national 24-hour emergency notification contact details are:</p> <p style="text-align: center;"> Freecall: 1800 641 792 Fax: (02) 6230 6868 Email: mdo@amsa.gov.au. </p>
Department of Transport (WA DoT) reporting <i>All actual or impending marine oil pollution incidents that are in, or may impact, State waters resulting from an offshore petroleum activity</i>	Oil Spill Response Coordination	Within two hours.	<p>Oral.</p> <p>Notification of actual or impending spillage, release or escape of oil or an oily mixture that is capable of causing loss of life, injury to a person or damage to the health of a person, property or the environment.</p> <p>All oil pollution incidents in WA State waters will be reported by the Vessel Master to the Oil Spill Response Coordination Unit within DoT as soon as practicable (within two hours of spill occurring) via the 24-hour reporting number (08) 9480 9924. The Duty Officer will then advise whether the following forms are required to be submitted:</p> <ul style="list-style-type: none"> • Marine Pollution Form (POLREP); http://www.transport.wa.gov.au/mediaFiles/marine/MAC-F-PollutionReport.pdf • Marine Pollution Situation Report: http://www.transport.wa.gov.au/mediaFiles/marine/MAC-F-SituationReport.pdf.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 381 / 427
			Validity Status	Rev. No.	
				B	

Requirements	Recipient	Timing	Content
Director of National Parks reporting <i>Notification of the event of oil pollution within a marine park or where an oil spill response action must be taken within a marine park; or if there are any changes to intended operations (requested through consultation)</i>	DNP	So far as reasonably practicable before writing response action.	Oral and written. DNP should be made aware of oil and gas pollution incidences which occur within a marine park, or are likely to impact on a marine park, as soon as possible. Notification should be provided to the 24-hour Marine Compliance Duty Officer on 0419 293 465. The notification should include: <ul style="list-style-type: none"> • titleholder details • time and location of the incident (including name of marine park likely to be affected) • proposed response arrangements as per the OPEP (such as dispersant, containment) • confirmation of providing access to relevant monitoring and evaluation reports when available • contact details for the response coordinator. Note DNP may request daily or weekly Situation Reports, depending on the scale and severity of the pollution incident.
DPIRD reporting <i>If marine pests or disease are suspected, this must be reported to DPIRD</i>	DPIRD	Within 24 hours.	Notification (written) of any suspected marine pests or diseases, including any organism listed in the Western Australian Prevention List for Introduced Marine Pests and any other non-endemic organism that demonstrates invasive characteristics.
DCCEEW reporting <i>Any harm or mortality to EPBC Act listed threatened marine fauna</i>	DCCEEW	Within seven days to EPBC.permits@environment.gov.au.	Notification (written) of any harm or mortality to an EPBC-listed species of marine fauna, whether attributable to the activity or not.
DBCA reporting <i>Any harm or mortality to fauna listed as threatened under the WA Biodiversity Conservation Act 2016</i>	DBCA	Fauna report submitted within seven days to fauna@dbca.wa.gov.au.	Notification of any harm or mortality to fauna listed as a threatened species under the WA <i>Biodiversity Conservation Act 2016</i> as a result of activities.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 382 / 427
			Validity Status	Rev. No.	
				B	

Requirements	Recipient	Timing	Content
Australian Marine Mammal Centre reporting <i>Any ship strike incident with cetaceans will also be reported to the National Ship Strike Database</i>	DCCEEW	As soon as practicable.	Ship strike report provided to the Australian Marine Mammal Centre: https://data.marinemammals.gov.au/report/shipstrike .
Notification to relevant persons as requested <i>Any spill, incident or hazard that could impact them as requested</i>	BAC DEMIRS (WA) Northern Land Council WAFIC	Within 24 hours.	Details on file.
NOPSEMA reportable incident	Refer Section 10.8.2.1		
NOPSEMA recordable incident	Refer Section 10.8.2.2.		
After the Activity			
NOPSEMA: end-of-activity notification	NOPSEMA	Within ten days after finishing the activities covered by this EP.	Written. NOPSEMA must be notified that the activity is completed. Complete NOPSEMA's Regulation 54 Start or end of an activity Form.
NOPSEMA: end-of-activity Performance Report EP	NOPSEMA	Submit to NOPSEMA within three months of submission of each Section 54(2) end-of-activity notification to NOPSEMA. For example, three months of activity completion.	This reports compliance against each of the performance outcomes and standards as outlined in Section 9 of this EP and: <ul style="list-style-type: none"> • Reportable and reportable incidents, investigation details, corrective actions determined and actioned • Monitoring records • Inspection and audit outcomes • Summary of the activity operations conducted. The total amount of waste disposed will be included in the environmental performance

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 383 / 427
			Validity Status	Rev. No.	
				B	

Requirements	Recipient	Timing	Content
			<p>report (details about waste records are included in Section 10.5.1).</p> <p>EP ends when titleholder notifies completion, and the regulator accepts the notification.</p>
DCCEEW: marine fauna observation data	DCCEEW	Submit to DCCEEW within three months of activity completion.	Provide marine fauna observation data to DCCEEW through its online Cetacean Sightings Application.
National Pollutant Inventory Report	National Pollution Inventory	Annual, by 30 September each year.	Summary of the emissions to land, air and water, including those from the facility. Reporting period 1 July to 30 June each year.
National Greenhouse and Energy Reporting	Clean Energy Regulator	Annual, by 31 October each year.	<p>Summary of energy use and GHG emissions, including those from the facility. Reporting period is 1 July to 30 June each year.</p> <p>NGER (Safeguard Mechanism) Rule 2015 is used to measure, report and manage the relevant production operations emissions in compliance with the requirements set by the Clean Energy Regulator.</p>

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 384 / 427
			Validity Status	Rev. No. B	

10.8.2 Incident Reporting (Reportable and Recordable)

10.8.2.1 Reportable Incidents

Under Sections 24(c), 48 and 49 of the OPGGS(E) Regulations, NOPSEMA must be notified of any reportable incidents. A reportable incident is defined as an incident relating to the activity that has caused, or has the potential to cause, moderate to significant environmental damage.

For the purposes of this activity, in accordance with OPGGS(E) Regulations:

- A recordable incident for an activity means a breach of an EPO or EPS, in the EP that applies to the activity, that is not a reportable incident;
- A reportable incident for an activity means an incident relating to the activity that has caused, or has the potential to cause, moderate to significant environmental damage.

For the Petrel-3 and Petrel-4 petroleum activities, a reportable incident includes:

- An incident that has caused or has the potential to cause environmental damage with a consequence level of moderate or higher in accordance with the Eni risk assessment process (refer Section 6.1). This includes:
 - Introduction of IMS (Section 8.3).

Table 10-4 details the reportable incident requirements.

Table 10-4: Reportable Incident reporting requirements

Requirement/required information	Timing	Type	Recipient
The oral notification must contain: <ul style="list-style-type: none"> • All material facts and circumstances concerning the reportable incident known or that by reasonable search or enquiry could be found out • Any action taken to avoid or mitigate any adverse environmental impacts of the reportable incident • The corrective action that has been taken, or is proposed to be taken, to stop, control or remedy the reportable incident. 	As soon as practicable, and in any case not later than two hours after the first occurrence of a reportable incident or, if the incident was not detected at the time of the first occurrence, at the time of becoming aware of the reportable incident.	Oral	NOPSEMA
A written record of the oral notification must be submitted. The written record is not required to include anything that was not included in the oral notification.	As soon as practicable after the oral notification.	Written	NOPSEMA NOPTA

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 385 / 427
				Validity Status	Rev. No.	
					B	

Requirement/required information	Timing	Type	Recipient
<p>A written report must contain:</p> <ul style="list-style-type: none"> • All material facts and circumstances concerning the reportable incident known or that by reasonable search or enquiry could be found out • Any action taken to avoid or mitigate any adverse environmental impacts of the reportable incident • The corrective action that has been taken, or is proposed to be taken, to stop, control or remedy the reportable incident • The action that has been taken, or is proposed to be taken, to prevent a similar incident occurring in the future. <p>Consider reporting using NOPSEMA's Report of an Accident, Dangerous Occurrence or Environmental Incident Form.</p>	<p>Must be submitted as soon as practicable, and in any case not later than three days after the first occurrence of the reportable incident, unless NOPSEMA specifies otherwise.</p> <p>Same report to be submitted to NOPTA within seven days after giving the written report to NOPSEMA.</p>	Written	NOPSEMA NOPTA

10.8.2.2 Recordable Incidents

Under the OPGGS Act, a 'recordable incident' for an operator of an activity is 'a breach of an EPO or EPS that applies to the activity and is not a reportable incident'.

Recordable incidents will be reported to the Regulatory Authority as per the OPGGS(E) Regulations (as in, monthly report of recordable incidents sent by the 15th of the following month), including the submission of 'nil' reports if no environmental incidents have occurred.

10.9 Internal reporting

All environmental incidents, deviations from this EP, or events that do not meet the EPOs of the EP will be recorded and reported to Eni, using the Eni Procedure Hazard and Incident Reporting and Investigation (ENI HSE PR 003). This includes entering the incident into the incident tracking database, accessible by contractor supervisors and Eni personnel.

Some examples of environmental incidents that need to be reported to Eni include:

- The uncontrollable escape or ignition of petroleum or any other flammable or combustible material causing a potentially hazardous situation;
- Spills of hydrocarbons, hydraulic fluids or any other chemicals, of any volume;
- Unplanned releases of gas;
- Overboard disposal of solid waste (accidental or intentional);
- Loss of equipment to the ocean (dropped objects); and
- Incorrect disposal of wastes onshore by waste contractors.

10.10 Knowledge-Sharing and HSE Communication

HSE communications include both internal communication to employees and external communication to stakeholders and is managed in accordance with Procedure HSE

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 386 / 427
				Validity Status	Rev. No. B	

Communications, Consultation and Participation (ENI-HSE-PR-016). Emergency communications are described in the Petrel Emergency Response Plan.

HSE commitments and obligations are established, recorded, maintained, communicated and managed within Eni in accordance with Procedure Maintaining Knowledge of HSE Commitments and Obligations (ENI-HSE-PR-006).

10.10.1 Internal Communication with Eni Natural Resources Division

Regular communications from the Eni Natural Resources Division regarding HSE matters include:

- Guidelines for establishing annual HSE objectives;
- Requests of monthly, quarterly, and annual reports;
- Documentation relevant to establishing budgetary provisions for HSE activities;
- Highlighting of actions to improve certain objectives;
- Reports about HSE audits that may have occurred;
- Incident reporting and investigation and lessons learned;
- Publication of HSE articles in the Company's publications;
- Distribution of the policy, procedures, and other documents of the HSE Management System;
- Publication of Eni's annual Sustainability Report; and
- Any other communication specific to a particular HSE event.

Eni Australia regularly communicates HSE performance information to Eni's Natural Resources Division through:

- Monthly, quarterly and annual reports;
- Accident and incident reports and investigation;
- Audit and corrective action close out status; and
- HSE Qualitative Report (Four Year Plan) (ENI-HSE-RP-011) and HSE Annual Plan (ENI-HSE-PL-031).

10.10.2 Internal Eni Australia Communications

Typical examples of key internal Eni communications relevant to the Petrel-3 and Petrel-4 petroleum activities are:

- Weekly management meetings;
- Morning call;
- Back-to-back roster handovers;
- HSE meetings;
- Pre-start meetings;
- Safety initiatives and communications; and
- Management safety visits.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 387 / 427
			Validity Status	Rev. No. B	

10.10.3 Non-verbal Communications

In addition to the meetings described above, there are non-verbal means of communicating HSE issues within Eni, including:

- Eni Intranet websites;
- Emails; and
- HSE noticeboards.

The Eni Intranet site has a HSE page that contains links to:

- HSE IMS;
- Reporting forms;
- Incident and crisis management documentation;
- Safety Case documentation;
- Environmental Management Plan;
- Emergency Response documentation; and
- Health Risk Assessment.

Emails are regularly used to communicate HSE issues within Eni. Typically, these would be:

- HSE Alerts – HSE Alerts are specific alert notices that arise from Hazard and Incident Reports and are typically only considered for high potential incidents. The HSE Manager will decide whether to issue a HSE Alert to inform the wider workforce; and
- HSE Bulletins – Notices on HSE topics that need to be raised in the workforce can be done so using HSE Bulletins. They can focus on a HSE theme or just raise a specific item of interest. The HSE Manager coordinates the development of new HSE Bulletins.

HSE noticeboards are present in all Eni offices and plants. They function to inform the workforce about HSE issues. The content of the noticeboard is managed by the POS. Regular items which are placed on the HSE noticeboards include:

- HSE Commitment Statement;
- Incident statistics;
- Incident descriptions;
- Audit reports; and
- Hazard cards (for reporting hazards).

10.10.4 External Communications

External communication about HSE matters is typically made to a range of recipients, including governments (including government agencies and regulators), community groups, non-government organisations, customers, industry bodies and the media (Table 10-5).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 388 / 427
			Validity Status	Rev. No.	
				B	

Table 10-5: External communication summary

External communication	Details on communication level
Government	<p>Eni Australia's HSE communications with government authorities is undertaken according to legislative requirements and guidelines or, where none exist, best practice. Generally, HSE communications between Eni Australia and relevant government departments are performed through the Eni Operations and HSE Departments. Records of key communications are maintained by the relevant Eni department.</p> <p>The Managing Director may address communications with government bodies in certain circumstances (such as major accident investigation), in which case Eni Natural Resources may also become involved.</p>
Non-Government Organisations and Community Groups	<p>HSE communication and consultation with non-government organisations and community groups will generally be coordinated by the HSE Department. Technical HSE communications to non-government organisations and community groups may be handled via an HSE specialist assigned to the particular project.</p> <p>Technical HSE communications may be undertaken by an HSE specialist.</p>
Customers	<p>Eni Australia actively engages with its customers, to ensure there is a common understanding of HSE issues as they relate to the supply of products. HSE communication with customers will generally be coordinated by the relevant department(s) with advice from the HSE Department.</p>
Business and Industry Organisations	<p>Eni is a member of the Australian Energy Producers (AEP) and the WA and NT Chambers of Commerce. Interaction with the business community also occurs in Eni's day-to-day business. Industry forums, such as the AEP conferences and Southeast Asian & Australian Offshore Conference, allow Eni to further communicate HSE aspects.</p> <p>HSE communication with unions is coordinated by the Human Resources Department with advice from the HSE Department.</p>
Media	<p>Media liaison occurs in relation to crisis and emergency situations and is managed in accordance with the relevant Eni Crisis Management Plan.</p>
Public HSE Reporting	<p>Eni Australia, through its corporate head company Eni Natural Resources, communicates externally to the public about Eni's significant HSE aspects through a public Sustainability Report. This report contains information about the HSE performance of Eni Divisions and Business Units, including Eni Australia. The Sustainability Report enables Eni to share its vision and commitment to sustainable development with its staff, all relevant stakeholders and the public. It is available on the Eni internet site.</p>

10.11 Management Review and Improvement

The HSE IMS is reviewed on a minimum five-yearly cycle in association with risk assessment outcomes and incident reviews for required changes. This review includes the review of any triggers requiring update to the HSE IMS (as detailed below), as well as general business planning outcomes and assessments of the effectiveness of performance standards. The review also documents actions and requirements for items, including the review and update of procedures and systems as identified in the HSE IMS review.

The HSE IMS review also incorporates feedback from the public and regulators with respect to performance and expectations.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 389 / 427
				Validity Status	Rev. No. B	

The changes that may initiate review of the HSE IMS include:

- Legislative changes, including changes to regulatory regime (modification to Pipeline Licence conditions);
- Advancement in technology;
- Significant changes arising from hazard and event investigations to prevent recurrence;
- Significant changes due to complaints and changing community expectations;
- Significant changes and improvements identified from various risk assessments, including ongoing HAZOPs, HAZIDs, JHAs and other hazard identification processes;
- Significant changes in activities (methodology in work processes);
- Significant changes in organisation structure, and business policies and objectives;
- Significant changes resulting from monitoring of HSE key performance indicators; and
- Remedial actions from audits.

10.11.1 Health, Safety and Environment Management Review

A formal management review is conducted yearly to assess overall implementation of the HSE IMS as per the Procedure HSE Management Review (ENI-HSE-PR-014). Areas in need of reinforcement are identified and as a result the elements of the system that need to be reinforced are highlighted. Action plans and responsibilities are agreed to improve risk management and the overall HSE performance of Eni Australia.

This typically includes reviews of the:

- Changes in:
 - External and internal issues that are relevant to the environmental management system
 - The needs and expectations of interested parties, including compliance obligations
 - Significant environmental aspects
 - Risks and opportunities
- Information about environmental performance, including trends in:
 - Non-conformances and corrective actions
 - Monitoring and measurement results
 - Fulfilment of compliance obligations
 - Audit results
- Adequacy of resources;
- Relevant communication(s) from interested parties, including complaints;
- Opportunities for continual improvement;
- Changes in legislation or guidance, such as current requirements for AMPs; and
- Advances in relevant environmental technology and new scientific information.

Oil spill arrangements and testing are reviewed in accordance with the Petrel-3 and Petrel-4 Monitoring and Decommissioning OPEP (000694_DV_ES.HSE.0285.000; Appendix E).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 390 / 427
			Validity Status	Rev. No. B	

10.12 Management of Change and Reviews of this Environment Plan

Change is managed in accordance with the Eni Australia Procedure Management of Change (ENI-HSE-PR-002). For this EP, the MoC process considers Section 19 of the OPGGS(E) Regulations and determines if a proposed change can proceed and the manner in which it can proceed.

The MoC procedure applies to changes in operational assets, systems, processes, operations, products, organisation, and staffing that have the potential to alter hazard or risk levels, affect environmental outcomes, including compliance with applicable laws or standards, or to significantly affect a stakeholder involved with the above items. Standard modification or changes that occur within existing work processes (such as Permit to Work system) or are of a routine nature are not included in this procedure.

Potential changes in risk originating from internal and external factors may lead to EP reviews. Changes which may lead to an EP review may include:

- Those concerning the scope of the activity descriptions (Section 3);
- Advances in technology;
- New scientific information;
- Changes in understanding of the environment, such as advice about species protected under the EPBC Act and current requirements for AMPs; and
- Potential new advice from external stakeholders (Section 5), which will be reviewed in regard to Section 19 of the OPGGS(E) Regulations.

Factors which may lead to an EP review are identified through a number of means, including:

- Internal knowledge sharing and HSE communication (Section 10.10.1);
- Internal communications (Section 10.10.1);
- HSE management review (Section 10.11.1);
- Non-verbal communications (Section 10.10.3); and
- External communications (Section 10.10.4).

If a review of the activity and the environmental risks and impacts does not trigger a requirement for a revision, the change is considered minor. Minor change will be considered a 'minor revision'. Minor administrative changes to this EP, where an assessment of the environmental risks and impacts is not required (such as document references, phone numbers), will also be considered a 'minor revision'. Minor revisions will be tracked by Eni through its document change register on SharePoint and incorporated during internal reviews.

Management review (Section 10.11) or further understanding of environment risks through knowledge sharing (Section 10.10) may trigger a review of the EP. Internal reviews will address matters such as the overall design and effectiveness of the EP, progress in environmental performance, changes in environmental risks, changes in business conditions, and any relevant emerging environmental issues or change in understanding of the environment (such as protected matters requirements). Reviews may also trigger adoption or reconsideration of once rejected controls within the EP.

This EP will be revised:

- If and when an environmental inspection and audit (see Section 10.6) of the activity finds significant breaches of the EP requirements; and

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 391 / 427
			Validity Status	Rev. No.	
		B			

- If any significant new environmental risk or effect, or significant increase in an existing environmental risk or effect, occurs that is not provided for in the existing EP as required by Sections 38 and 39 of the OPGGS(E) Regulations.

10.13 Incident Management

10.13.1 Overview

The basic principle of incident and crisis management (ICM) within Eni is to utilise the entire organisation in the most optimal way, to ensure the incident is brought under control, and the organisation is then returned to a normal state. All responses to an emergency or a crisis are based on the priorities of:

- P** protection of **people**
- E** protection of the **environment**
- A** protection and minimisation of damage to financial and material **assets**
- R** protection of Eni's **reputation**.

The response should be proactive and sufficiently robust to manage all foreseeable events, be prepared for any reasonable variation, be able to flexibly meet an escalation of events and make the best use of the entire organisation.

10.13.2 Incident and Crisis Management Organisational Structure

The Eni ICM organisational structure consists of three core levels:

1. Crisis Management
2. Incident Management
3. Field Response.



Figure 10-2: Incident and crisis management core levels

Principal duties of each level and the timescale in which they shall endeavour to operate are illustrated in Figure 10-3.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 392 / 427
			Validity Status	Rev. No.	
				B	

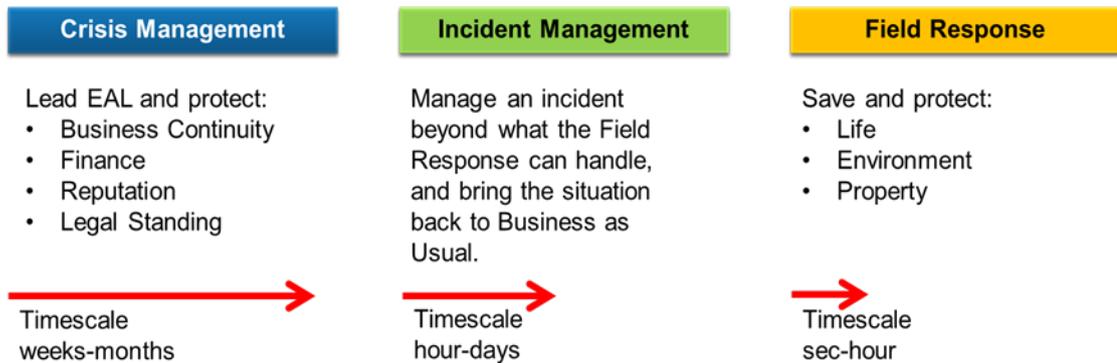


Figure 10-3: Incident and crisis management organisation’s principal duties and timescales

10.13.3 Chain of Command

Eni Australia’s ICM Chain of Command is a three-level structure. This is represented in Figure 10-4.

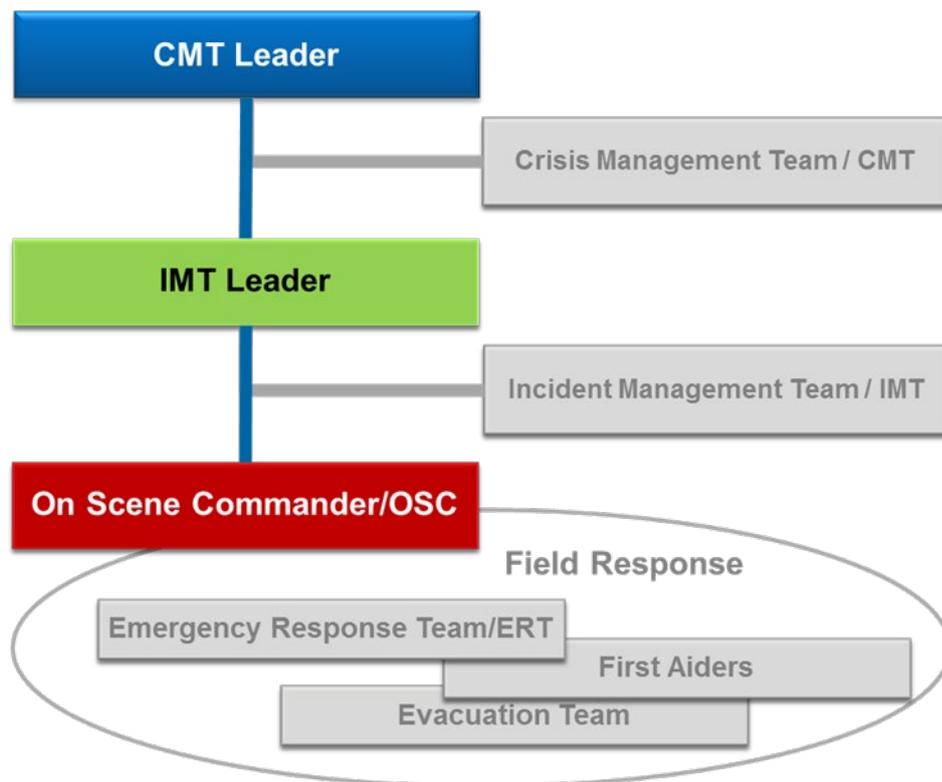


Figure 10-4: Incident and crisis management organisation chain of command

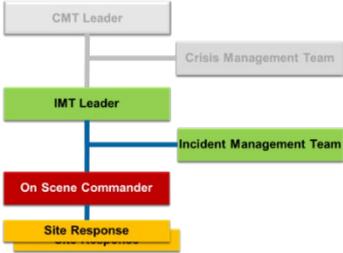
The role holders in the ICM organisation can vary over time. As the responsibility for the response to the incident moves from one organisation to another, a role holder is replaced with a more suitable or more competent individual from the same organisation, or the incident is of such duration that shift changeover is required due to fatigue risk.

	Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 393 / 427
				Validity Status	Rev. No. B	

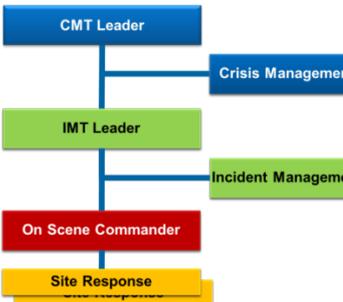
10.13.4 Activation

Activation of the ICM organisation is to be executed in the steps shown in Table 10-6.

Table 10-6: Activation of levels in the incident and crisis management organisation

Severity level	Activation	Illustration (activated parts of the organisation in colour)
Pre-alarm		
Any event, strictly defined as a process safety event or event generated on the equipment/ plant by natural risks, which does not lead to an emergency but is visible, audible or in any case noticeable by the population, Institutions, Administrations and Bodies responsible for health, safety and the environment and which may have a significant media impact at local or national level.	Operational response only IMT informed	
Level 1		
An event that can be managed at site level with the personnel and means available there, under the responsibility of the Employer; divided into noticeable from the outside or not.	Planned tactical response only IMT informed	
Level 2		
An event that can be managed locally under the responsibility of the Employer, with assistance from the Business Unit and Administration at a peripheral level.	Planned tactical response IMT mobilised Eni Australia Managing Director informed CMT mobilised (Managing Director discretion)	

	Eni australia Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 394 / 427
			Validity Status	Rev. No. B	

Level 3		
<p>An event that determines a seriously dangerous situation for the site /or the surrounding territory, managed under the responsibility of the Employer, with assistance from the Business Unit and the pertinent HSE unit and with the support of the EMRIL unit. For sites at risk of a major/serious incident, covered by the appropriate national/ international regulations, it may be necessary to implement the external/national emergency plan in coordination with the local or national public Authorities.</p> <p>In the event of third level emergencies with significant impacts, prolonged over time and capable of having serious repercussions on corporate integrity at an international level, Eni supports the management of the emergency through the Crisis Unit in close contact with the Top Management Committee.</p>	<p>Planned tactical response IMT mobilised CMT mobilised Eni Headquarters mobilised</p>	

10.13.5 Petrel Field response

The field response conducts the mitigation work at a facility. A field response can involve, but is not limited to, emergency response teams, first aiders, evacuation team and oil spill response teams.

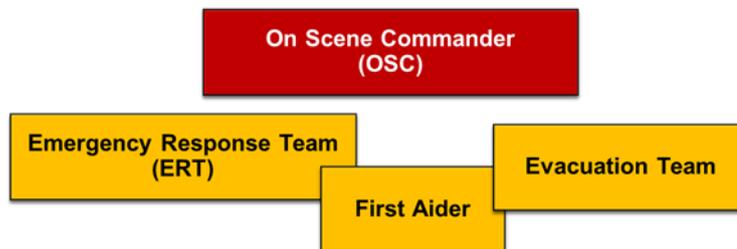


Figure 10-5: On-scene command

For each field response, irrespective of its extent or complexity, there shall always be an On-Scene Commander in direct command of the operation (Figure 10-5: On-scene command).

A Petrel Emergency Response Plan will establish an understanding of the roles and responsibilities for managing, controlling and responding to an emergency associated with the Project. The Plan outlines the:

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 395 / 427
			Validity Status	Rev. No. B	

- Emergency management structure within Eni Limited;
- Emergency management structure for the Petrel Project;
- Procedures for response, control and coordination;
- Critical internal and external support links and relationships with external response agencies;
- Facilities and response equipment and inventories for facilities; and
- Training and exercises.

The Petrel Emergency Response Plan outlines responses for scenarios at the Petrel Field. In addition, the Plan is supported by or supports the:

- Eni Crisis and Incident Management Plans; and
- Contractors' Emergency Response Plans.

The Petrel Emergency Response Plan addresses a wide range of emergencies involving threats to the health and safety of personnel at or near the Petrel Field. The emergencies associated with the Petrel Field addressed in the plan include but are not limited to:

- Ship collision;
- Helicopter emergency;
- Person overboard; and
- Medevac.

The Petrel Emergency Response Plan details the course of action to be followed for each event to ensure personnel safety is maintained as far as possible during emergency events.

Emergency response documentation is reviewed annually; a review is also undertaken after any incidents. Eni evaluates the effectiveness of the emergency management system via audits and monitoring of exercises.

10.13.6 Coordination with other organization

During an incident, Eni will manage all contacts and coordination with Australian local Public Authorities and Agencies from the IMT and CMT.

In some cases, Eni's ICM organisation will operate in parallel or integrated with other organisations; for example, a contractor company, joint venture partner or a company operating in the vicinity of an Eni facility. In these cases, it is important liaison is established on 'equivalent levels' and in accordance with common principles for incident management.

10.13.7 Emergency Response Training

The emergency response training required for each functional role for the petroleum activities are detailed in the Petrel Emergency Response Training Matrix. Eni engages external consultants to provide nationally recognised training for emergency roles.

Members of the ICM organisation have the necessary competence and formal authorisation to efficiently and effectively perform their tasks. Comprehensive training is provided to all personnel in the ICM organisation comprising theoretical training, exercises and drills. A

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 396 / 427
			Validity Status	Rev. No.	
	B				

competency assessment system is integral in the ICM system in order to verify the competency of post holders.

It is a requirement for all personnel working offshore to undergo the formal Offshore Petroleum Industry Training Organization accredited Tropical Basic Offshore Safety Induction and Emergency Training course. This requirement applies to contractors and visitors.

10.13.8 Dangerous Weather Response

Tropical cyclones and other storm conditions have the potential to cause damage to personnel, the environment and equipment. Standard Adverse Weather (ENI HSE ST 031) includes detailed procedures for preparing for and responding to cyclone events. The response goal during a cyclone event is to protect personnel, the environment, equipment and the subsea equipment integrity.

Eni uses experienced weather service providers, such as the Bureau of Meteorology and Weatherzone, to provide current, location specific forecasts. Eni uses specifically tailored services for its real-time forecasting and severe weather forecasting capabilities. They advise key Eni personnel of any actual or potential severe weather to support Eni's operations and strategic planning. The POS must ensure he or she receives email notification of cyclones from the provider. This includes:

- Tropical Cyclone seven day outlook; and
- Tropical Cyclone forecast.

The MODU and vessels or any vessels used during the petroleum activities will receive daily forecasts from the Bureau of Meteorology. In the event the cyclone (or severe weather) is forecast and it has the potential to affect the petroleum activities, the cyclone management plan will be actioned. If required, vessels can transit from the proposed track of the cyclone (or severe weather).

10.14 Chemical Assessment Process

All operational chemicals used in the petroleum activities are considered within the scope of this chemical assessment and selection process. These include production, drilling, cementing, completion, and rig chemicals (pipe dopes and threadlock chemicals). Chemicals required for maintenance activities (such as paints, lubricants, and greases), portable water treatment chemicals, emergency response chemicals and those chemicals used for domestic purposes are considered out of scope. The scope follows the same principles as applied in the United Kingdom under the Offshore Chemical Regulations 2002 (as Amended 2011).

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 397 / 427
			Validity Status	Rev. No.	
	B				

10.14.2 Centre for Environment, Fisheries and Aquaculture Science Offshore Chemical Notification Scheme Registered Chemicals

All chemicals registered on the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) Offshore Chemical Notification Scheme (OCNS) list with assigned Hazard Quotient (HQ) Bands of Gold or Silver, or OCNS Groups E or D, and have no substitution warnings or product warnings, are determined to not require further assessment as they do not present a significant impact on the environment in standard discharge scenarios. These chemicals are considered approved for use or discharge for the petroleum activities.

CEFAS OCNS registered chemicals which have a substitution warning, product warning or have HQ Bands of White, Blue, Orange, Purple or OCNS Groups of A, B or C require assessment by an appropriate Eni person to understand the environment risk of their use and discharge into the marine environment. Eni may either reject or approve once an ALARP assessment is documented and signed off, showing the environmental risk from the use and discharge is acceptable.

10.14.3 Chemicals Not Registered by the Centre for Environment, Fisheries and Aquaculture Science Offshore Chemical Notification Scheme

All chemicals proposed for use that are not on the CEFAS OCNS register require assessment by an appropriate Eni person to understand the environment impacts of their use and discharge to the marine environment.

10.14.4 As Low as Reasonably Practicable Chemical Assessment and Justification for Use or Discharge

CEFAS OCNS-registered chemicals which have a substitution warning, a product warning or have HQ Bands of white, blue, orange, purple or OCNS Groups of A, B or C and any chemical which is not registered under the CEFAS OCNS require further assessment by an appropriate Eni person in accordance with the principles of ALARP. This assessment includes:

- Assessment of the chemical's application and discharge;
- Assessment of the ecotoxicity, biodegradation and bioaccumulation potential of the chemical in the marine environment and any other applicable environmental information available (see below);
- Investigation of potential alternatives for the chemical, with preference for options that are on the OCNS-Ranked List of Notified Chemicals with OCNS HQ of Gold, Silver, or are Group E or D, with no substitution or product warning and chemicals that have low ecotoxicity risk (Section 10.14.4.1), are readily biodegradable (Section 10.14.4.2) and do not bioaccumulate (Section 10.14.4.3);
- If no more environmentally suitable alternatives are available, further risk reduction measures (such as controls related to use and discharge) considered for the specific context and implemented where relevant to ensure the risk is ALARP and acceptable;
- Justification of the selected chemical in respect to others available;
- Further risk reduction measures; as in, specific controls on its use or future recommendations; and
- Concurrence and sign-off by the relevant Environment Team Lead that the environmental risk associated with the chemical use and discharge is ALARP and acceptable.

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 398 / 427
			Validity Status	Rev. No. B	

The above is included and documented in the Eni HSE Standard: Hazardous Materials Management (ENI-HSE-ST-009).

10.14.4.1 Ecotoxicity Assessment

Table 10-7 and Table 10-8 can act as guidance in assessing a chemical's toxicity. Table 10-7 is used by CEFAS to group chemicals based on ecotoxicity results, 'A' representing highest toxicity and risk to the environment and 'E' lowest. Table 10-8 shows classifications and categories of toxicity against ecotoxicity results.

If a product has no specific ecotoxicity data available, the following options should be considered:

- Ecotoxicity data for analogous products can be referred to where the chemical ingredients and composition are largely identical (for example, Portland cement is produced by different manufacturers, with some having minor variations in content; ecotoxicity from a variation product may be used with careful consideration); and
- Ecotoxicity data may be referenced for each separate chemical ingredient (if known) within the product.

Table 10-7: Initial Centre for Environment, Fisheries and Aquaculture Science Offshore Chemical Notification Scheme grouping

Initial grouping	A	B	C	D	E
Result for aquatic-toxicity data (ppm)	<1	>1 to 10	>10 to 100	>100 to 1000	>1000
Result for sediment-toxicity data (ppm)	<10	>10 to 100	>100 to 1000	>1000 to 10,000	>10,000

Note: Aquatic Toxicity refers to the Skeletonema costatum EC50, Acartia tonsa LC50 and Scophthalmus maximus (juvenile turbot) LC50 toxicity tests.

Source: DMP 2013, Environmental Risk Assessment of Chemicals Used in WA Petroleum Activities Guideline.

Table 10-8: Aquatic species toxicity grouping

Category	Species	LC50 and EC50 criteria
Very toxic	Fish	LC50 (96 hrs) of <1mg/l
	Crustacea	EC50 (48 hrs) of <1mg/l
	Algae and other aquatic species	ErC50 (72 or 96 hrs) of 1mg/l
Toxic	Fish	LC50 (96 hrs) of >1mg/l to >10mg/l
	Crustacea	EC50 (48 hrs) of >1mg/l to <10mg/l
	Algae and other aquatic species	ErC50 (72 or 96 hrs) of 1mg/l to <10mg/l
Harmful	Fish	LC50 (96 hrs) of <10mg/l to <100mg/l
	Crustacea	EC50 (48 hrs) of <10mg/l to <100mg/l
	Algae and other aquatic species	ErC50 (72 or 96 hrs) of <10mg/l to <100mg/l

Source: DMP 2013, Environmental Risk Assessment of Chemicals Used in WA Petroleum Activities Guideline

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 399 / 427
			Validity Status	Rev. No. B	

10.14.4.2 Biodegradation Assessment

The biodegradation of chemicals is assessed using the CEFAS biodegradation criteria, which aligns with the categorisation outlined in the DMP Chemical Assessment Guide: *Environmental Risk Assessment of Chemicals used in WA Petroleum Activities Guideline*.

CEFAS categories biodegradation into the groups of:

- Readily biodegradable: results of greater than 60% biodegradation in 28 days to an oil spill prevention, administration, and response (OSPAR) harmonised offshore chemical notification format (HOCNF)-accepted ready biodegradation protocol;
- Inherently biodegradable: results greater than 20% and less than 60% to an OSPAR HOCNF-accepted ready biodegradation protocol or a result of greater than 20% by OSPAR-accepted inherent biodegradation study; and
- Not biodegradable: results from OSPAR HOCNF accepted biodegradation protocol or inherent biodegradation protocol are less than 20%, or half-life values derived from aquatic simulation test indicate persistence.

Chemicals with greater than 60% biodegradation in 28 days to an OSPAR HOCNF-accepted ready biodegradation protocol are considered acceptable in terms of biodegradation.

10.14.4.3 Bioaccumulation Assessment

The bioaccumulation of chemicals is assessed using the CEFAS bioaccumulation criteria, which aligns with the categorisation outlined in the DMP Chemical Assessment Guide: *Environmental Risk Assessment of Chemicals used in WA Petroleum Activities Guideline* (DMP, 2013).

The following guidance is used by CEFAS:

- Non-bio accumulative: $\text{LogPow} < 3$, or $\text{BCF} \leq 100$ and molecular weight is ≥ 700 ; and
- Bio accumulative: $\text{LogPow} \geq 3$ or $\text{BC} > 100$ and molecular weight is < 700 .

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 400 / 427
			Validity Status	Rev. No. B	

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				Validity Status	Rev. No. B	

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			Validity Status	Rev. No.	
				B	

Appendix A: HSE Statement



health safety & environment statement

Eni Australia Ltd, in its natural resources and energy evolution activities is committed to providing a safe work place, safe systems of work, a competent workforce and a culture conducive to exercising prudent Health, Safety, Environment (HSE) and Energy Management practices and behaviours.

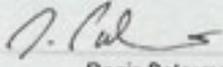
This commitment statement applies to all operational activities undertaken by Eni Australia Ltd, including activities carried out by our contractors and sub contractors.



Eni Australia Ltd will:

- Provide a safe and healthy workplace for the prevention of worker related injury and ill health.
- Set objectives and targets to ensure continual improvement in the HSE Management System and overall HSE performance.
- Comply with relevant legislation and other obligations, or apply company standards where laws and regulations do not exist.
- Commit to eliminating HSE risks across the business life cycle to As Low as Reasonably Practicable
- Adopt high management and technical standards to prevent and mitigate major accidents associated with process safety events.
- Include HSE performance in appraisal of staff and contractors.
- Respect the environment and prevent pollution by actively monitoring and managing emissions, effluents, discharges and other impacts on the environment.
- Endeavour to reduce greenhouse gas emission intensity, fugitive emissions and process flaring as part of our climate strategy.
- Adopt energy efficient systems in our planning activities.
- Provide systems, resources and skills to maintain emergency response capabilities.
- Consult with stakeholders, local communities, public interest groups, workers and their representatives.
- Remain committed to sustainable development and the welfare of our host communities, and
- Promote HSE best practice in all our activities.

All staff, contractors and sub contractors at Eni Australia Ltd have a personal responsibility to support this HSE Statement and are encouraged to openly report any HSE issue or concern. In addition, everyone is obliged to intervene in unsafe acts or conditions to prevent injury, environmental impact or damage to assets.

Managing Director 
Denis Palermo

Date 01 November 2023

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 418 / 426
			Validity Status	Rev. No. B	

Appendix B: Environmental Values and Sensitivities

 eni australia	Company document identification 000694_DV_CD.HSE.0081.000_00	Owner document identification	Rev. index. B	Appendix B
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Contents

1	DESCRIPTION OF THE ENVIRONMENT	2
1.1	Physical Environment	2
1.1.1	Climate	2
1.1.2	Oceanography.....	3
1.1.3	Geomorphology and Geology	5
1.2	Key Marine Habitats	6
1.2.1	Seabed and Sedimentation.....	6
1.2.2	Open Water Benthic Habitats	7
1.2.3	Intertidal Shorelines	9
1.2.4	Plankton.....	12
1.3	Threatened and Migratory Species and ecological communities.....	12
1.3.1	Marine Mammals	12
1.3.2	Marine Reptiles	17
1.3.3	Fish, Sharks and Rays.....	23
1.3.4	Seabirds/Shorebirds	27
1.4	Protected and Significant Areas	30
1.4.1	Australian Marine Parks.....	30
1.4.2	State Marine Protected Areas.....	32
1.4.3	Key Ecological Features.....	33
	References.....	35

Attachments

- B1: OPERATIONAL AREA PMST RESULTS
- B2: ZPI PMST RESULTS
- B3: EMBA PMST RESULTS

 eni australia	Company document identification 000694_DV_CD.HSE.0081.000_00	Owner document identification	Rev. index. B	Appendix B
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1 DESCRIPTION OF THE ENVIRONMENT

This Appendix supplements Section 4 of the Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan (EP) and describes the environment within the Operational Area, zone of potential impact (ZPI) and EMBA. It includes details of the relevant environmental values and sensitivities of the environment as required by Section 21(2) and 21(3) of the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (OPGGS(E) Regulations).

Searches for protected species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) were undertaken for the Operational Area, EMBA and zone of potential impact (refer Attachment B1-B3), using the DCCEE Protected Matters Search Tool (PMST) for the purpose of identifying matters of national environmental significance listed under the EPBC Act. This document is informed by these searches.

For a description of the Operational Area, ZPI, and EMBA refer to the EP.

Refer to Section 4.4 of the EP for figures of Biological Important Areas (BIAs) and Habitat Critical for the Survival of species; and refer to Section 4.5 for figures of Australian and State Marine Parks.

Socio-economic and cultural values of the Operational Area and EMBA have been presented in Section 4.6 of the EP.

1.1 Physical Environment

1.1.1 Climate

The climate in the Joseph Bonaparte Gulf (JBG) region is monsoonal with a wet summer and a dry winter. The wet season commences between September and November as the south-east trade winds weaken over northern Australia and land temperatures rise. This results in two or more semi-permanent heat lows forming over central Australia, one over the Kimberley and Great Sandy Desert, and often another just south of the Gulf of Carpentaria.

The early part of the wet season is marked by frequent thunderstorms. As the season progresses, moist ocean air from the north and north-west streams into the lows and several days of heavy rain may occur.

Mean daily maximum temperatures for Port Keats range from about 30°C to 34°C, and minima from 14.5°C to 25°C (BOM, 2008). Annual rainfall is 1,521mm. Almost all rainfall occurs between November and April (wet season), with the greatest falls being in January and February. The frequency and severity of the thunderstorms produce a large variation in the monthly rainfall. Rainfall during the dry months is sporadic and light.

 eni australia	Company document identification 000694_DV_CD.HSE.0081.000_00	Owner document identification	Rev. index. B	Appendix B
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1.1.2 Oceanography

Circulation in the JBG is dominated by the large tidal currents (Figure 1-1). The currents rotate in a clockwise direction with the major flood and ebb directions towards the south-east and north-west, respectively. Further towards the shoreline, current speeds increase with tidal range and become directed more longshore. These large currents are responsible for the generation of dune forms on the seabed as noted in Admiralty Charts for the region. Very nearshore currents are influenced by the coastal topography with an anticlockwise gyre forming on the flood tide and a clockwise gyre on the ebb.

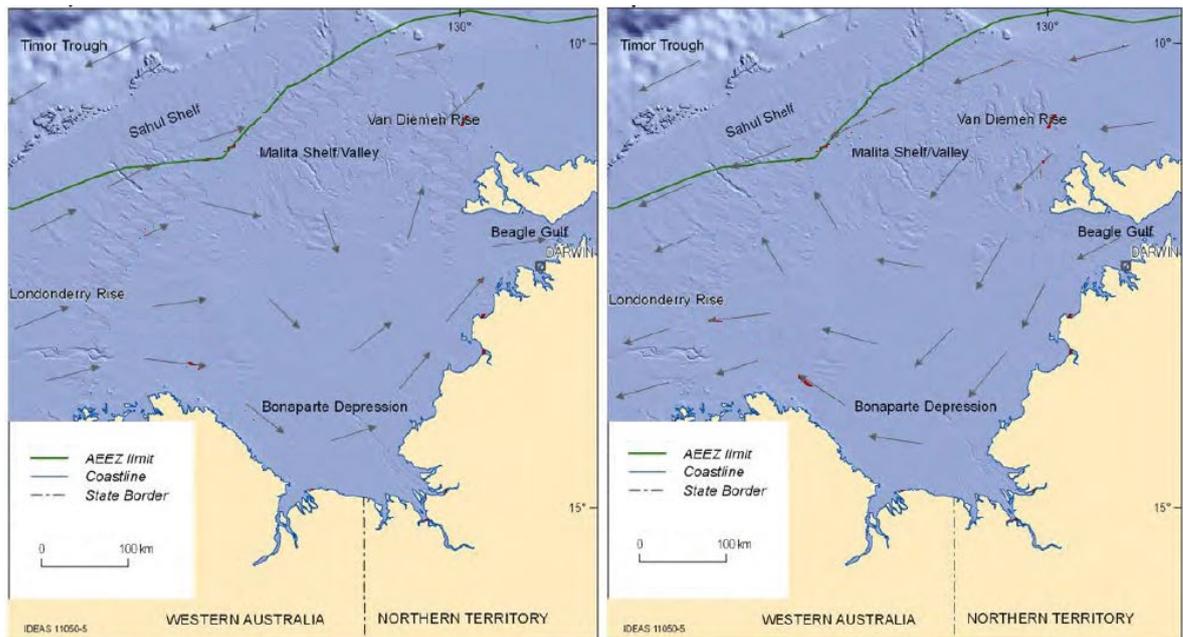


Figure 1-1: Joseph Bonaparte Gulf wind driven currents for monsoon (January, left) and trade wind (July, right) conditions (DoEE, 2013)

Large scale ocean circulations are forced by synoptic scale winds. The south-east trade winds drive a mean westerly current of up to 0.2m/s in the Timor Sea. In the wet season, currents reverse to flow towards the east. The influence of these large-scale circulations in the JBG is unknown.

The JBG experiences a mixed semidiurnal tide with a very large range in tidal elevations and correspondingly strong tidal currents (Przeslawski *et al.*, 2011). The region is also affected by cyclones at an average annual rate of 0.6 cyclones per year (Woodside, 2004). Cyclone events generate the strongest currents in the Gulf, with current speeds in some areas expected to reach 1.4m/s; however, the ambient, non-cyclonic wind-driven currents are generally less than 0.1m/s (Woodside, 2004; Przeslawski *et al.*, 2011). Ambient wind-driven currents are generally directed from west to east during the monsoon season (December to March) and east to west during the trade wind season (April to November), while an offshore westward current persists throughout the year.

	Company document identification 000694_DV_CD.HSE.0081.000_00	Owner document identification	Rev. index. B	Appendix B
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The tides in the JBG propagate in from the Timor Sea and circulate around an Amphidromic Point located offshore from Cape Londonderry in the north-west. The JBG is subject to a tidal range of greater than four meters which is the highest tidal range in Northern Australia. The tides in the JBG are semi diurnal and the tidal wave propagates in from the Timor Sea and circulates around an amphidromic point located offshore from Cape Londonderry in the north-west. Tidal ranges increase shorewards with maximum tidal ranges exceeding 8m along the shoreline between Wyndham and Darwin.

The Holloway Current (Figure 1-2), a relatively narrow boundary current that flows along the north-west shelf of Australia between 100 and 200m depth, also influences the seas in the EMBA.

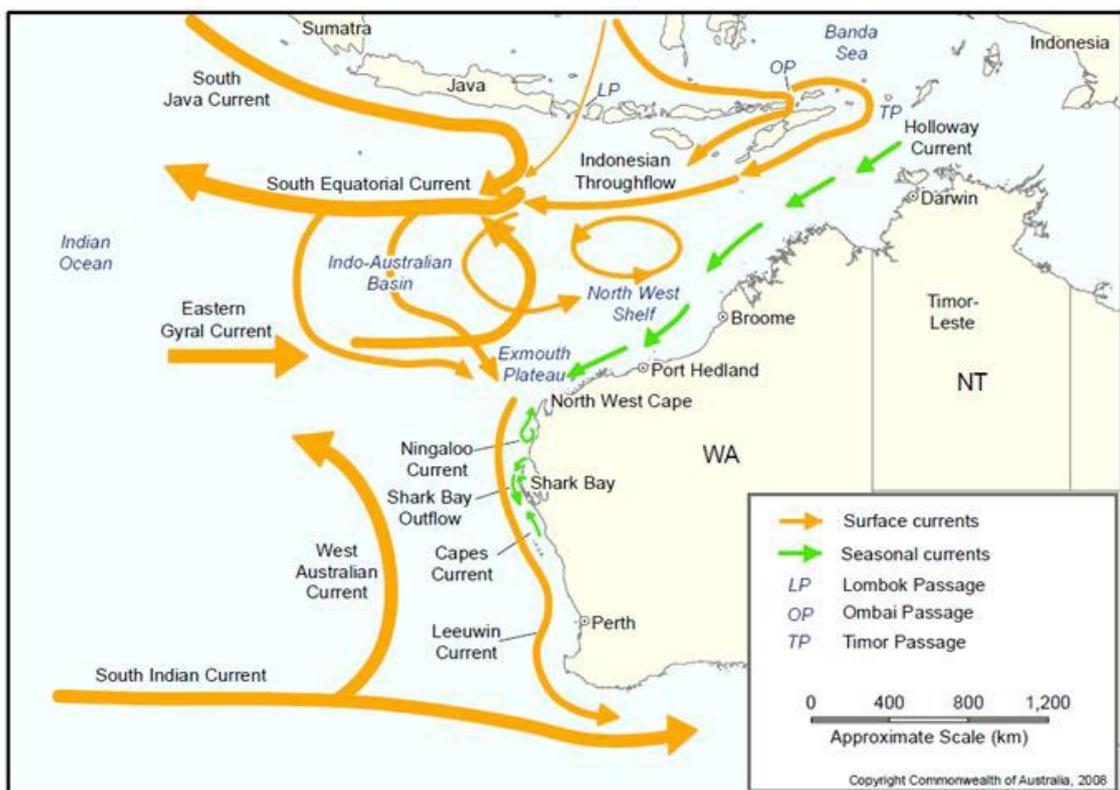


Figure 1-2: Surface currents Northern Territory and Western Australia

The closest tidal station to the Operational Area is Port Keats, which is a secondary port located between the two standard ports of Darwin and Cape Domett. The tides are semidiurnal (two highs and lows each day) with a slight diurnal inequality (difference in heights between successive highs and low). There is a well-defined spring-neap lunar cycle, with spring tides occurring two days after the new and full moon. Table 1-1 provides the standard levels for Port Keats. Highest astronomical tide exceeds 8m and the mean ranges for spring and neap tides are 5.6m and 1.9m, respectively. Tidal ranges reduce offshore towards the Operational Area.

Superimposed on the astronomical tide are 'meteorological' tides resulting from changes in atmospheric pressure and strong onshore or offshore winds. Storm surges during cyclones can appreciably raise sea levels above the predicted astronomical tidal height and inundate low lying areas.

	Company document identification 000694_DV_CD.HSE.0081.000_00	Owner document identification	Rev. index. B	Appendix B
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Table 1-1: Standard tide levels for Port Keats (AHS, 2003)

Port Keats	Level (m)
Highest Astronomic Tide	8.2
Mean High Water Springs	7.2
Mean High Water Neaps	5.3
Mean Sea Level	4.4
Mean Low Water Neaps	3.4
Mean Low Water Springs	1.6

During the summer season, the Operational Area is exposed to both sea and swell generated from the prevailing north-westerly monsoon winds blowing across the Timor Sea. Extreme waves are generated by cyclones during the summer season.

Mean monthly surface temperatures in the JBG region vary between about 26°C between July and August and 30°C during December. The water column is well mixed all year round with respect to temperature, due to the large tidal range and strength of currents. Baseline surveys carried out in 2010 and 2011 showed that seawater temperature was consistent across the area.

1.1.3 Geomorphology and Geology

The Operational Area is located in the Petrel Sub-Basin, in the Southern Bonaparte Basin, which contains a thick sequence of Palaeozoic to Cenozoic sediments with a thin cover of Mesozoic rocks.

Five significant offshore petroleum fields have been discovered in the Southern Bonaparte Basin. The Blacktip, Tern and Petrel Fields comprise gas-bearing Permian—Late Carboniferous sandstones; and the Turtle and Barnett Fields consist of stacked oil-bearing sandstones of Permian-Carboniferous age (Figure 1-3). These fields were charged from mature early Carboniferous and Permian source kitchens. Basin modelling indicated that hydrocarbons expulsion took place from late Triassic to late Cretaceous (DMIRS, 2021).

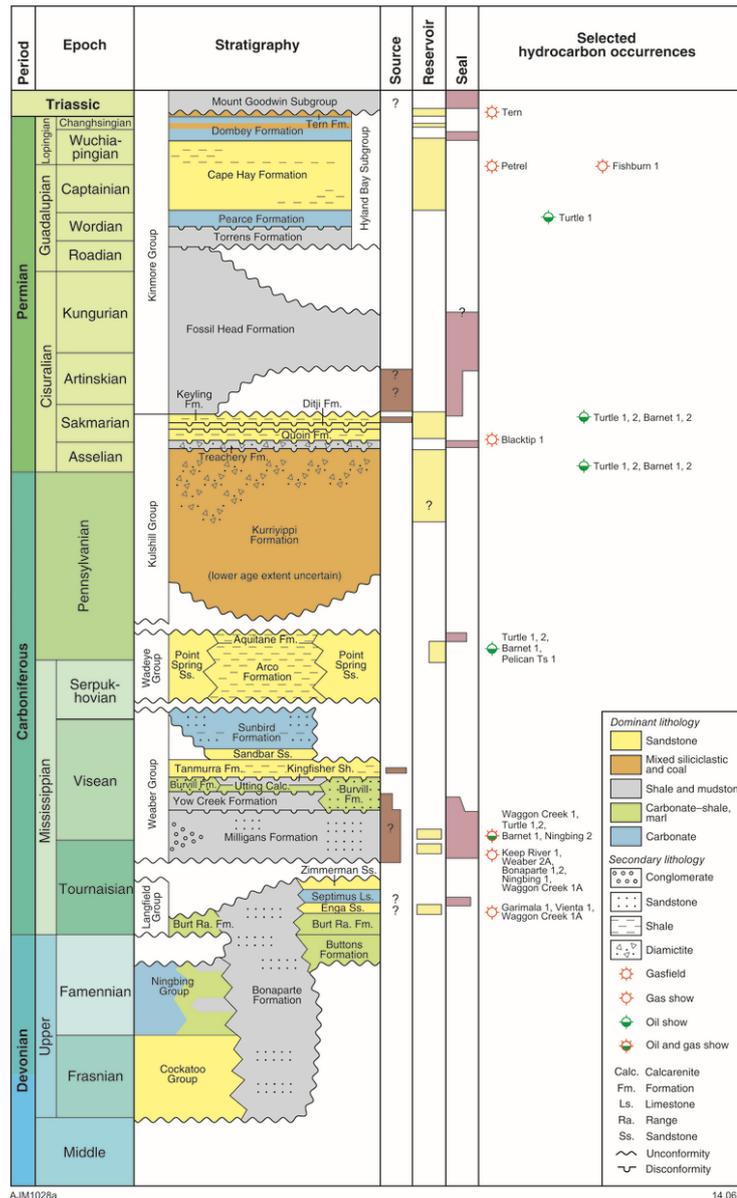


Figure 1-3: Devonian–Permian stratigraphy and petroleum systems of the southern Bonaparte Basin (DMIRS, 2021)

1.2 Key Marine Habitats

1.2.1 Seabed and Sedimentation

The top layer of sediment in the JBG from approximately 3 to 35km offshore is expected to be greater than 1m in depth and consists of sands and gravels with variable proportions of clay. This material is primarily alluvium, derived from sedimentary sandstones and basal conglomerate. Sonar images indicate some minor palaeochannels in this area containing mega ripple or sand waves. The sediments are generally unconsolidated coarse sand, fine gravel interspersed with areas of flat and featureless seabed containing very soft to firm gravelly clays (Woodside, 2004).

	Company document identification 000694_DV_CD.HSE.0081.000_00	Owner document identification	Rev. index. B	Appendix B
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The Operational Area is located in the upper (outer) reaches of the JBG, in an area of relatively flat featureless seabed. Sediments are predominately very soft, grey-green, gravelly sand clays (Woodside, 2004).

The EMBA overlaps with the carbonate bank and terrace system of the Sahul Shelf KEF, carbonate bank and terrace system of the Van Diemen Rise KEF, and the Pinnacles of the Bonaparte Basin (refer to Section 4.5.2 of the EP). The nearest feature of the carbonate bank and terrace system of the Sahul Shelf KEF is 81km to the west of the Operational Area. The Sahul banks are a chain of complex submerged algal banks on the middle and outer continental shelf (DSEWPAC, 2012a). The system is of regional significance due to enhanced biodiversity and productivity compared with surrounding areas. The Sahul banks feature hard substrate suitable for sessile species in an otherwise soft sediment environment. Banks within the KEF rise steeply from 80m to 30m water depth in some areas, with the elevated hard substrates providing suitable surfaces for organisms to adhere to, and ideal sites for exposure to passing nutrients and light (in areas less than 45m water depth).

Sessile benthic invertebrate communities including hard and soft corals, sponges, fans, whips and bryozoans are found within the KEF. The banks are considered a biodiversity hotspot for sponges with more species and different communities than the surrounding seafloor (DSEWPAC, 2012a).

Further information on the Sahul Shelf KEF and other relevant KEFs within the EMBA are presented in Section 1.4.3.

1.2.2 Open Water Benthic Habitats

The dominant offshore features in the lower JBG are the elongated parallel sand shoals extending out from the Victoria River and the extensive sand shoals on either side of the entrances to the Cambridge Gulf, known as the King Shoals and Medusa Banks. Depth increases gradually out to the continental margin; however, the continental shelf is dissected by numerous paleo-channels. Shallow shoals, small seamounts and occasionally a few islands and tidally exposed reefs occur along the edge of the continental shelf.

The Operational Area is within areas of infaunal plains identified by flat, soft substrate with occasional rocky outcrops, scattered epifauna, biota dominated by infauna (Figure 1-4).

 eni australia	Company document identification 000036_DV_PR.HSE.0887.000	Owner document identification	Rev. index.		Sheet of sheets
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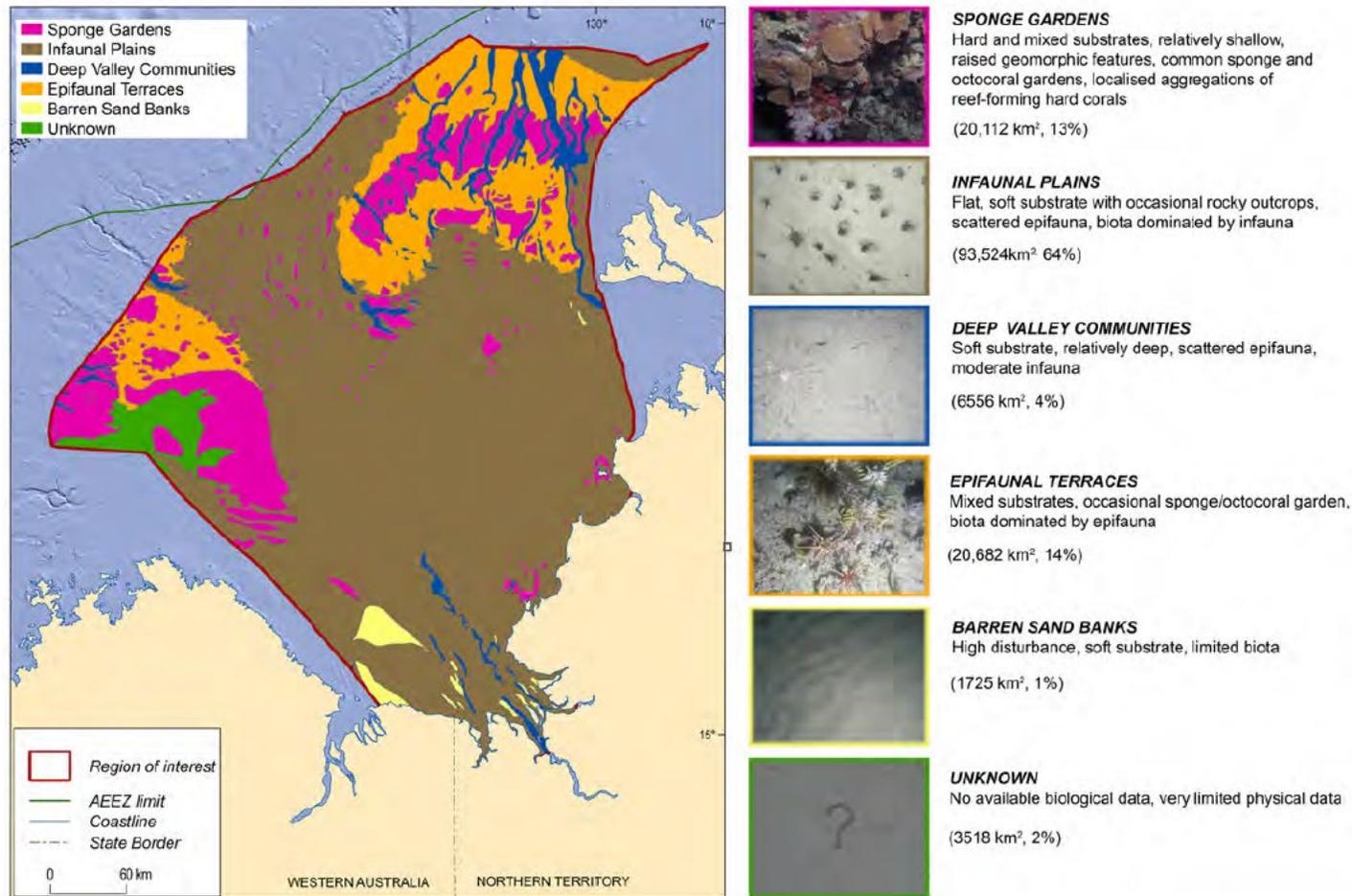


Figure 1-4: Distribution of habitats and biological communities in the JBG (Przeslawski & Nichol, 2012)

 eni australia	Company document identification 000036_DV_PR.HSE.0887.000	Owner document identification	Rev. index. 04	Appendix B
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1.2.3 Intertidal Shorelines

1.2.3.1 Joseph Bonaparte Gulf

The lower part of JBG, to the south and east of the Operational Area is relatively shallow with a coastline dominated by sand banks, extensive mudflats, mangrove systems, tidal creeks and the estuaries of the Victoria River system and Cambridge Gulf (Figure 1-5).



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Rev. index.
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Appendix
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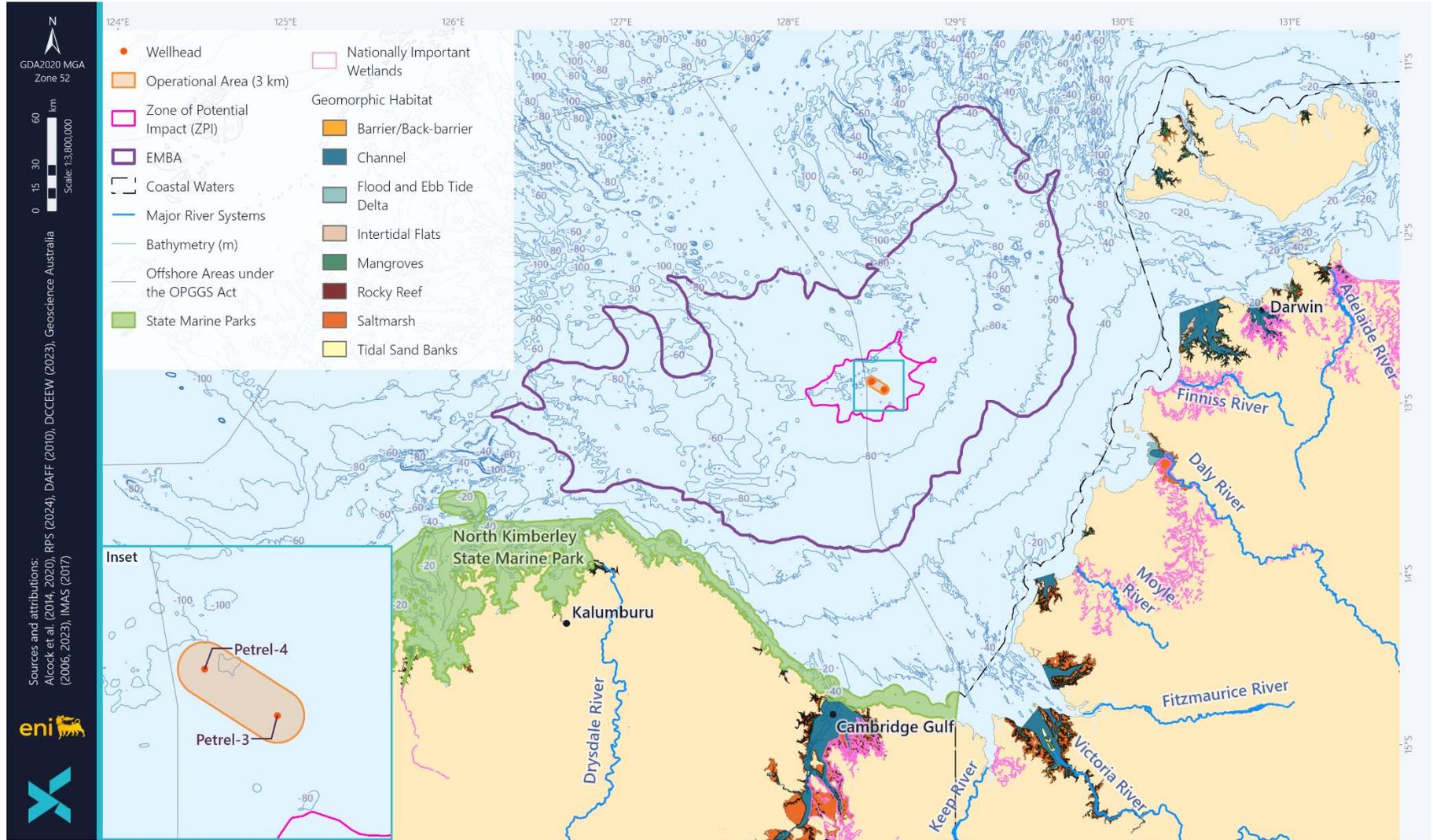


Figure 1-5: Shoreline to the south and east of the Operational Area

1.2.3.2 Kimberly Coastline

Around 5,102km of the Kimberly coastline was surveyed, analysed and mapped after the Montara spill to provide spatial and quantitative characterisation of vulnerable coastal ecological features. Mangroves, the most vulnerable coastal habitat present, grow along 63% of the surveyed shoreline, covering over 3,200km (Table 1-2). Saltmarsh occurs on more than 1,200km of coastline or 23.8% survey region and the coastline is rocky for 2,763km of shoreline (DPAW, 2014).

Marine megafauna sightings were also common along almost the entire shoreline during the aerial survey. The greatest concentrations of megafauna (~60% observed) were recorded in the area from Cape Londonderry to Admiralty Gulf which are 190km and 300km south-west of the Operational Area, respectively. The majority (67%) of megafauna sightings were of marine turtles (DPAW, 2014).

Table 1-2: Summary of coastal characteristics from Darwin (NT) to Broome (WA)

	Feature	Estimated length (km)	% of shoreline
Physical characteristics	Rocky	2,762.8	54.2
	Beach	1,663.7	32.6
	Flat	2,185.5	42.8
	Dune	1,536.9	30.1
	Other wetland	15.9	0.3
Vegetated habitat type	Mangrove	3,214.1	63.0
	Saltmarsh	1,215.4	23.8
	Fringing coral	350.9	6.9
	Seagrass verge	11.5	0.2
	Coastal woodland	3,886.6	76.2
State of erosion and deposition	Deposition	548.8	10.8
	Erosion	544.7	10.7
	Stable	3,576.7	70.1
Tidal wetland	Mangrove	3,214.1	63.0
	Saltmarsh	1,215.4	23.8
	Sand and mudflats	1,379.2	27.0
	Salt flat	1,396.8	27.4
Other	Human modified	169.8	3.3
	Water reach	514.2	10.1

**Note Category percentages do not add to 100% as categories overlap in some locations (DPAW, 2014)*

1.2.4 Plankton

Plankton is divided into two categories: phytoplankton (microscopic plants) and zooplankton (animal larvae). Phytoplanktonic algae support the entire primary production of the oceans and range in size from 0.2 to 200mm. Zooplankton are small, mostly microscopic animals that drift with the ocean currents, and it has been estimated that 80% of the zooplankton in waters off the Australian continental shelf and shelf margin are the larval stages of fauna that normally live on the seabed. A common feature of plankton populations is the high degree of temporal and spatial variability. Phytoplankton, in tropical regions, had marked seasonal cycles, with higher concentrations occurring during the winter months (June-August) and low in summer months (December-March) (Schroeder *et al.*, 2009). Zooplankton that rely on them for food are subject to similar seasonality. Spatial distribution of plankton is patchy and uneven, both vertically and horizontally.

Phytoplankton species rapidly multiply in response to bursts of nutrient availability and are subsequently consumed by zooplankton that in turn are consumed by small pelagic fish and some whales. The spawn of commercial fish species (that comprise part of the zooplankton community) may be present in and around the Operational Area.

1.3 Threatened and Migratory Species and ecological communities

1.3.1 Marine Mammals

Threatened and migratory marine mammal species within the Operational Area and EMBA are listed and presented in Section 4.4.3 of the EP, along with identified BIAs.

Details on the species identified by the EPBC Act PMSTs for the Operational Area and EMBA are included in the sections below.

BIAs are areas and times used by protected marine species for carrying out critical life functions, such as reproduction, feeding, migration and resting (DCCEEW, 2024a). BIAs are designated for marine species protection under the EPBC Act (DCCEEW, 2024a). BIAs have been under review by DCCEEW and are presented on the Australian Marine Spatial Information system (AMSIS). Note that shapefiles for the data presented on AMSIS are not available at the time of writing, hence the most recent available data is used to inform presence of BIAs and figures for BIAs within this EP (DCCEEW, 2024b).

1.3.1.1 Sei Whale

Sei whales (*Balaenoptera borealis*) have been infrequently recorded in Australian waters (DoE, 2024a). Sei whales are considered a cosmopolitan species, ranging from polar to tropical waters, but tend to be found more offshore than other species of large whales. The proportion of the global population in Australian waters is unknown as there are no estimates for sei whales in Australia (DoE, 2024a). It is likely that threats affecting the global population of sei whales would also affect Australian populations (Horwood, 1987).

The AMSIS records no BIAs for this species. It is possible that individual sei whales may be present in low numbers within the northern part of the EMBA. Individuals are unlikely to be present in the Operational Area given the depths (~95 m) and distance from known aggregation areas.

1.3.1.2 Blue Whale

There are two recognised sub-species of blue whale in the Southern Hemisphere, both of which are recorded in Australian waters. These are the southern (or 'true') blue whale (*Balaenoptera musculus*) and the pygmy blue whale (*Balaenoptera musculus brevicauda*) (DoE, 2024b). In general, southern blue whales occur in waters south of 60°S and pygmy blue whales occur in waters north of 55°S (i.e, not in the Antarctic). On this basis, nearly all blue whales sighted in the North West Marine Region (NWMR) are likely to be pygmy blue whales.

A population of pygmy blue whales migrate biannually through the NWMR from feeding grounds. The East Indian Ocean (EIO) pygmy blue whale population is seasonally distributed from Indonesia (a potential breeding ground) to south-west of Australia and east across the Great Australian Bight and Bonney Upwelling to beyond the Bass Strait (Blue Planet Marine, 2020). Migration seems to be variable, with some individuals appearing as resident to areas of high productivity and others undertaking migrations across long distances (DoE, 2024b). McCauley *et al.* (2018) describe three migratory stages around Australia for the EIO pygmy blue whale population: a 'southbound migratory stage' where whales travel southwards from Indonesian waters offshore from the WA coastline, mostly from October to December but possibly into January of the following year; a protracted 'southern Australian stage' (January to June) where animals spread across southern waters of the Indian Ocean and south of Australia; and a 'northbound migratory stage' (April to August) where animals travel north back to Indonesia again.

Thums *et al.* (2022) used passive acoustic monitoring and satellite telemetry data to assess the spatial extent of the distribution, migration and foraging areas for pygmy blue whales in the South-east Indian Ocean. They highlighted extensive use of slope habitat off Western Australia and minimal use of shelf habitat. Additionally, pygmy blue whales off Western Australia were mostly engaged in migration, with short periods of foraging. Whale density was highest in the southern part of the north-west Australian coast and whales were there between April-June, and November-December. Thums *et al.* (2022) identified the most important foraging (and/ or resting/ breeding) areas from south to north as:

- the Perth Canyon and vicinity,
- the shelf edge off Geraldton,
- the shelf edge from Ningaloo Reef to the Rowley Shoals (not continuous) and including a couple of small areas near the shelf edge off approx. 25°S, and
- the Banda Sea.

There is no BIA for pygmy blue whales within the EMBA. However, given their migratory patterns along the west coast of Australia, the PMST report (Section 4.4.3 of the EP) indicates that pygmy blue whales are likely to occur within the Operational Area and EMBA during migration. However, studies conducted by Thums *et al.* (2022) identified the distribution and migration routes pygmy blue whales occur to the west of the EMBA. Therefore, individuals are unlikely to be present in the Operational Area given the depths (95 m) and distance from known aggregation areas and migration pathways.

1.3.1.3 Fin Whale

Fin whale (*Balaenoptera physalus*) distribution in Australian waters is known primarily from stranding events and whaling records. Fin whales have been observed in South Australian waters between November and May but the presence in north-west Australian waters is unknown (DoE, 2024c).

Reliable estimates of fin whale population size in Australia are not currently possible. The proportion of time that this species spends at the surface varies considerably depending on their behaviour and local ecology (e.g. whether they are traveling or foraging; depth at which prey occurs): thus, extrapolation of accurate population estimates is difficult. There are no known mating or calving areas in Australian waters (DoE, 2024c).

There are no known mating or calving areas in Australian waters and no BIAs for the fin whale are currently identified. However, given their known distribution and movements, it is possible that individual fin whales may pass through the EMBA in low numbers. Individuals are unlikely to be present in the Operational Area given the depths (95 m) and distance from known aggregation areas.

1.3.1.4 Humpback Whale

The humpback whale (*Megaptera novaeangliae*) is the most commonly sighted whale in north WA waters. Major breeding areas have been identified for the western Australian population in the Kimberley region and particularly between Lacepede Islands (16.8° S) and Camden Sound (15.38° S) (Jenner et al., 2001) (Figure 1-6). Camden sound appears to be the northern most limit for the majority of west coast whales and is considered to be an important breeding area (Jenner et al. 2001). Double et al. (2010) found that satellite tagged whales in the area of Camden sound tended to move in an inconsistent direction, which suggests this area is used for breeding. The species migrates annually from feeding grounds in Antarctic waters during the summer months to their breeding and calving grounds along the west coast (DoE, 2024d).

Studies conducted by Jenner *et al.* (2001) indicate that during the southern migration most humpback whales, particularly cow/calf pairs, stay closer to the coast than during the northern migration. On their southern migration, cow-calf pairs frequently rest in aggregation areas along the Western Australian coastline. Important resting areas during the southern migration include Shark Bay, Exmouth Gulf, and the southern Kimberley region (DoE, 2024d).

There is no BIA for humpback whales within the EMBA. However, it is possible that individual whales may pass through the EMBA in low numbers. Individuals are unlikely to be present in the Operational Area given the distance from known migration routes.

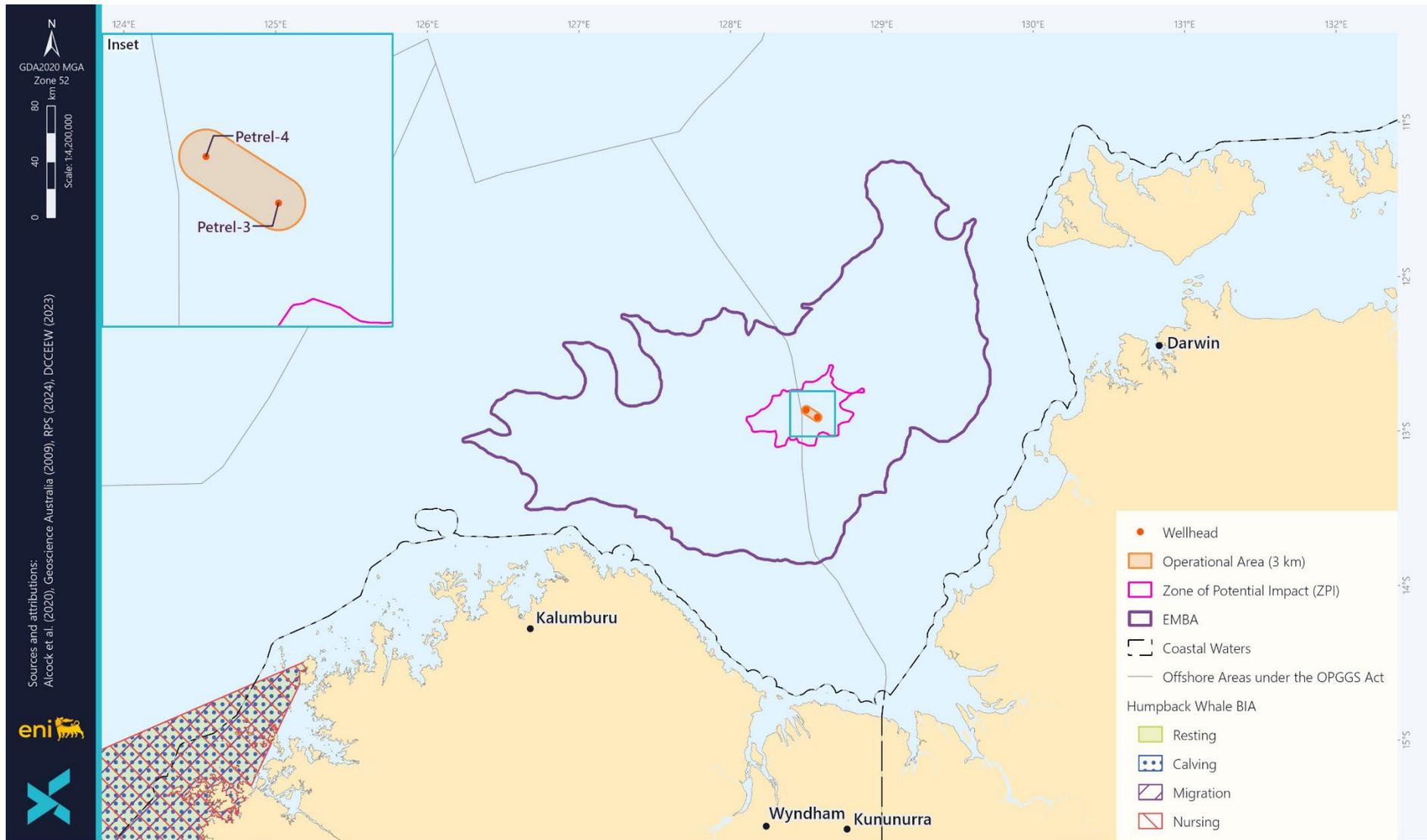


Figure 1-6: Biologically Important Areas for the Humpback Whale

1.3.1.5 Bryde's Whale

Bryde's whales (*Balaenoptera edeni*) migrate seasonally in temperate to tropical waters, in depths ranging from 200 m to 1,000 m although they more commonly migrate at depths nearer to 200 m (DoE, 2024e). Bryde's whales have been sighted in all areas of Australia except the Northern Territory, with the majority recorded in South Australia, however no specific breeding or feeding grounds have been found within Australia (DoE, 2024e).

Bryde's whales may also occasionally transit through the EMBA; however, they are not expected to be present in significant numbers. Individuals are unlikely to be present in the Operational Area given the distance from known aggregation areas.

1.3.1.6 Killer Whale

Killer whales (*Orcinus orca*) prefer deep, cold waters (Bannister *et al.*, 1996) and have been recorded along continental slopes (DoE, 2024f). The species is found throughout the world's oceans and has been recorded in all areas of Australia, however no important breeding, nesting or resting grounds have been identified in Australia (DoE, 2024f).

No BIAs have been identified for this species within the EMBA, although the species may be present in low numbers.

1.3.1.7 Indo-Pacific humpback dolphin

In Australia, Indo-Pacific humpback dolphins (*Sousa chinensis*) are known to occur along the northern coastline, extending to Exmouth Gulf on the west coast (25 S), and the Queensland/NSW border region on the east coast (34°S) (DoE, 2024g). A helicopter survey conducted along the nearshore coastal areas along the eastern half of the Northern Territory found Australian humpback dolphins were sparsely distributed across this region. Indo-Pacific humpback dolphins inhabit shallow coastal, estuarine, and occasionally riverine habitats, in tropical and subtropical regions, typically occurring in depths of 20 m (Parra & Cagnazzi, 2016). Most studies to date indicate that Australian humpback dolphins occur mostly close to the coast (within 20 km from land) and in relatively sheltered offshore waters near reefs or islands, but they have been seen 55 km offshore in water depths of 30-50 m (Parra & Cagnazzi, 2016).

Given their preference for shallow coastal habitats, the species is expected to transit the shallow water sections of the EMBA only (e.g. coastlines). The species may occasionally transit the Operational Area.

1.3.1.8 Spotted bottlenose dolphin

Spotted bottlenose dolphins (*Tursiops aduncus*) occur in four main regions around Australia, being the eastern Indian ocean, the Tasman Sea, the Coral Sea and the Arafura/Timor Sea (DoE, 2024h). The species are generally distributed in the tropical waters of the North-West Marine Region, along the Pilbara and Kimberley coasts and inhabiting shallow coastal waters along the continental shelf (DoE, 2024h).

Given the species' use of relatively deeper waters and the potential for long-range migratory movements, it is likely this species will occasionally transit the Operational Area and EMBA.

1.3.1.9 Dugong

Dugongs are not expected to be common inhabitants of the JBG. The dugong (*Dugong dugon*) is listed as vulnerable under the IUCN. Dugongs are patchily distributed throughout coastal and island tropical and subtropical waters of Australia, with major concentrations of dugongs coinciding with sizeable seagrass beds on which they feed. In the Northern Territory, specific dugong habitats are associated with seagrass meadows along the northern coast. The closest habitat that supports dugongs is located at Daly River which is approximately 190km south-east from the Operational Area (DoE, 2024i). The lack of seagrass in JBG is expected to limit the distribution of dugongs in the region

Observations from aerial surveys in NT waters focused on dugong populations in the Gulf of Carpentaria and in the northern parts of the NT, such as offshore the Tiwi Islands and Coburg Peninsula. No surveys have been undertaken in the JBG. However, seagrass habitat is limited (Woodside, 2004) and the JBG is therefore not expected to provide a significant habitat for dugong.

1.3.1.10 Australian Snubfin Dolphin

Australian snubfin dolphins (*Orcaella heinsohni*) occur in the offshore waters of northern Australia, ranging from Broome to Brisbane River (Parra *et al.* 2002a). The species has been recorded up to 23 km offshore. Sightings indicate that Australian snubfin dolphins occur mostly in protected shallow coast waters, and near river and creek mouths (Parra, 2006; Parra & Corkeron, 2001; Parra *et al.*, 2002a).

Given their preference for shallow coastal habitats, the species is expected to transit the shallow water sections outside of the EMBA only (e.g. coastlines) and are unlikely to be present in the Operational area in significant numbers.

1.3.2 Marine Reptiles

Threatened and migratory marine reptile species within the Operational Area and EMBA are listed in Section 4.4.8 of the EP, along with identified BIAs.

Details on the threatened species identified by the EPBC Act PMST for the Operational Area and EMBA are included in the sections below.

1.3.2.1 Green turtle

Green turtles (*Chelonia mydas*) are generally found in tropical and subtropical waters at around 20°C although the species can be present in temperate waters. Green turtles are known to nest, forage and migrate across tropical northern Australia, with significant nesting grounds including the Dampier Archipelago, Ashmore Reef and the Lacepede Islands (DoE, 2024j).

Green turtles are common in the North-west Marine Region, with the JBG AMP identified as an important foraging area for the species (DoE, 2024j). Additionally, the Operational Area overlaps a foraging green turtle BIAs and Habitat Critical to the Survival of Marine Turtles (Figure 1-7). Green turtles are likely to forage within the EMBA and may forage out to the Operational Area.

1.3.2.2 Loggerhead Turtle

Loggerhead turtles (*Caretta caretta*) have a global distribution throughout tropical, sub-tropical and temperate waters (Marquez, 1990). In Australia, they generally occur around coral and rocky reefs, seagrass beds and muddy bays throughout Eastern, Northern and Western Australia (DoE, 2024m). Known nesting areas in WA extend from Shark Bay to the North West Cape, with the closest nesting ground to the EMBA located at the Dampier Archipelago (DoE, 2024m), ~1,300km southwest of the EMBA. Beagle Bay south of the Dampier Peninsula is reported as an important nesting area by the Nyul – Nyul Traditional Owners.

Loggerhead turtles show fidelity to both their foraging and breeding areas and can migrate over 2,600km between the two (DoE, 2024m). The WA stock forages from Shark Bay through to Arnhem Land in the NT (DoE, 2024m). Loggerhead turtles are known to forage around the pinnacles of the JBG and the carbonate bank and terrace of the Sahul Shelf KEF (which overlaps the EMBA).

The EMBA overlaps with a foraging BIA for the loggerhead turtle, therefore loggerhead turtles are likely to occur within the EMBA. The species may forage in the Operational Area in low numbers (Figure 1-7).

1.3.2.3 Olive ridley turtle

The olive ridley turtle (*Lepidochelys olivacea*) is the smallest Australian marine turtle and is the most numerous of all marine turtles. Nesting aggregations occur worldwide, although no large rookeries have been identified in the NT and no major breeding areas have been recorded in Australia (DoE, 2024o). This species forages on shallow benthic habitats and is commonly found in soft-bottomed habitats around the northern parts of Australia (Figure 1-8 Nesting occurs all year round in Northern Australia and important foraging areas are found within the along the JBG shoreline (DoE, 2024o). The Operational Area overlaps with the olive ridley turtle foraging BIA (Section 4.4.4 of the EP).

Olive ridley turtles may forage within the EMBA, as the waters present a potential feeding area. Studies define suitable internesting habitat as areas of water depths less than 16 m, which are typically within 5 to 10km of coastlines (Whittock et al., 2016). Water depths in the Operational Area (95m depth) suggest they are unlikely to comprise important habitat for the turtles during any life history phase.

A foraging BIA overlaps the Operational Area and EMBA (Figure 1-8). No habitat critical to the survival of the species is known to occur within the vicinity of the EMBA.

1.3.2.4 Flatback Turtle

A significant flatback turtle nesting area occurs on the north side of Cape Domett, WA (DoE, 2024k) and turtle nesting is also reported on Pelican Island and Lacrosse Island, 200km to the south-west of the Operational Area (Figure 1-8). In western Northern Territory, some nesting occurs year-round though nesting density reaches a peak in July. This dry season peak of nesting activity may be adaptive to protect the eggs from the high lethal sand temperatures that occur in the wet season (DoE, 2024k).

A survey was undertaken to address the lack of data on turtle activity between Cape Hay to Pearce Point. The complete findings of this study are contained in the Blacktip Environmental Impact Statement (EIS) (Woodside, 2004). The results indicated that there are low levels of flatback turtle activity in the area of Northern Yelcherr Beach and

Injin Beach to the north. Two flatback nests and a track of a flatback that came ashore but did not lay at Northern Yelcherr Beach were found during the survey. This suggests that there could be nests laid on this beach by less than 20 individuals per year. Immediately south, on Yelcherr Beach, there was no sign of sea turtle nesting. The coastline from Cape Hay to Pearce Point, includes many sandy beaches, and turtles have been reported to utilise all of these beaches for nesting (LDM, 1994).

Turtle monitoring was undertaken during the construction of the Blacktip Operations facilities in 2009. This confirmed a maximum of 12 nests being laid on Yelcherr Beach per season (Woodside, 2004).

Other nesting areas include Cape Domett, Lacrosse Island and Pelican Island to the south-most extent of the EMBA, which appears to be one of the largest known nesting populations of this species, with an estimated yearly population in the order of several thousand turtles (Whiting *et al.*, 2008).

Flatback turtles nest at Cape Domett throughout the year, with peak occurring August and September (Whiting *et al.*, 2008). A foraging BIA, internesting BIA and internesting buffer BIA occurs within the EMBA (Figure 1-7). Flatback turtles are likely to forage within the EMBA. The species are unlikely to be present in the Operational Area in significant numbers. Studies define suitable internesting habitat as areas of water depths less than 16 m, which are typically within 5 to 10km of coastlines (Whittock *et al.*, 2016). Water depths in the Operational Area (95m) suggest they are unlikely to comprise important habitat for the turtles during any life history phase.

1.3.2.5 Hawksbill Turtle

Hawksbill turtles (*Eretmochelys imbricate*) have a large migratory pattern and are found in both tropical and temperate waters where they are known to forage in coral and rocky reef habitats. They feed on plankton in the open ocean and then on sponges, hydroids, cephalopods, gastropods, jellyfish, seagrass and algae as an adult (DoE, 2024I). The North-west Marine Region supports one of the largest nesting populations of hawksbill turtles in the world, with significant rookeries occurring at Varanus and Rosemary Islands, well outside the EMBA (Pendoley, 2005). The closest nesting grounds to the EMBA is located approximately 260km north-east of the easternmost boundary of the EMBA at Cobourg Peninsula, which is east of the Tiwi Islands. Although hawksbill turtles are known to nest any time of the year, the peak nesting period in Northern Australia occurs between July and October (DoE, 2024I).

There are no BIAs for hawksbill turtles within the EMBA. However, hawksbills may forage within the EMBA and Operational Area, albeit in low numbers.

1.3.2.6 Leatherback turtle

The leatherback turtle (*Dermochelys coriacea*) has the widest distribution of any marine turtle species, and can be found in tropical, subtropical and temperate waters throughout the world (Marquez, 1990). Leatherback turtles are relatively rare in northern Australian waters. The species is more commonly observed in southern coastal waters around Australia.

No major breeding sites of leatherback turtles have been recorded in Australia (Limpus, 2009); however, scattered nesting occurs in the Northern Territory, along the coast of Arnhem Land. For example, low numbers of nesting females have been recorded at Cobourg Peninsula in north-west Arnhem Land (Chatto & Baker, 2008), with breeding occurring mostly during December and January.

Nesting occurs on tropical beaches and subtropical beaches (Marquez 1990) but no major centres of nesting activity have been recorded in Australia, although scattered isolated nesting (1-3 nests per annum) occurs in southern Queensland and Northern Territory (Limpus & McLachlin, 1994). However, leatherback turtles are the most pelagic of all marine turtles and make long migrations between foraging areas and nesting beaches (DoE, 2024n). There are no BIAs or critical habitat located for leatherback turtles within the EMBA.

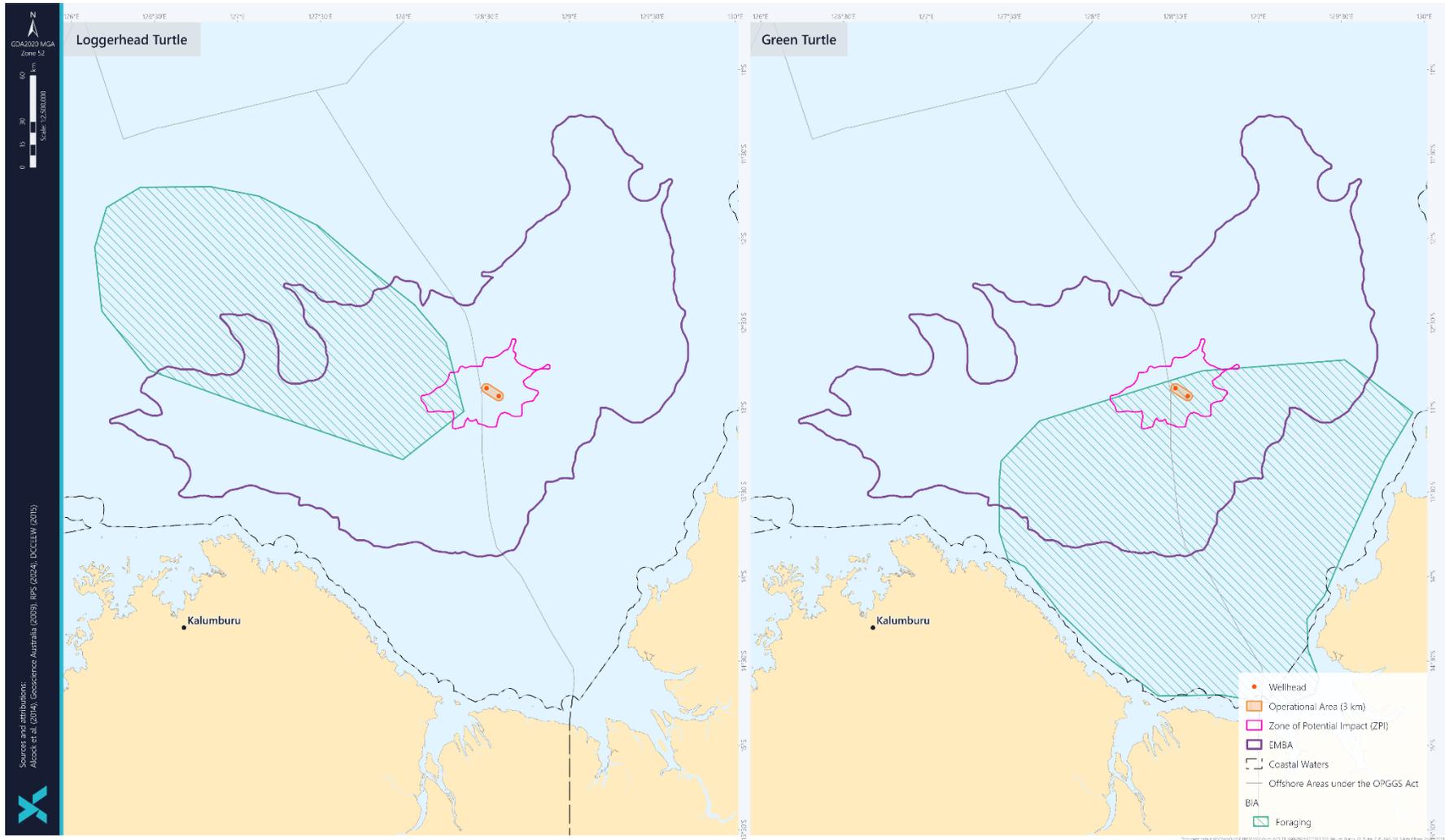


Figure 1-7: Biologically Important Areas for the Loggerhead Turtle and Green Turtle

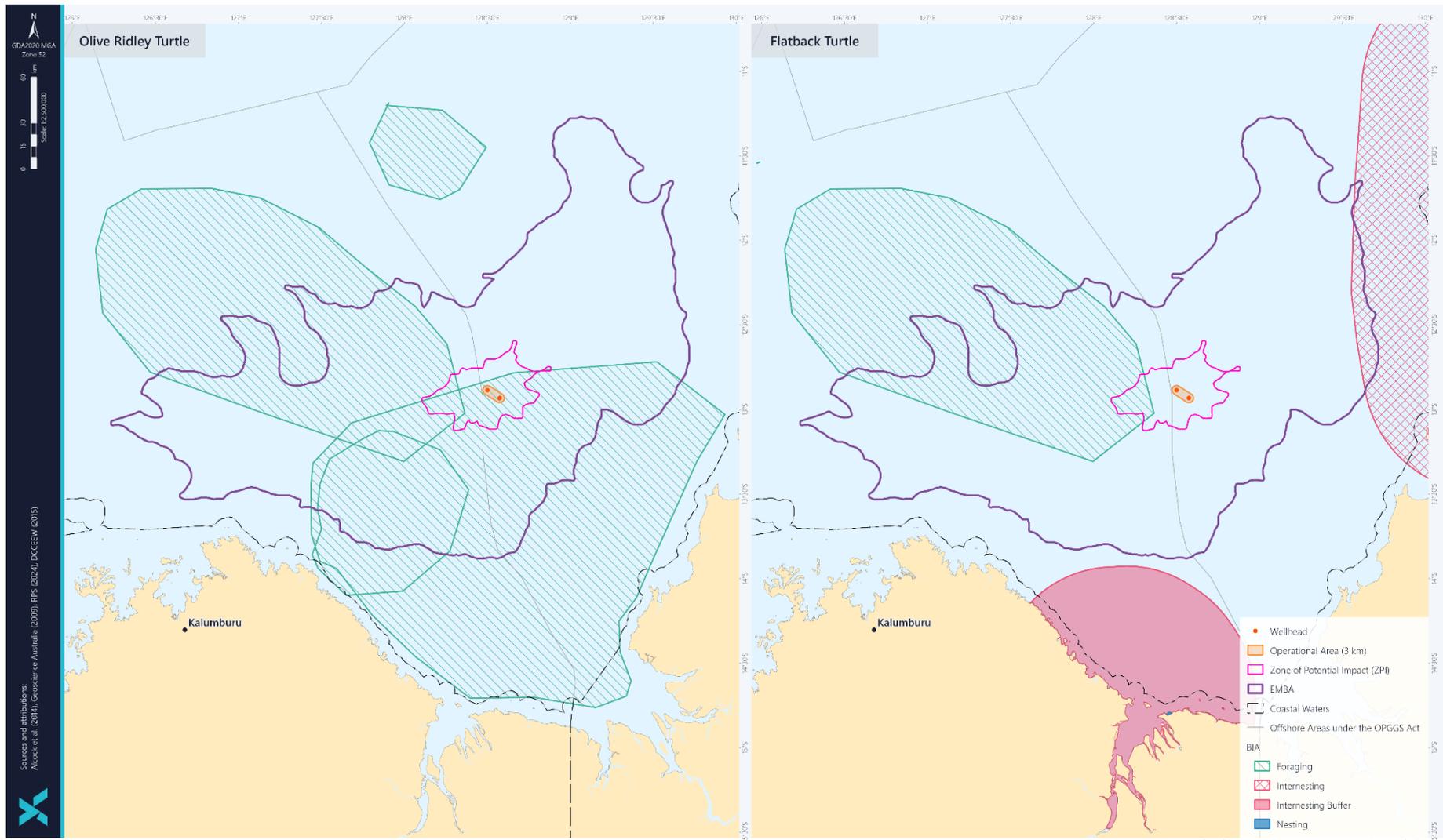


Figure 1-8: Biologically Important Areas for the Olive Ridley Turtle and Flatback Turtle

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1.3.2.7 Salt-water crocodile

The salt-water crocodile (*Crocodylus porosus*) is distributed throughout northern Australian coastal waters and floodplains, lower reaches of rivers and in swamps and marshes and can be found in floodplains and swamps up to 150 km inland from the coast (Webb *et al.*, 1987). The species is found in most major river systems within the Kimberley region in WA, including the Ord, Durack Pentecost and Forrest rivers which enter the JBG via the Cambridge Gulf estuary. This species nests in elevated isolated freshwater swamps (DoE, 2024p). The nearest salt-water crocodile habitats are in the Moyle River and Daly River which are approximately 160 km and 190 km south-east from the Operational Area, respectively (DoE, 2024p).

It is unlikely that saltwater crocodile will be present in the EMBA or Operational Area, given their preference for freshwater river system habitats.

1.3.2.8 Leaf Scaled Sea Snake

The leaf-scaled sea snake occurs in shallow protected areas of reef flats, typically in water depth less than 10 m. The leaf-scaled sea snake has only been recorded at Ashmore and Hibernia reefs (Guinea and Whiting, 2005), indicating it has a very limited distribution.

Key locations of suitable habitat include Ashmore Reef, Shark Bay, Exmouth Gulf, Barrow Island and Montebello Islands (Udyawer *et al.*, 2020). The leaf-scaled sea snake may occur within the EMBA. However, due to its preference for shallow protected areas, it is unlikely to be found within the Operational Area.

1.3.3 Fish, Sharks and Rays

Threatened and migratory fish, shark and ray species within the Operational Area and EMBA are listed in Section 4.4.6 of the EP. There are no BIAs for fish, sharks or rays occurring within the EMBA.

Details on the species identified by the EPBC Act PMST for the Operational Area and EMBA are included in the sections below.

1.3.3.1 Whale Shark

The whale shark (*Rhincodon typus*) is normally oceanic and cosmopolitan in their distribution. Whale sharks are widely distributed in tropical to warm temperate oceanic and coastal waters. Their known aggregation sites in Northern Australia are at Ningaloo Reef, outside the EMBA. The species filter feeds in areas of upwelling, with surface waters between 25-35°C, preferably with upwelling waters of 17°C or less (Norman, 1999). Offshore sightings are not uncommon; however, they are more commonly observed in coastal waters sitting high in the water column. Wilson *et al.* (2006) found that whale sharks can travel up to 1,500 km northeast after departing Ningaloo Reef.

The species may transit the Operational Area or EMBA in low numbers.

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1.3.3.2 Great White Shark

The great white shark (*Carcharodon carcharias*) is a close relative of the Mako shark and porbeagle shark. The species is long living reaching ages of 40 to 50 years (Bruce, 2006). The species has relatively slow development and low reproductive rates and with gestation periods, estimated at up to 18 months. These characteristics imply a low reproductive potential which has implications for the vulnerability of the species (DoE, 2024q). Great white sharks occur worldwide in coastal temperate and subtropical regions but can also occur in tropical regions.

The Operational Area or EMBA do not overlap any BIA for the great white shark, however individuals may pass through the area infrequently.

1.3.3.3 Northern River Shark

The Northern river shark (*Glyphis garricki*) is so far known to only occur in the Adelaide and Alligator River systems in the Northern Territory. This species is usually restricted to the relatively shallow, upper freshwater to brackish (0-26 ppt) reaches of the Adelaide and Alligator River systems of the Northern Territory. Despite considerable fishing and collecting activity in the Northern Territory, no specimens have ever been found in coastal marine habitats (DoE, 2024u).

The species is only likely to occur in certain nearshore areas outside of the EMBA and is unlikely to occur in the Operational Area given its preference for estuaries and river systems.

1.3.3.4 Shortfin Mako

The shortfin mako shark (*Isurus oxyrinchus*) is an active, offshore littoral and epipelagic species, found in tropical and warm-temperate seas from the surface down to at least 500 m, seldom occurring where water temperature is below 16°C (TSSC, 2014).

In Australian waters, the shortfin mako has been recorded in offshore waters all around Australia's coastline, except for Arafura Sea, Gulf of Carpentaria and Torres Strait. The shortfin mako is a pelagic species and primarily occurs in offshore, oceanic environments (TSSC, 2014).

Due to the broad distribution of this species, they are unlikely to be found in significant numbers in the Operational Area or EMBA.

1.3.3.5 Longfin Mako

The longfin mako shark (*Isurus paucus*) is an oceanic tropical species and is only rarely encountered globally (Reardon *et al.*, 2006). This species is believed to be cosmopolitan in tropical and warm temperate waters and common in the Western Atlantic and possibly the Central Pacific. However, its distribution in Australian waters is poorly known, with only sporadic sightings (Reardon *et al.*, 2006). This is in part due to confusion with the more common shortfin mako shark (Compagno, 2001).

Due to the wide distribution range of the species and the absence of any recognised important habitat in the EMBA, the longfin mako shark is not expected to occur in the Operational Area or EMBA in significant numbers.

	Company document identification 000036_DV_PR.HSE.0887.000	Owner document identification	Rev. index. 04	Appendix B
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1.3.3.6 Freshwater Sawfish

The freshwater sawfish (*Pristis pristis*) appears to be confined to freshwater drainages and the upper reaches of estuaries in northern Australian waters including the Ord, Daly and Victoria rivers (Woodside, 2004).

The PMST species profile indicates that the species occur in all large rivers of northern Australia from the Fitzroy River, Western Australia, to the western side of Cape York Peninsula, Queensland. Juveniles and sub-adult Freshwater Sawfish predominantly occur in rivers and estuaries, while large mature fish tend to occur more often in coastal and offshore waters up to 25m depth (Giles *et al.*, 2006)

It is unlikely that the species will be present in the Operational Area or EMBA in significant numbers. Any individuals present will likely be limited to larger, more mature fish.

1.3.3.7 Dwarf Sawfish

The distribution of the dwarf sawfish (*Pristis clavata*) is considered to extend north from Cairns around the Cape York Peninsula in Queensland, across northern Australian waters to the Pilbara coast in WA (DoE, 2024r). The dwarf sawfish usually inhabits shallow (2–3 m) coastal waters and estuarine habitats (DoE, 2024r).

It is unlikely that the species will be present in the Operational Area or EMBA, particularly given its preference to coastal waters and estuarine habitats.

1.3.3.8 Green Sawfish

Green sawfish (*Pristis zijsron*) have been recorded in the coastal waters off Broome in WA (DoE, 2024s), however there is little known about their distribution in the Northern Territory. The species prefer shallow water with muddy bottom habitats, usually within inshore marine waters, including estuaries and river mouths (DoE, 2024s). It is unlikely that the species will be present in the Operational Area or EMBA, particularly given its preference to estuaries and river mouths.

1.3.3.9 Narrow Sawfish

The narrow sawfish (*Anoxypristis cuspidata*) occurs from the northern Persian Gulf to Australia and north to Japan, inhabiting estuarine waters and nearshore waters up to depths of 100 m (D’Anastasi *et al.*, 2013). While population declines have been observed globally, the narrow sawfish is not currently listed as threatened. Northern Western Australia, the NT, the Gulf of Carpentaria and Queensland east coast waters comprise the most ecologically functional populations worldwide, however these populations are suspected to have declined significantly from historic levels (D’Anastasi *et al.*, 2013).

The species may occur within the nearshore estuarine environments outside of the EMBA and is unlikely to occur in the Operational Area given its preference for estuarine environments.

 eni australia	Company document identification 000036_DV_PR.HSE.0887.000	Owner document identification	Rev. index. 04	Appendix B
--	--	-------------------------------	-------------------	---------------

1.3.3.10 Giant Manta Ray and Reef Manta Ray

Manta rays consist of two individual species; the giant manta ray (*mobula birostris*) and the reef, or coastal manta ray (*mobula alfredi*). The giant manta ray is the largest ray species in the world and is found in tropical marine waters worldwide and occasionally in temperate regions (Marshall *et al.*, 2018a). The giant manta ray spends time on the surface, sometimes even jumping out of the water, and has also been observed diving to depths of over 1,000 metres (Marshall *et al.*, 2018). The species is a seasonal visitor to coastal and offshore sites and is commonly recorded on productive coastlines with regular upwellings. Giant manta rays also visit shallow reefs to be cleaned by 'cleaner fishes' and to feed.

Reef manta rays are commonly sighted inshore, but also frequent offshore coral reefs, rocky reefs and seamounts. Sightings suggest the species is more resident to tropical waters and may have smaller home ranges and shorter seasonal migrations than the giant manta ray (Marshall *et al.*, 2018b). Individuals in Australia have been recorded in offshore waters up to 190 km from the coast and making seasonal migrations of several hundred kilometres between aggregation sites (Marshall *et al.*, 2018b).

Giant manta rays aggregate at Ningaloo Reef, in particular between March and April, well outside of the EMBA. Reef manta rays usually occur closer to shore. Therefore, reef manta rays may occur in the nearshore areas outside of the EMBA and infrequently transit through the Operational Area.

1.3.3.11 Scalloped Hammerhead

The scalloped hammerhead (*Sphyrna lewini*) is located in coastal warm-temperate and tropical areas. In Australia, this species is recorded around the northern coastline to approximately 34°S on the west and east coasts. The scalloped hammerhead inhabits continental and insular shelves and the adjacent deep waters and can be found at the surface and in intertidal areas and depths ranging up to 275m. This species has also been recorded at depths of up to 1,042m (TSSC, 2024).

This species is likely to occur within the Operational Area and EMBA.

1.3.3.12 Speartooth Shark

The Speartooth Shark (*Glyphis glyphis*) has so far only been recorded in tidal rivers and estuaries within the Northern Territory and Queensland. To date, the Speartooth Shark has only been captured in tidal rivers and estuaries indicating that large tropical river systems appear to be the primary habitat for this shark. It is inferred that this species may be largely restricted to low salinity environments such as freshwater and brackish areas of rivers (DoE, 2024t).

The species may occur within the nearshore estuarine environments outside of the EMBA and is unlikely to occur in the Operational Area given its preference for estuarine environments.

 eni australia	Company document identification 000036_DV_PR.HSE.0887.000	Owner document identification	Rev. index. 04	Appendix B
--	--	-------------------------------	-------------------	---------------

1.3.4 Seabirds/Shorebirds

Threatened and migratory seabird and shorebird species within the Operational Area and EMBA are listed in Section 4.4 of the EP, along with identified BIAs. There are breeding BIAs identified within the EMBA for the lesser crested tern and lesser frigatebird.

Details on the species identified by the EPBC Act PMST for the Operational Area and EMBA are included in the sections below.

1.3.4.1 Common Sandpiper

The common sandpiper (*Actitis hypoleucos*) has a wide breeding distribution, ranging from eastern Russia to western Europe, and is found throughout Australia, south and south-east Asia and Africa (except near the equator) during non-breeding periods (Bamford *et al.*, 2008). Breeding occurs during May-June, with southward migration between mid-July and August until a return to breeding grounds around April (del Hoyo *et al.*, 1996). During non-breeding periods, the species inhabits inland wetland and coastal areas, such as estuaries, streams, pools, tidal creeks and freshwater seeps on coastal shores, but typically avoids large coastal mudflats (del Hoyo *et al.*, 1996). The common sandpiper is unlikely to occur within the operational area except during migratory movements but may occur during non-breeding periods at wetland and coastal areas outside of the EMBA. Individuals may transit through the Operational Area.

1.3.4.2 Curlew Sandpiper

The curlew sandpiper (*Calidris ferruginea*) is a migratory shorebird that can be found widespread along the coastlines of Western Australia. They occur in large numbers around Roebuck Bay and 80 Mile Beach with is south-west of the EMBA. In the Northern Territory, they are typically found around the Darwin area. This species is mainly found in intertidal mudflats in sheltered coastal areas such as estuaries and lagoons where it forages among vegetation. The breeding range of the curlew sandpiper occurs in the Arctic region outside of Australia and it visits Australia during the non-breeding period (DoE, 2024v).

Eastern Curlews may transit through the Operational Area and may be found within coastal areas outside of the EMBA.

1.3.4.3 Red-tailed Tropicbird

The red-tailed tropic bird (*Phaethon rubricauda*) population is poorly known in Australia with the largest breeding areas found on Christmas Island, Cocos (Keeling) Island and islands in Ashmore Reef Marine Park. Movements away from breeding sites are not well known but adults and juveniles are known to disperse widely. This species breeds on tropical and subtropical zones on volcanic and other islands, atolls, and cays away from mainland areas (CoA, 2020). Red-tailed tropicbirds may transit through the Operational Area and are likely to occur within coastal areas outside of the EMBA.

1.3.4.4 Sharp-tailed sandpiper

The sharp-tailed sandpiper (*Calidris acuminata*) is a visitor to Australia and spends the non-breeding season in both inland and coastal freshwater and marine habitats. In the Northern Territory they occur in north coastal areas generally east to Groote Eylandt

	Company document identification 000036_DV_PR.HSE.0887.000	Owner document identification	Rev. index. 04	Appendix B
---	--	-------------------------------	-------------------	---------------

and Gove Peninsula, but also around McArthur River and east of Borroloola and inland areas. This species prefers muddy edges of shallow freshwater or brackish wetlands including lagoons, swamps and lakes ear the coast. They forage at the edge of wetlands and intertidal mudflats (DoE, 2024w). Given this species preference for freshwater and brackish areas, it likely this species will only transit through the EMBA.

1.3.4.5 Lesser Crested Tern

The lesser crested tern (*Thalasseus bengalensis*) is a marine listed species that is known to occur within the EMBA (See Section 4.4 of the EP). The species has a wide global range and can be found on islands and coastlines of tropical and subtropical areas, including in Australia. Foraging occurs in the surf and over the open ocean where they prey predominantly on small pelagic fish (CoA, 2020). The nest is a shallow scrape on sand beaches, rock, coral flats, offshore islands, etc. A BIA for breeding for the lesser crested tern is located at Seagull Island and along the Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef to the north-east and north-west, respectively, of the Petrel fields, within the EMBA.

Given their distribution and breeding preference, any occurrence within the Operational Area or EMBA is likely to be of a transient nature due to the absence of shoreline contact and offshore islands. However, it is possible that the species may use the area for mating or foraging.

1.3.4.6 Eastern Curlew

The Eastern Curlew (*Numenius madagascariensis*) is Australia’s largest shorebird. It is a long-haul flyer and easily distinguished by its long, downwards curving bill. The Eastern Curlew breeds in the Northern Hemisphere and arrives in Australia in August to forage for crabs and molluscs in intertidal mudflats (DCCEEW, 2015). The species occurs within Western Australia at Barrow Island, the Damper Archipelago, through the Kimberley and along the NT coastline (DCCEEW, 2015). Eastern Curlews may transit through the Operational Area and are likely to occur within coastal areas outside of the EMBA.

1.3.4.7 Fork-tailed Swift

The fork-tailed swift (*Apus pacificus*) is native to over 30 countries and occurs in all Australian states and territories outside of breeding periods. The species is widely distributed in Western Australia from coastal and subcoastal areas between Augusta and Carnarvon (including islands), to the Pilbara and Kimberly regions, the north and north-west Gascoyne region, along the south coast and within the Timor Sea (Higgins, 1999). In the NT there are widespread but scattered records of the species in the north (Higgins, 1999).

	Company document identification 000036_DV_PR.HSE.0887.000	Owner document identification	Rev. index. 04	Appendix B
---	--	-------------------------------	-------------------	---------------

The fork-tailed swift leaves breeding grounds in Siberia in August-September for warmer climactic conditions, with some populations arriving in Western Australia around October-November. The species is typically present in the Pilbara region from September to late April when they depart northwards (Higgins, 1999). Although almost exclusively aerial, including roosting, the species mostly occurs over inland plains, cliffs, beaches and dry/open habitats, foraging aerially for insects (Higgins, 1999). There is currently no BIA for the fork-tailed swift. However, they may transit through the Operational Area during migratory periods and are likely to occur within coastal areas outside of the EMBA.

1.3.4.8 Lesser Frigatebird

The lesser frigatebird (*Fregata ariel*) is a migratory marine species that is likely to occur within the EMBA (See Section 4.4 of the EP). They are a pelagic species, often found far offshore, but have also been observed over shelf waters, inshore areas, and inland over continental coastlines (DSEWPaC, 2012e). The species forages for fish and cephalopods, typically captured via surface-seizing. The lesser frigatebird forages in Australia on small, remote tropical and sub-tropical islands, in mangroves or bushes, and even on bare ground (CoA, 2020).

A BIA for breeding for the lesser frigatebird has been identified along the Kimberley and Pilbara coasts and associated islands including Ashmore Reef, which is located to the south-west of the Petrel fields within the EMBA.

1.3.4.9 Red Knot

Distribution of the red knot (*Calidris canutus*) in Western Australia is widespread, including the coast from Ningaloo and Barrow Island to the south-west Kimberly Division. Migration occurs to high northern latitudes during the northern hemisphere summer to breeding grounds where food is readily abundant, then southward to escape severe winter conditions under which energy demands are high and prey is scarce. Both Australia and New Zealand host significant populations of red knots during the non-breeding period (Bamford *et al.*, 2008). Important sites for the red knot in Western Australia include Eighty Mile Bay (population of 80,700) and Roebuck Bay (11,200) (Bamford *et al.*, 2008) located over at the furthest south-western extent of the EMBA. The red knot frequents intertidal sands, mudflats and coastal wetlands. As these habitats are not present within the Operational Area, occurrence of the species within the area is unlikely outside of brief migratory transit. However, the red knot may transit through the Operational Area and are likely to occur within coastal areas outside of the EMBA during the non-breeding period.

	Company document identification 000036_DV_PR.HSE.0887.000	Owner document identification	Rev. index. 04	Appendix B
---	--	-------------------------------	-------------------	---------------

1.3.4.10 Streaked Shearwater

The streaked shearwater (*Calonectris leucomelas*) is distributed throughout the western Pacific, breeding on islands off the coast of China, North Korea, South Korea and at the coast or offshore islands of Japan and Russia (del Hoyo *et al.*, 1992). Breeding occurs during March in colonies, typically within burrows on forested hills. During the northern hemisphere winter, the species migrates south to the coasts of Australia, New Guinea, the Philippines, Vietnam, Sri Lanka and southern India (del Hoyo *et al.*, 1992). Foraging occurs over pelagic and inshore waters, from which the species seizes food from just below the surface (del Hoyo *et al.*, 1992). There is currently no BIA for the streaked shearwater. However, it is likely to transit through the Operational Area and EMBA during non-breeding periods.

1.4 Protected and Significant Areas

There are a number of key sensitive areas that overlap the EMBA. These are summarised in Table 4-8 of the EP and described further below.

1.4.1 Australian Marine Parks

The EMBA overlaps the Oceanic Shoals Australian Marine Park (AMP) as described in Section 4.5.1 of the EP. At the closest points, the EMBA lies 17km north west of the Joseph Bonaparte Gulf AMP and 4km north east of the Kimberley AMP.

1.4.1.1 Oceanic Shoals Marine Park

Characteristics of the Oceanic Shoals AMP are presented in Table 1-3. The Oceanic Shoals AMP is approximately 45km north-west of the Operational Area; and is the only AMP within the EMBA.

Table 1-3: Summary of Characteristics of the Oceanic Shoals AMP (Parks Australia, 2024c)

Name	Oceanic Shoals AMP
Area	71,743km ²
Depth range	Approximately 15-500m
Types of zoning	National Park Zone (IUCN Category II) 406km ² Habitat Protection Zone (IUCN Category IV) 6929km ² Multiple Use Zone (IUCN Category VI) 39,964km ² Special Purpose Zone (Trawl) (IUCN Category VI) 24,444km ²

Values are to inform the Director's decisions when authorising activities in Marine Parks. Activities will be assessed in relation to their impacts on and risk to values, to ensure activities are undertaken in a manner that minimises impacts as small as reasonably practicable. The following values are applicable to the Oceanic Shoals AMP:

- Natural Values
- Cultural Values
- Heritage Values
- Socio-economic values.

	Company document identification 000036_DV_PR.HSE.0887.000	Owner document identification	Rev. index. 04	Appendix B
---	--	-------------------------------	-------------------	---------------

Table 1-4 presents details of the value of the AMP.

Table 1-4: Summary of Value of Oceanic Shoals AMP (Parks Australia, 2024)

Value	Summary
Natural Values	<p>The Marine Park includes examples of ecosystems representative of the Northwest Shelf Transition— a dynamic environment influenced by strong tidal currents, upwellings of nutrient-rich waters, and a range of prominent seafloor features. The pinnacles, carbonate banks and shoals are sites of enhanced biological productivity.</p> <p>Key ecological features of the Marine Park are:</p> <ul style="list-style-type: none"> - carbonate bank and terrace systems of the Van Diemen Rise— an area characterised by terraces, banks, channels and valleys supporting sponges, soft coral, polychaetes, ascidians, turtles, snakes and sharks; - carbonate bank and terrace system of the Sahul Shelf—an area characterised by terraces, banks, channels and valleys, supporting sponges, soft corals, sessile filter feeders, polychaetes and ascidians; - pinnacles of the Bonaparte Basin—an area that contains the largest concentration of pinnacles along the Australian margin, where local upwellings of nutrient-rich water attract aggregations of fish, seabirds and turtles; and - shelf break and slope of the Arafura Shelf—an area characterised by continental slope, patch reefs and hard substrate pinnacles that support over 280 demersal fish species. <p>The Marine Park supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. Biologically important areas within the Marine Park include foraging and interesting habitat for marine turtles.</p>
Cultural Values	<p>Sea country is valued for Indigenous cultural identity, health and wellbeing. Across Australia, Indigenous people have been sustainably using and managing their sea country for tens of thousands of years. At the commencement of this plan, there is limited information about the cultural significance of this Marine Park. However, it is noted that the Balangarra, Miriuwung Gajerrong and Wunambal Gambera people have responsibilities for sea country in the region, which may extend to this Marine Park.</p> <p>The Northern Land Council and the Kimberley Land Council are the Native Title Representative Bodies for the Northern Territory’s northern region, and the Kimberley region. The Tiwi Land Council collectively represents traditional owners of the Tiwi Islands. The Oceanic Shoals AMP includes important sea country for the Tiwi people (TLC 2021).</p>
Heritage Values	<p>No International, Commonwealth or national heritage listings apply to the AMP.</p>
Socio-economic values.	<p>Commercial fishing and mining are important activities in the AMP.</p>

 eni australia	Company document identification 000036_DV_PR.HSE.0887.000	Owner document identification	Rev. index. 04	Appendix B
--	--	-------------------------------	-------------------	---------------

1.4.2 State Marine Protected Areas

1.4.2.1 North Kimberley Marine Park

The WA North Kimberley Marine Park is within close proximity to the EMBA and has significance to First Nations heritage. Values of the park are described in Table 1-5.

Table 1-5: Summary of Value of the North Kimberley Marine Park (DPAW, 2016).

Value	Summary
Natural Values	<p>The marine park spans over 1,845,000 hectares and is located in Western Australia’s Kimberley region extending north-east from York Sound, around Cape Londonderry and the Joseph Bonaparte Gulf to the Western Australian/Northern Territory from the mainland highwater mark to the limit of coastal State waters.</p> <p>The North Kimberley Marine Park has complex geomorphology which supports a complex array of marine habitats which are influenced by the low wave energy of the area and the macro-tidal regime which ranges between 5-10 m. The coastline comprises of many islands, bays and estuaries with mangroves, sandy beaches, coral reefs, rocky reefs, seagrass meadows and sponge gardens. The coral reefs within the area are highly productive and abundant which supports a variety of marine species.</p> <p>Turtle nesting and breeding sites for shorebirds and migratory birds occur on many of the islands and coastlines. The deeper waters and open seas are habitats for marine mammals and pelagic fish such as mackerel. Intertidal and coastal areas with mangroves and seagrass provide habitat for marine mammals such as dugongs and are a nursery habitats for many targeted juvenile fish species such as spangled emperor and bluebone.</p> <p>Rivers and estuaries are an important feature of the Kimberley area with rivers characterised by wet season flooding which brings nutrient rich waters.</p>
Cultural Values	<p>For Aboriginal people of this area, undertaking customary activities on traditional lands is essential to maintaining culture and heritage of Country and caring for culturally significant species. Customary activities permitted within the park include fishing and hunting for food and preparing traditional medicines. Cultural activities within the park enable First Nations relationships with land, waters and people of Country and allows the sharing of knowledge, engagement in cultural practices, and looking after places of significance.</p> <p>The marine park contains many culturally and spiritually significant places. Many occur on land, but many are within Sea Country. Registered sites within the park include artefacts, ceremonial and mythological paintings, fish traps, burial grounds, quarrying, man-made structures and middens.</p> <p>The park is jointly managed by Parks and Wildlife and the Wunambal, Gaambera, Balangarra, Ngarinyin and Miriuwung Gajerrong Traditional Owners for each respective Sea Country management areas.</p>

	Company document identification 000036_DV_PR.HSE.0887.000	Owner document identification	Rev. index. 04	Appendix B
---	--	-------------------------------	-------------------	---------------

Heritage Values	The marine park is included in the Australian National Heritage list for national significant natural, Aboriginal and historical values.
Socio-economic values.	Recreational boating and fishing are permitted within the marine park. Commercial fishing and aquaculture are only permitted within special purpose and general use zones.

1.4.3 Key Ecological Features

No KEFs overlap the Operational Area. The EMBA overlaps three KEFs, being:

- Pinnacles of the Bonaparte Basin
- Carbonate bank and terrace system of the Sahul Shelf
- Carbonate bank and terrace system of the Van Diemen Rise

The closest KEF to the Operational Area is the Pinnacles of the Bonaparte Basin, approximately 27km north-west from the Operational Area and within the EMBA.

1.4.3.1 Pinnacles of the Bonaparte Basin

The Pinnacles of the Bonaparte Basin are defined as a KEF due to the unique seafloor that features ecological properties of regional significance.

The Pinnacles of the Bonaparte Basin provide areas of hard substrate in an otherwise relatively featureless environment, the pinnacles are likely to support a high number of species, although a better understanding of the species richness and diversity associated with these structures is required. Covering over 520km² within the Bonaparte Basin, this feature contains the largest concentration of pinnacles along the Australian margin. The Pinnacles of the Bonaparte Basin are thought to be the eroded remnants of underlying strata; it is likely that the vertical walls generate local upwelling of nutrient-rich water, leading to phytoplankton productivity that attracts aggregations of planktivorous and predatory fish, seabirds, and foraging turtles (DSEWPAC, 2012c).

1.4.3.2 Carbonate bank and terrace system of the Sahul Shelf

The Carbonate bank and terrace system of the Sahul Shelf KEF is situated approximately 81 km west of the Operational Area. The Sahul banks are the single most extensive banks and shoals in the Australian EEZ with unique seafloor feature with ecological properties of regional significance. The area is significant because of its role in enhancing biodiversity and local productivity in the region. The banks provide hard substrate in an otherwise soft substrate environment which provides a habitat for sessile species. The banks rise steeply from depths of approximately 80 m and emerge to within 30 m of the surface allowing for light dependant organisms to thrive. Communities comprise of hard and soft corals, sponges, whips, fans and bryozoans.

The banks form part of a larger complex of banks and terraces that occurs on the Van Diemen Rise in the adjacent North Marine Region. The area supports a diverse range of species including 11 shark species, black marlin, barracuda, sea turtles, sea snakes and orca. Humpback whales and green and freshwater sawfish are known to occur within the area (DSEWPAC, 2012a).

	Company document identification 000036_DV_PR.HSE.0887.000	Owner document identification	Rev. index. 04	Appendix B
---	--	-------------------------------	-------------------	---------------

1.4.3.3 Carbonate bank and terrace system of the Van Diemen Rise

The Carbonate banks and terrace system of the Sahul Shelf KEF is located approximately 104 km north of the Operational Area in the western Joseph Bonaparte Gulf and to the north of Cape Bougainville and Cape Londonderry. The carbonate banks and terraces are part of a larger complex of banks and terraces that are associated with the Sahul banks to the west of the KEF.

The bank and terrace system of the Van Diemen Rise covers approximately 31,278km² and forms part of the larger system associated with the Sahul Banks to the north and Londonderry Rise to the east. The feature is characterised by terrace, banks, channels and valleys (DSEWPAC, 2012a). The banks, ridges and terraces of the Van Diemen Rise are raised geomorphic features with relatively high proportions of hard substrate that support sponge and octocoral gardens. These, in turn, provide habitat to other epifauna, by providing structure in an otherwise flat environment. Plains and valleys are characterised by scattered epifauna and infauna that include polychaetes and ascidians. These epibenthic communities support higher order species such as olive ridley turtles, sea snakes and sharks (DSEWPAC, 2012b).

 eni australia	Company document identification 000036_DV_PR.HSE.0887.000	Owner document identification	Rev. index. 04	Appendix B
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ATTACHMENT B1: OPERATIONAL AREA PMST RESULTS



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 06-Jun-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



Petrel-3 and Petrel-4 Operational Area

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	21
Listed Migratory Species:	34

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	57
Whales and Other Cetaceans:	13
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	12
Key Ecological Features (Marine):	None
Biologically Important Areas:	4
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area

[\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name

Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species

[\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name

Threatened Category

Presence Text

BIRD

[Calidris acuminata](#)

Sharp-tailed Sandpiper [874]

Vulnerable

Species or species habitat may occur within area

[Calidris canutus](#)

Red Knot, Knot [855]

Vulnerable

Species or species habitat may occur within area

[Calidris ferruginea](#)

Curlew Sandpiper [856]

Critically Endangered

Species or species habitat may occur within area

[Numenius madagascariensis](#)

Eastern Curlew, Far Eastern Curlew [847]

Critically Endangered

Species or species habitat may occur within area

[Phaethon rubricauda westralis](#)

Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]

Endangered

Species or species habitat may occur within area

FISH

[Thunnus maccoyii](#)

Southern Bluefin Tuna [69402]

Conservation Dependent

Species or species habitat may occur within area

MAMMAL

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area

REPTILE

Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat may occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

SHARK

Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Glyphis garricki Northern River Shark, New Guinea River Shark [82454]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species [[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area

Migratory Marine Species

Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat may occur within area
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Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat may occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat may occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area

Migratory Wetlands Species

Scientific Name	Threatened Category	Presence Text
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Fish		
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus spinostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribbioned Pipehorse, Ribbioned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area

Reptile

Scientific Name	Threatened Category	Presence Text
Aipysurus duboisii Dubois' Sea Snake, Dubois' Seasnake, Reef Shallows Sea Snake [1116]		Species or species habitat may occur within area
Aipysurus laevis Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area
Aipysurus mosaicus as Aipysurus eydouxii Mosaic Sea Snake [87261]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat may occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat may occur within area
Hydrophis atriceps Black-headed Sea Snake [1101]		Species or species habitat may occur within area
Hydrophis coggeri Cogger's Sea Snake [25925]		Species or species habitat may occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis hardwickii as Lapemis hardwickii Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis inornatus Plain Sea Snake [1107]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis macdowelli as Hydrophis mcdowelli MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		Species or species habitat may occur within area
Hydrophis ornatus Spotted Sea Snake, Ornate Reef Sea Snake [1111]		Species or species habitat may occur within area
Hydrophis peronii as Acalyptophis peronii Horned Sea Snake [93509]		Species or species habitat may occur within area
Hydrophis platura as Pelamis platurus Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area
Hydrophis stokesii as Astrotia stokesii Stokes' Sea Snake [93510]		Species or species habitat may occur within area
Hydrophis zweiffei as Enhydrina schistosa Australian Beaked Sea Snake [93514]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

Whales and Other Cetaceans

[[Resource Information](#)]

Current Scientific Name	Status	Type of Presence
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Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Bonaparte Liquefied Natural Gas Project	2011/6141	Controlled Action	Post-Approval
Not controlled action			
2D Seismic Survey in Permit Areas WA-318-P & WA-319-P, near Cape Londonderry	2004/1687	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D Marine Seismic Survey	2009/4728	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic survey	2009/5076	Not Controlled Action (Particular Manner)	Post-Approval
Bonaparte Seismic and Bathymetric Survey	2012/6295	Not Controlled Action (Particular Manner)	Post-Approval
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Marine Environmental Survey 2012	2012/6310	Not Controlled Action (Particular Manner)	Post-Approval
NT/P80 2010 2D Marine Seismic Survey	2010/5487	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Petrel MC2D Marine Seismic Survey	2010/5368	Not Controlled Action (Particular Manner)	Post-Approval
Santos Petrel-7 Offshore Appraisal Drilling Programme (Bonaparte Basin)	2011/5934	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval

Referral decision			
2D Marine Seismic Survey	2008/4623	Referral Decision	Completed

Biologically Important Areas			[Resource Information]
Scientific Name	Behaviour	Presence	
Marine Turtles			
Caretta caretta			
Loggerhead Turtle [1763]	Foraging	Known to occur	
Chelonia mydas			
Green Turtle [1765]	Foraging	Known to occur	
Lepidochelys olivacea			
Olive Ridley Turtle [1767]	Foraging	Known to occur	
Natator depressus			
Flatback Turtle [59257]	Foraging	Known to occur	

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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Department of Climate Change, Energy, the Environment and Water

GPO Box 3090

Canberra ACT 2601 Australia

+61 2 6274 1111

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ATTACHMENT B2: ZPI PMST RESULTS



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 06-Jun-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



Petrel-3 and Petrel-4 Zone of Impact

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	21
Listed Migratory Species:	35

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	64
Whales and Other Cetaceans:	13
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	1
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	18
Key Ecological Features (Marine):	1
Biologically Important Areas:	4
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area

[\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name

Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species

[\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name

Threatened Category

Presence Text

BIRD

[Calidris acuminata](#)

Sharp-tailed Sandpiper [874]

Vulnerable

Species or species habitat may occur within area

[Calidris canutus](#)

Red Knot, Knot [855]

Vulnerable

Species or species habitat may occur within area

[Calidris ferruginea](#)

Curlew Sandpiper [856]

Critically Endangered

Species or species habitat may occur within area

[Numenius madagascariensis](#)

Eastern Curlew, Far Eastern Curlew [847]

Critically Endangered

Species or species habitat may occur within area

[Phaethon rubricauda westralis](#)

Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]

Endangered

Species or species habitat likely to occur within area

FISH

[Thunnus maccoyii](#)

Southern Bluefin Tuna [69402]

Conservation Dependent

Species or species habitat may occur within area

MAMMAL

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Glyphis garricki Northern River Shark, New Guinea River Shark [82454]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species [[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area

Migratory Marine Species

Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat may occur within area
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Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Fish		
Bhanotia fasciolata Corrugated Pipefish, Barbed Pipefish [66188]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
Corythoichthys intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus dunckeri Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus spirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribbioned Pipehorse, Ribbioned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Reptile		
Aipysurus duboisii Dubois' Sea Snake, Dubois' Seasnake, Reef Shallows Sea Snake [1116]		Species or species habitat may occur within area
Aipysurus laevis Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area
Aipysurus mosaicus as Aipysurus eydouxii Mosaic Sea Snake [87261]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Hydrophis atriceps Black-headed Sea Snake [1101]		Species or species habitat may occur within area
Hydrophis coggeri Cogger's Sea Snake [25925]		Species or species habitat may occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis hardwickii as Lapemis hardwickii Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area
Hydrophis inornatus Plain Sea Snake [1107]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis macdowelli as Hydrophis mcdowelli MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		Species or species habitat may occur within area
Hydrophis ornatus Spotted Sea Snake, Ornate Reef Sea Snake [1111]		Species or species habitat may occur within area
Hydrophis peronii as Acalyptophis peronii Horned Sea Snake [93509]		Species or species habitat may occur within area
Hydrophis platura as Pelamis platurus Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area
Hydrophis stokesii as Astrotia stokesii Stokes' Sea Snake [93510]		Species or species habitat may occur within area
Hydrophis zweiffei as Enhydrina schistosa Australian Beaked Sea Snake [93514]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

Whales and Other Cetaceans [Resource Information]

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Park Name

Zone & IUCN Categories

Oceanic Shoals

Multiple Use Zone (IUCN VI)

Extra Information

EPBC Act Referrals

[Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
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Controlled action

Bonaparte Liquefied Natural Gas Project	2011/6141	Controlled Action	Post-Approval
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Ichthys Gas Field, Offshore and onshore processing facilities and subsea pipeline	2008/4208	Controlled Action	Post-Approval
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Not controlled action

2D Seismic Survey in Permit Areas WA-318-P & WA-319-P, near Cape Londonderry	2004/1687	Not Controlled Action	Completed
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Not controlled action (particular manner)

2D and 3D Seismic Survey	2011/6197	Not Controlled Action (Particular Manner)	Post-Approval
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2D Marine Seismic Survey	2009/4728	Not Controlled Action (Particular Manner)	Post-Approval
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2D marine seismic survey within permit area WA-318-P	2007/3879	Not Controlled Action (Particular Manner)	Post-Approval
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2D Seismic survey	2009/5076	Not Controlled Action (Particular Manner)	Post-Approval
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Bonaparte 2D & 3D marine seismic survey	2011/5962	Not Controlled Action (Particular Manner)	Post-Approval
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Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Bonaparte Seismic and Bathymetric Survey	2012/6295	Not Controlled Action (Particular Manner)	Post-Approval
Floyd 3D and Chisel 3D Seismic Surveys	2011/6220	Not Controlled Action (Particular Manner)	Post-Approval
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Marine Environmental Survey 2012	2012/6310	Not Controlled Action (Particular Manner)	Post-Approval
NT/P80 2010 2D Marine Seismic Survey	2010/5487	Not Controlled Action (Particular Manner)	Post-Approval
Petrel MC2D Marine Seismic Survey	2010/5368	Not Controlled Action (Particular Manner)	Post-Approval
Santos Petrel-7 Offshore Appraisal Drilling Programme (Bonaparte Basin)	2011/5934	Not Controlled Action (Particular Manner)	Post-Approval
Sonar and Acoustic Trials	2001/345	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval

Referral decision

2D Marine Seismic Survey	2008/4623	Referral Decision	Completed
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Key Ecological Features

[[Resource Information](#)]

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
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Name	Region
Pinnacles of the Bonaparte Basin	North-west

Biologically Important Areas	[Resource Information]
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Scientific Name	Behaviour	Presence
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Marine Turtles

Caretta caretta

Loggerhead Turtle [1763]	Foraging	Known to occur
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Chelonia mydas

Green Turtle [1765]	Foraging	Known to occur
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Lepidochelys olivacea

Olive Ridley Turtle [1767]	Foraging	Known to occur
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Natator depressus

Flatback Turtle [59257]	Foraging	Known to occur
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Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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Department of Climate Change, Energy, the Environment and Water

GPO Box 3090

Canberra ACT 2601 Australia

+61 2 6274 1111

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ATTACHMENT B3: EMBA PMST RESULTS



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 06-Jun-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



Petrel-3 and Petrel-4 EMBA

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	24
Listed Migratory Species:	39

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	74
Whales and Other Cetaceans:	15
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	6
Habitat Critical to the Survival of Marine Turtles:	1

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	33
Key Ecological Features (Marine):	4
Biologically Important Areas:	8
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area

[\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name

Commonwealth Marine Areas (EPBC Act)

Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species

[\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name

Threatened Category

Presence Text

BIRD

[Calidris acuminata](#)

Sharp-tailed Sandpiper [874]

Vulnerable

Species or species habitat may occur within area

[Calidris canutus](#)

Red Knot, Knot [855]

Vulnerable

Species or species habitat may occur within area

[Calidris ferruginea](#)

Curlew Sandpiper [856]

Critically Endangered

Species or species habitat may occur within area

[Numenius madagascariensis](#)

Eastern Curlew, Far Eastern Curlew [847]

Critically Endangered

Species or species habitat may occur within area

[Phaethon rubricauda westralis](#)

Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]

Endangered

Species or species habitat likely to occur within area

FISH

[Thunnus maccoyii](#)

Southern Bluefin Tuna [69402]

Conservation Dependent

Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
REPTILE		
Aipysurus foliosquama Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

SHARK

Scientific Name	Threatened Category	Presence Text
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Glyphis garricki Northern River Shark, New Guinea River Shark [82454]	Endangered	Species or species habitat may occur within area
Glyphis glyphis Speartooth Shark [82453]	Critically Endangered	Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat known to occur within area

Listed Migratory Species [[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Dugong dugon Dugong [28]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour known to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area
Thalasseus bengalensis as Sterna bengalensis Lesser Crested Tern [66546]		Breeding known to occur within area
Fish		
Bhanotia fasciolata Corrugated Pipefish, Barbed Pipefish [66188]		Species or species habitat may occur within area
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
Corythoichthys haematopterus Reef-top Pipefish [66201]		Species or species habitat may occur within area
Corythoichthys intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus dunckeri Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus spirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribbioned Pipehorse, Ribbioned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys parvicarinatus Short-keel Pipefish, Short-keeled Pipefish [66230]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammal		
Dugong dugon Dugong [28]		Species or species habitat may occur within area
Reptile		
Aipysurus duboisii Dubois' Sea Snake, Dubois' Seasnake, Reef Shallows Sea Snake [1116]		Species or species habitat may occur within area
Aipysurus foliosquama Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Aipysurus laevis Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area
Aipysurus mosaicus as Aipysurus eydouxii Mosaic Sea Snake [87261]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Hydrelaps darwiniensis Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area
Hydrophis atriceps Black-headed Sea Snake [1101]		Species or species habitat may occur within area
Hydrophis coggeri Cogger's Sea Snake [25925]		Species or species habitat may occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis hardwickii as Lapemis hardwickii Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area
Hydrophis inornatus Plain Sea Snake [1107]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis macdowelli as Hydrophis mcdowelli MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		Species or species habitat may occur within area
Hydrophis ornatus Spotted Sea Snake, Ornate Reef Sea Snake [1111]		Species or species habitat may occur within area
Hydrophis pacificus Pacific Sea Snake, Large-headed Sea Snake [1112]		Species or species habitat may occur within area
Hydrophis peronii as Acalyptophis peronii Horned Sea Snake [93509]		Species or species habitat may occur within area
Hydrophis platura as Pelamis platurus Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area
Hydrophis stokesii as Astrotia stokesii Stokes' Sea Snake [93510]		Species or species habitat may occur within area
Hydrophis zweiffei as Enhydrina schistosa Australian Beaked Sea Snake [93514]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Parahydrophis mertoni Arafura Smooth Sea Snake, Northern Mangrove Sea Snake [1090]		Species or species habitat may occur within area

Whales and Other Cetaceans [Resource Information]

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Sousa sahalensis Australian Humpback Dolphin [87942]		Species or species habitat may occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Australian Marine Parks		[Resource Information]
Park Name	Zone & IUCN Categories	
Oceanic Shoals	Habitat Protection Zone (IUCN IV)	
Joseph Bonaparte Gulf	Multiple Use Zone (IUCN VI)	
Kimberley	Multiple Use Zone (IUCN VI)	
Oceanic Shoals	Multiple Use Zone (IUCN VI)	
Joseph Bonaparte Gulf	Special Purpose Zone (IUCN VI)	

Park Name	Zone & IUCN Categories
Oceanic Shoals	Special Purpose Zone (Trawl) (IUCN VI)

Habitat Critical to the Survival of Marine Turtles [\[Resource Information \]](#)

Scientific Name	Behaviour	Presence
Aug - Sep		
Natator depressus		
Flatback Turtle [59257]	Nesting	Known to occur

Extra Information

EPBC Act Referrals [\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West	2024/09826		Referral Decision

Controlled action

Bonaparte Liquified Natural Gas Project	2011/6141	Controlled Action	Post-Approval
Development of Blacktip Gas Field	2003/1180	Controlled Action	Post-Approval
Ichthys Gas Field, Offshore and onshore processing facilities and subsea pipeline	2008/4208	Controlled Action	Post-Approval

Not controlled action

2D seismic survey, exploration permit NT/P67	2004/1587	Not Controlled Action	Completed
2D Seismic Survey in Permit Areas WA-318-P & WA-319-P, near Cape Londonderry	2004/1687	Not Controlled Action	Completed
Drilling of Marina-1 Exploration Well	2007/3586	Not Controlled Action	Completed
Marine Survey for the Australia-ASEAN Power Link AAPL	2020/8714	Not Controlled Action	Completed
Nexus Drilling Program NT-P66	2007/3745	Not Controlled Action	Completed

Not controlled action (particular manner)

2D and 3D Seismic Survey	2011/6197	Not Controlled Action (Particular Manner)	Post-Approval
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Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
2D and 3D Seismic Survey WA-405-P	2008/4133	Not Controlled Action (Particular Manner)	Post-Approval
2D and 3D Seismic Survey WA-405-P	2009/5104	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey	2009/4728	Not Controlled Action (Particular Manner)	Post-Approval
2D marine seismic survey of Braveheart, Kurrajong, Sunshine and Crocodile	2006/2917	Not Controlled Action (Particular Manner)	Post-Approval
2D marine seismic survey within permit area WA-318-P	2007/3879	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic survey	2009/5076	Not Controlled Action (Particular Manner)	Post-Approval
Bonaparte 2D & 3D marine seismic survey	2011/5962	Not Controlled Action (Particular Manner)	Post-Approval
Bonaparte Seismic and Bathymetric Survey	2012/6295	Not Controlled Action (Particular Manner)	Post-Approval
Fishburn 2D Marine Seismic Survey	2012/6659	Not Controlled Action (Particular Manner)	Post-Approval
Floyd 3D and Chisel 3D Seismic Surveys	2011/6220	Not Controlled Action (Particular Manner)	Post-Approval
Gold 2D Marine Seismic Survey Permit Areas WA375P and WA376P	2009/4698	Not Controlled Action (Particular Manner)	Post-Approval
Joseph Bonaparte Gulf Seabed mapping survey	2010/5517	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Marine Environmental Survey 2012	2012/6310	Not Controlled Action (Particular Manner)	Post-Approval
NT/P77 3D Marine Seismic Survey	2009/4683	Not Controlled Action (Particular Manner)	Post-Approval
NT/P80 2010 2D Marine Seismic Survey	2010/5487	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Fibre Optic Cable Network Construction & Operation, Port Hedland WA to Darwin NT	2014/7223	Not Controlled Action (Particular Manner)	Post-Approval
Petrel MC2D Marine Seismic Survey	2010/5368	Not Controlled Action (Particular Manner)	Post-Approval
Removal of Potential Unexploded Ordnance within NAXA	2012/6503	Not Controlled Action (Particular Manner)	Post-Approval
Santos Petrel-7 Offshore Appraisal Drilling Programme (Bonaparte Basin)	2011/5934	Not Controlled Action (Particular Manner)	Post-Approval
Sonar and Acoustic Trials	2001/345	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
2D Marine Seismic Survey	2008/4623	Referral Decision	Completed

Key Ecological Features

[[Resource Information](#)]

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Carbonate bank and terrace system of the Sahul Shelf	North-west
Carbonate bank and terrace system of the Van Diemen Rise	North
Pinnacles of the Bonaparte Basin	North
Pinnacles of the Bonaparte Basin	North-west

Biologically Important Areas

[[Resource Information](#)]

Scientific Name	Behaviour	Presence
Marine Turtles		
Caretta caretta Loggerhead Turtle [1763]	Foraging	Known to occur
Chelonia mydas Green Turtle [1765]	Foraging	Known to occur
Lepidochelys olivacea Olive Ridley Turtle [1767]	Foraging	Known to occur
Natator depressus Flatback Turtle [59257]	Foraging	Known to occur
Natator depressus Flatback Turtle [59257]	Internesting	Likely to occur
Natator depressus Flatback Turtle [59257]	Internesting buffer	Known to occur
Seabirds		
Fregata ariel Lesser Frigatebird [1012]	Breeding	Known to occur
Thalasseus bengalensis Lesser Crested Tern [66546]	Breeding	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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Department of Climate Change, Energy, the Environment and Water

GPO Box 3090

Canberra ACT 2601 Australia

+61 2 6274 1111

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Appendix C: Relevant Person Consultation

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 420 / 426
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Appendix C1: Bridging Document

	eni australia		Rev. index.		Sheet of sheets 1 / 35
			Validity Status	Rev. No.	
			PR-OP	02	

APPENDIX C1:

RELEVANT PERSONS CONSULTATION METHODOLOGY FOR PETREL-3 & PETREL-4 MONITORING AND DECOMMISSIONING ENVIRONMENT PLAN – BRIDGING DOCUMENT

	eni australia		Rev. index.		Sheet of sheets 2 / 35
			Validity Status	Rev. No.	
			PR-OP	02	

1.	DEFINITIONS	3
2.	INTRODUCTION	5
2.1	Eni's Corporate Management System Documentation	5
2.2	The OPGGS Environment (E) Regulatory Requirements	6
2.3	Eni Australia's Process for Relevant Person Engagement	7
3.	REGULATIONS AND GUIDELINES	8
4.	RELEVANT PERSON IDENTIFICATION AND ANALYSIS	9
4.1	Relevant Person Identification	10
4.2	Self-Identified Relevant Persons	15
5.	RELEVANT PERSON CONSULTATION PLANNING	16
5.1	Provision of Information to Relevant Persons.....	16
5.2	Planning and Preparing for Consultation.....	16
5.2.1	Planning for the Tracking of Effective Consultation	18
5.2.2	Specific Consultation Approaches and Information Requirements	20
5.3	The Consultation Period	24
6.	CONSULTATION METHODOLOGY WITH RELEVANT PERSONS	25
6.1	Consultation Approach.....	25
6.2	Extended Enquiry (Broader Consultation).....	26
6.3	Monitoring and Ensuring Consultation Effort	27
6.4	Follow-Up With No Response	28
7.	MONITORING OF RELEVANT PERSON CONSULTATION	30
7.1	Monitoring Consultation and Closing Consultation Period.....	30
7.2	Monitoring Responses Received	31
7.3	Assessment of Merit - Objections or Claims and Relevant Matters	31
8.	REPORTING OF RELEVANT PERSON CONSULTATION	33
8.1	Updates to the EP to Incorporate Consultation Feedback.....	33
8.1.1	Consultation Reports	33
8.1.2	Sensitive Matters Report	33
8.2	Section 5 of the Environmental Plan: Relevant Person Consultation.....	34
9.	EP IMPLEMENTATION ENGAGEMENT	35

1. DEFINITIONS

The definitions in **Table 1-1** are used as the basis for the approach to identifying and consulting with relevant persons and are referred to throughout this Document.

Table 1-1: List of Definitions

DEFINITION	DESCRIPTION
Activities	In relation to sub-regulation 25(1) of OPGGS(E) Regulations, something a person or group does. This is likely directed to what the relevant person is already doing'.
Consultation period	Defines the general consultation period during development of the EP. The consultation period is set within the email to the relevant person and is at least a six-week period (30 business days). This is a default initial expected response period unless there is justification for an alternative period. Where dialogue with relevant persons is ongoing after this period, Eni will continue to consult with relevant persons until Eni believes it has provided sufficient evidence/justification to close the consultation.
EMBA	The <i>environment that may be affected</i> , as defined in Section 4.1 and shown in Figure 4.1 of the Environment Plan. Broadly, it is the area within which the environment that may be affected from both planned and unplanned activities, encompassing the outermost boundary of the worst-case spatial extent of the credible hydrocarbon release scenarios
EP Implementation Engagement	Following the consultation period, arrangements for ongoing consultation with relevant authorities, persons, and organisations is included in the implementation strategy, in order to demonstrate that there is an effective two-way communication process in place between the titleholder and those relevant persons (as per OPGGS(E) Regulations Subsection 22[15]).
Environment Plan	Refers to the <i>Petrel-3 and Petrel-4 Monitoring and Decommissioning EP</i> .
Functions	In relation to sub-regulation 25(1) of the OPGGS(E) Regulations. Functions refer to a power or duty to do something.
Interests	In relation to sub-regulation 25(1) of the OPGGS(E) Regulations. Interests represent a connection to the values described in the EP. Any interest possessed by an individual, whether or not the interest amounts to a legal right or is a proprietary or financial interest or relates to reputation. However, an interest does not extend to general public interest in an activity.
Interested person	A person who may have an interest in the activities but is not a relevant person.
Objection or claim	May include: <ul style="list-style-type: none"> An expression of opposition, protest, concern or complaint about the proposed activities. A request or demand that certain action be taken by the titleholder to address adverse impacts. An assertion that there will be an adverse impact. An allegation to cast doubt about the manner in which the activities will be managed.
Operational Area	The spatial boundary of the Petrel-3 and Petrel-4 monitoring and decommissioning works, as defined in Section 3.1.2 and shown in Figure 3.5 of the Environment Plan. The area encompassing all planned activities to be undertaken by Eni including the spatial extent within which impacts from planned activities can or will occur, such as operational discharges.
Petrel's general zone	The broader, social footprint that extends beyond the Operational Area, ZPI and EMBA and in range of Darwin, Tiwi Islands, Wadeye, Kununurra, Wyndham and Kalumburu.

	eni australia		Rev. index.		Sheet of sheets 4 / 35
			Validity Status	Rev. No.	
			PR-OP	02	

DEFINITION	DESCRIPTION
Petrel's overall spatial extent	The footprint of the petroleum activities, being the Operational Area; the zone of potential impact (ZPI); and the environment that may be affected (EMBA).
Petroleum activities	The petroleum activities referred to within <i>the Petrel-3 and Petrel-4 Monitoring and Decommissioning EP</i> .
Project	Refers to the Petrel-3 and Petrel-4 Monitoring and Decommissioning Project.
Reasonable period	A reasonable time for relevant persons to consider the effect of a proposed activity on their functions, interests or activities and have opportunity to make a response detailing any objections or claims. Defined by the consultation period.
Reasonable attempt	Making reasonable attempts to make contact with all identified relevant persons for the EP (where a reasonable and workable avenue exists). Recognising that specific consultation methods of engagement and ways to pass on information may be more appropriate for certain groups of relevant persons.
Relevant matter	A matter raised by a relevant person that has been assessed as being relevant to the activity. May also include a request for further relevant information, or provision of information that is relevant to the activities.
Relevant person	Can be a person, organisation, department or agency that falls within one of the categories as defined by sub-regulation 25(1) of the OPGGS(E) Regulations; however, it does not include those whose functions, interests or activities will only be affected by an activity in an immaterial or negligible way.
Sensitive information	Captures personal information about an individual that is contained in information given by a relevant person in the consultation period or any person during public comment on an EP - as defined in S.5 of the OPGGS(E) Regulations.
Stakeholder	Any individual, group and/or organisation who can affect, or be affected by, or perceive itself/themselves to be affected by a project/program and therefore potentially, may have a stake in its outcome (relevant persons and interested persons are considered stakeholders).
Subject matter experts (SME)	Specialists from either within Eni or contracting to Eni, such as engineers, environment team members, stakeholder relations specialists, Aboriginal affairs consultants and other technical experts relative to the activities.
Values	Values described in the EP, broadly: <ul style="list-style-type: none"> • natural values • cultural and heritage values • socioeconomic values.
ZPI	The zone of potential impact (or moderate exposure zone) as defined at the commencement of Section 4 and shown in Figure 4.1 of the Environment Plan. This zone is smaller than the EMBA and may be representative of an area of biological impact from hydrocarbons (refer Section 4.1 for more information).

	eni australia		Rev. index.		Sheet of sheets 5 / 35
			Validity Status	Rev. No.	
			PR-OP	02	

2. INTRODUCTION

This Appendix serves as a *Bridging Document* between Eni's corporate management system requirements and the Australian regulatory requirements for consulting with relevant persons when developing and/or revising an Environment Plan (EP) under the *Offshore Petroleum and Greenhouse Gas Storage (Environment)* regulations.

This document outlines the approach Eni will utilise for the identification of, and consultation with relevant persons as required, from both an internal perspective and from a regulatory perspective. All relevant person consultation for the *Petrel-3 and Petrel-4 Monitoring and Decommissioning EP* will be performed in accordance with the intentions set within this document.

This document articulates:

- the process for identifying all relevant persons applicable to the *Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan*.
- the process of consultation, including the preparation of appropriate consultation materials and forms of consultation for each relevant person identified, as well as the assessment of information and feedback received.
- all other information to demonstrate that appropriate consultation will be undertaken in accordance with the OPGGS(E) Regulations, including any additional information incorporated into the EP as a result of consultation.

2.1 Eni's Corporate Management System Documentation

Eni's MSG, *Responsible and Sustainable Enterprise* [MSG-SSC-ENI SPA-ENG-R03] is the management system guideline (MSG) that defines the rules of conduct and principles to be observed in carrying out activities and serves as the overarching corporate guide for stakeholder engagement. The MSG's associated *Annex E, Sustainability Stakeholder Engagement* provides a methodology for:

- *identifying, analysing and ensuring adequate engagement of stakeholders*
- *assessing and monitoring engagement*
- *identifying and responding to Stakeholder interests and requests.*

A responsible and sustainable approach represents the logic for creating value in the medium and long-term for both Eni and for all stakeholders, combining financial stability with social and environmental sustainability. In fact, a key goal for Eni is ensuring that its activities are implemented to respect and consider the perspective of all concerned stakeholders in the protection of the environment in countries where we operate.

Eni's *Responsible and Sustainable Enterprise Model* (**Figure 2-1**) highlights the importance of an '*Understanding of the context*' where the company mandates identifying and getting to know stakeholders to create long-lasting relationships and contribute together, towards sustainable development.

	eni australia		Rev. index.		Sheet of sheets 6 / 35
			Validity Status	Rev. No.	
			PR-OP	02	



Figure 2-1: Eni's Responsible and Sustainable Enterprise Model

In addition to identification and understanding of stakeholders within Eni's *Responsible and Sustainable Enterprise Model*, understanding the global and local contexts are also essential. This includes obtaining in-depth knowledge about local social-economic conditions, and the consideration of specific in-country regulatory requirements.

2.2 The OPGGS Environment (E) Regulatory Requirements

The *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act) and associated regulations provides the legal framework for offshore petroleum and greenhouse gas activities in Commonwealth waters (those areas more than 3 nautical miles from the territorial sea baseline).

The primary legislation regulating these activities is the *Offshore Petroleum and Greenhouse Gas Storage (OPGGS) Act 2006* and associated OPGGS Environment (E) Regulations 2009 which require that a petroleum or greenhouse gas activity is undertaken in an ecologically sustainable manner, and in accordance with an accepted Environment Plan (EP).

In terms of consultation, the OPGGS(E) Regulations require that when developing or revising an EP, titleholders must consult with relevant persons.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is responsible for regulating environmental legal requirements for offshore petroleum and greenhouse gas activities in Commonwealth waters – including the assurance that appropriate consultation has taken place in the course of titleholders preparing their Environment Plans.

OPGGS(E) Regulation 25 requires a titleholder to undertake consultation with relevant authorities, persons and organisations in the course of preparing a new or a revision to an EP. Specifically OPGGS(E) Regulation 25 requires:

1. In preparing an EP, a titleholder must consult each of the following 'relevant persons':
 - a) each Commonwealth, State or Northern Territory agency or authority to which the activities to be carried out under the Environment Plan may be relevant,
 - b) if the plan relates to activities in the offshore area of a State - the Department of the responsible State Minister,

	eni australia		Rev. index.		Sheet of sheets 7 / 35
			Validity	Rev.	
			Status	No.	
			PR-OP	02	

- c) if the plan relates to activities in the Principal Northern Territory offshore area - the Department of the responsible Northern Territory Minister,
 - d) a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the Environmental Plan,
 - e) any other person or organisation that the titleholder considers relevant.
2. For the purpose of the consultation, the titleholder must give each relevant person sufficient information to allow the relevant person to make an informed assessment of the possible consequences of the activity on the functions, interests or activities of the relevant person.
 3. The titleholder must allow a relevant person a reasonable period for the consultation.
 4. The titleholder must tell each relevant person that the titleholder consults that:
 - a) the relevant person may request that particular information the relevant person provides in the consultation not be published, and
 - b) information subject to such a request is not to be published under this Part.

2.3 Eni Australia's Process for Relevant Person Engagement

As indicated in its corporate MSG and associated *Annex E, Sustainability Stakeholder Engagement*, Eni's strategy has been, and is, to develop and maintain long-term relationships with stakeholders (including relevant persons) in and around its operations, both onshore and offshore, which may result in consultation and engagement at levels above and beyond that required for the purposes of compliance with the OPGGS(E) Regulations.

Since commencing its Northern Territory 'Blacktip' operations (active since 2009), and through the implementation of the associated Blacktip Stakeholder Management Plan (SMP) [0000_DV_PR.DPM.0110.000], Eni continues to maintain stakeholder relationships across the region. As a component of that SMP, Eni maintains a database of interested persons, being those individuals, groups and/or organisations who may have an interest in current onshore and offshore activities. These interested persons and other stakeholders are also considered for identification as relevant persons for the *Petrel-3 and Petrel-4 Monitoring and Decommissioning EP*.

Figure 2-2 outlines the process Eni follows across all assets, in the consideration of authentic engagement of stakeholders that have an interest in any associated activities.



Figure 2-2: Eni's Process for Engaging with Relevant Persons

This model has also been implemented within this *Bridging Document* to show the clear process Eni undertakes to identify and engage with relevant persons associated with the activities within the *Petrel-3 and Petrel-4 Monitoring and Decommissioning EP*.

3. REGULATIONS AND GUIDELINES

Table 3-1 provides an overview of the guidance or guidelines that have been considered when developing this *Bridging Document* and the associated consultation approach for the *Petrel-3 and Petrel-4 Monitoring and Decommissioning EP*.

Table 3-1: Guidance or Guidelines Relevant to the Consultation Approach

GUIDANCE OR GUIDANCE DOCUMENT	CONTENT
Australian Fisheries Management Authority (AFMA): Petroleum industry consultation with the commercial fishing industry (AFMA, 2023)	Provides information for the petroleum industry on how to consult with the Commonwealth commercial fishing industry.
Australian Institute of Aboriginal and Torres Strait Islander Studies: Native Title Information Handbook Northern Territory 2016	An Information Handbook produced by AIATSIS that explains how Native Title, Indigenous Land Use Agreements, Cultural Heritage, and Indigenous Protected Areas are administered in the NT.
Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector (WAFIC, 2023)	WAFIC's Consultation Guidance Framework providing best practice consultation principles and guidelines for oil and gas titleholders with the WA commercial fishing industry
Consultation approach for Unplanned Events https://www.wafic.org.au/what-we-do/access-sustainability/oil-gas/consultation-approach-for-unplanned-events/ (WAFIC, 2023)	Outlines WAFIC's preferred consultation strategy for significant unplanned events (e.g. oil spill) where titleholders can demonstrate the likelihood of such events occurring is extremely low.
Interim Engaging with First Nations People and Communities on Assessments and Approvals Under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (DCCEEW, 2023)	Outlines the statutory obligations that apply to, and DCCEEW's expectations of, proponents engaging with First Nations people and communities under the EPBC Act.
Kimberley Land Council: Native Title Story – An Introduction to Native Title and Prescribed Bodies Corporate (2019)	A native title information resource for Kimberley Traditional Owners providing an overview of the native title process and the role of PBCs.
Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 Replacement Explanatory Statement (pdf)	An explanatory statement issued by the authority of the Minister for Resources to explain the OPGGS Act 2006 associated OPGGS (Environment) Regs.
NOPSEMA Guidance Note: Petroleum activities and Australian Marine Parks (Doc#: N-04750-GN1785, 2020)	Provides guidance on managing petroleum activities risks and impacts to Australian Marine Parks and to support consultation with the Director of National Parks.
NOPSEMA Guidance Note: Responding to public comment on Environment Plans (NOPSEMA, 2022b)	Provides guidance on consultation for EPs. Reflects NOPSEMA's interpretation of the requirements of the OPGGS(E) Regulations.
NOPSEMA Guideline: Consultation in the course of preparing an Environment Plan (NOPSEMA, 2023)	Provides guidance on consultation for EPs. Focuses on the instructive reasons given by the Full Federal Court of Australia, in its appeal decision Santos NA Barossa Pty Ltd v Tipakalippa [2022], FCAFC 193 (appeal decision), on 2 December 2022.
NOPSEMA Guideline: Consultation with Commonwealth agencies with responsibilities in the marine area (NOPSEMA, 2022a)	Provides guidance on consultation for EPs, specifically Australian Government agencies with responsibilities in the Commonwealth marine area.
NOPSEMA Guideline: Environment Plan decision making (Doc#: N-04750-GL1721, 2024)	Sets out NOPSEMA's considerations in making decisions in accordance with the legislated criteria relevant to EPs. Some clear definitions are extracted from this guideline.
NOPSEMA Information Brochure: Consultation on Offshore Petroleum Environment Plans - Information for the Community' (May 2023)	An information brochure created for members of the community who may be relevant persons under the OPGGS (E) Regulations.

	eni australia		Rev. index.		Sheet of sheets 9 / 35
			Validity Status	Rev. No.	
			PR-OP	02	

4. RELEVANT PERSON IDENTIFICATION AND ANALYSIS

Eni's MSG, *Responsible and Sustainable Enterprise* outlines that identifying and understanding stakeholders, with particular attention to those impacted directly and indirectly, is the primary tool for understanding the potential or perceived impacts that Eni can have on them. Furthermore, identification and analysis allow for consideration of the most effective methods for involving them.

To identify relevant persons, the required inputs will include:

- Petrel's overall spatial extent of the petroleum activities, being the:
 - Operational Area
 - The zone of potential impact (ZPI)
 - The environment that may be affected (EMBA)
- Petrel's general zone – which extends beyond Petrel's overall spatial extent above (noting the Petrel wells are in offshore permit NT-RL/1, approximately 260 km WSW of Darwin and ~170 km offshore of the WA coast)
- a description of the petroleum activities detailed within the EP
- an assessment of the impacts and risks from both planned and unplanned events.

Eni will commence the relevant person identification and analysis through the strategic implementation of an internal *Stakeholder Mapping Workshop*. This is a pertinent initial process to not only identify and profile relevant persons, but also to set the scene for the way that relevant person consultation will be carried out.

Third party subject matter experts will coordinate the *Stakeholder Mapping Workshop* and will work alongside Eni attendees including:

- Executive Leadership
- Petrel Project Leadership Team
- Health, Safety, Environment and Quality Team
- Stakeholder Engagement and Sustainability Team

Elements of the *Stakeholder Mapping Workshop* will encompass:

- Executive Leadership overview of the importance of stakeholder engagement.
- Clarifications of roles and responsibilities for EP Consultation.
- Project Overview.
- Professional learning: current stakeholder landscape; regulatory requirements; stakeholder definition; relevant person definition; interested person definition; the 'what and why' of stakeholder management; and best practice principles.
- Stakeholder identification, analysis, and classification into target groups.
- Consultation communications tools for the various target groups.
- Elements of the *Relevant Persons Register* (Appendix C2); the *Relevant Persons Consultations Log* (Appendix C4a); and the *Relevant Persons Consultations Feedback Assessment* (Appendix C4b).

	eni australia		Rev. index.		Sheet of sheets 10 / 35
			Validity	Rev.	
			Status	No.	
			PR-OP	02	

Through the Stakeholder Mapping Workshop, Eni will work through a relevant person identification process, including coastline, nearshore and sea country scopes, to ensure all potential relevant persons are identified and afforded the opportunity to comment on the petroleum activities. Broadly, this identification process (which will complement the Workshop) includes:

- a review of Eni’s stakeholder database, including relevant persons consulted for other activities in Petrel’s general zone.
- a review of legislation and guidelines applicable to petroleum and marine activities to ensure relevant government and regulatory agencies are consulted.
- identification of marine user groups and interest groups active in the area, such as commercial fisheries, charter operators and Traditional Owner groups.
- a review of the Commonwealth, Northern Territory (NT) and Western Australian (WA) fisheries data, including licence holders of relevant fisheries.
- discussions with identified relevant persons, industry organisations and other stakeholders to identify other potentially relevant persons.

Opportunities for stakeholders and/or relevant persons to self-identify are encouraged and will occur as Eni engages and consults across communities within Petrel’s general zone.

4.1 Relevant Person Identification

The potential to create long-term value depends on Eni’s ability to interact with all stakeholders and reinforce mutual trust. To ensure the involvement of local stakeholders, the method for engagement results from stakeholder identification, knowledge and prioritisation and on a broader holistic level, results in the development of Eni’s Stakeholder Management Plan (SMP).

The list of relevant persons for this EP will be compiled through considering all stakeholders from within Eni’s SMP stakeholder database that fall within Petrel’s general zone. A subsequent review of that database combined with the specific *Petrel Stakeholder Mapping Workshop* outlined above will result in the development and finalisation of a list of the identified relevant persons which will then make up the *Relevant Persons Register* (Appendix C2).

In circumstances where there is any uncertainty as to whether the functions, interests or activities of a person, organisation, department or agency may be affected by the petroleum activities, these persons will be categorised as a relevant person in the first instance (under sub-regulation 25 1e – ‘any other person or organisation that the titleholder considers relevant’).

Each relevant person will be classified into one of the categories as defined by sub-regulation 25(1) (a)-(e) of the OPGGS(E) Regulations. **Table 4-1** presents the categories and examples of those relevant persons against the identifiers required under sub-regulation 25(1) (a)-(e) of the OPGGS(E) Regulations.

Table 4-1: Relevant Person Categories

Category	Definition	Examples of relevant persons
25(1) a	Each Commonwealth, State or Northern Territory agency or authority to which the activities to be carried out under the Environment Plan may be relevant;	This category includes, but is not limited to, Commonwealth, State and Northern Territory departments or agencies regulating the activities in the Operational Area, such as Dept. of Climate Change, Energy(DCCEEW), the Environment and Water, NT Dept. of Industry, Tourism and Trade – Fisheries(DITT), WA Dept. of Primary Industries and Regional Development (DPIRD), etc..
25(1) b	If the plan relates to activities in the offshore area of a State—the Department of the responsible State Minister;	This category includes the associated mining, energy and/or resources department/s for the State Minister of Western Australia.
25(1) c	If the plan relates to activities in the Principal Northern Territory offshore area—the Department of the responsible Northern Territory Minister;	This category includes the associated mining, energy and/or resources department/s for the Minister for Northern Territory.
25(1) d	A person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the Environment Plan	This category includes but is not limited to, relevant persons such as Aboriginal land councils/prescribed body corporates, industry representative bodies (e.g. NTSC, WAFIC), and other industries (e.g. commercial fishing, tourism) that overlap the EMBA.
25(1) e	Any other person or organisation that the titleholder considers relevant	This category includes any other relevant person/s, as determined by Eni during the relevant person identification process.

It is understood that during the consultation process, new information may become available to inform the extent of effect of an activity on a relevant person's functions, interests or activities, which may result in a new relevant person being added to the *Relevant Persons Register* (Appendix C2), or a wrongly identified relevant person being removed. The Register is further built out as Eni further identifies relevant persons during the implementation of the consultation process; and is refined as relevant persons identified by Eni advise that they do not believe they are relevant due to their actual functions, interests and/or activities not being to the extent as considered by Eni.

Figure 4-1 summarises the process of identifying relevant persons for this EP.

The detail and data sources used for relevant persons identification for the EP are presented in **Table 4-2**, along with relevant persons categorisation under sub-regulation 25(1).

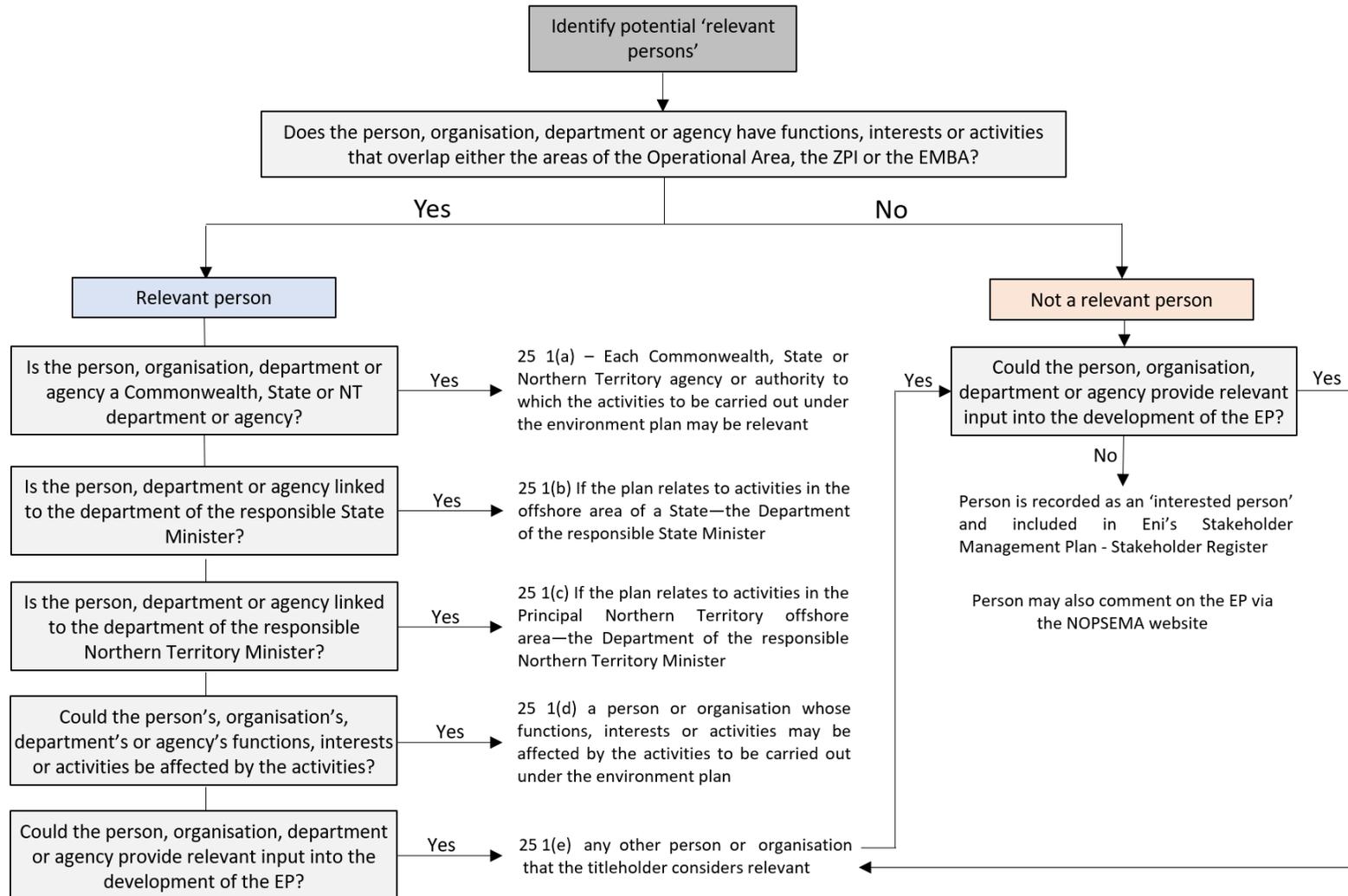


Figure 4-1: Determination of Relevant Persons

Table 4-2: Data Sources and Factors Considered to Identify Relevant Persons

Category	Data Sources Used to Determine Relevance	Factors Considered in RP Determination
Commonwealth / State Government departments, agencies and Ministers	<ul style="list-style-type: none"> ▪ relevant data previously obtained from other activities' consultation operating in the same general location. ▪ relevant data from previous general-purpose stakeholder meetings. ▪ https://www.directory.gov.au/ ▪ https://www.wa.gov.au/agency ▪ https://nt.gov.au/about-government/government-agencies ▪ https://nt.gov.au/about-government/the-cabinet ▪ https://parliament.nt.gov.au/members ▪ https://www.parliament.wa.gov.au/parliament/memblast.nsf/WAMembers ▪ https://www.wa.gov.au/government/premier-and-cabinet-ministers ▪ https://www.aph.gov.au/about_parliament/parliamentary_departments/parliamentary_library/parliamentary_handbook/current_ministry_list ▪ https://www.nopta.gov.au/legislation-and-compliance/legislative-overview/relevant-decision-makers.html 	<p>Government departments and agencies defined under sub-regulation 25(1) are deemed relevant where their functions or activities overlap the Operational Area, ZPI and/or EMBA.</p> <p>Relevant persons defined under sub-regulation 25(1) b and c, are limited to departments of responsible State/Northern Territory ministers that are representatives of the Offshore Petroleum Joint Authorities for offshore areas adjacent to where the activities occur.</p>
Local Government Authorities (LGAs)	<ul style="list-style-type: none"> ▪ relevant data previously obtained from other activities' consultation operating in the same general location. ▪ relevant data from previous general-purpose stakeholder meetings. ▪ NT Councils Local Government Association of the Northern Territory ▪ Western Australian (WALGA) online Local Government Directory. 	<p>Only coastal LGAs with boundaries and where shoreline contact is predicted are deemed relevant.</p> <p>Consideration also is given to whether an LGA is located in or near the general area of Eni's long-term area of operational presence.</p>

Category	Data Sources Used to Determine Relevance	Factors Considered in RP Determination
First Nations people and communities	<ul style="list-style-type: none"> ▪ relevant data previously obtained from other activities' consultation operating in the same general location. ▪ relevant data from previous general-purpose stakeholder meetings and general community liaison. ▪ input from internal and local subject matter experts. ▪ National Native Title Tribunal Register of Native Title Claims and Determinations ▪ Aboriginal and Torres Strait Islander local Ranger groups. ▪ Marine Park Management Plans and associated sea country mapping. ▪ NIAA (National Indigenous Australians Authority) local knowledge of Traditional Owner groups in the Kimberley and Northern Territory. 	<p>Land Councils, Prescribed Bodies Corporate (PBCs), and Native Title organisations representing First Nations people who are associated by location with the ZPI and/or EMBA are conservatively considered relevant persons under category 25 1(d), as their functions, interests and/or activities may be affected.</p> <p>PBCs and Native Title organisations representing First Nations people who are not associated with the ZPI and/or EMBA and are not associated with coastal areas are excluded.</p>
Fishers (Commercial licence holders; Fisheries; recreational fishers; and advocacy associations)	<ul style="list-style-type: none"> ▪ relevant data previously obtained from other activities' consultation operating in the same general location. ▪ relevant data from previous general-purpose stakeholder liaison meetings. ▪ Commonwealth, State and Territory fishery management areas. ▪ licence holder databases, historic fishing effort reports/publications developed by relevant Commonwealth, State and Territory departments. ▪ Australian Fisheries Management Authority (afma.gov.au) list of industry association contacts. 	<p>Only those commercial fisheries with fishery management areas that overlap the ZPI and/or EMBA are considered relevant persons.</p> <p>Only recreational fishing associations with activities that overlap the ZPI and/or EMBA are considered relevant persons.</p>
Businesses (including Chambers of Commerce, fishing charters and tourism operators)	<ul style="list-style-type: none"> ▪ relevant data previously obtained from other activities' consultation operating in the same general location. ▪ relevant data from previous general-purpose stakeholder liaison meetings. ▪ subject matter and local expertise (e.g from CCIs) • online web searches. 	<p>Whilst all CCIs associated by location with the ZPI and/or EMBA are considered relevant persons, only those businesses reliant on marine or coastal environments overlapping the ZPI and/or EMBA are considered relevant.</p>

Category	Data Sources Used to Determine Relevance	Factors Considered in RP Determination
Oil and gas or greenhouse gas titleholders	<ul style="list-style-type: none"> ▪ relevant data previously obtained from other activities' consultation operating in the same general location. ▪ National Offshore Petroleum Titles Administrator title search interactive map of titleholders adjacent to or near the project EMBA. (NEAPS Website) ▪ Further online web searches of titleholders and their project activities. ▪ subject matter expertise. 	Consideration given as to whether a titleholder is within approximately a 100 km radius of the project activities.
Environmental organisations (non-govt. organisations - NGOs)	<ul style="list-style-type: none"> ▪ relevant data previously obtained from other activities' consultation operating in the same general location. ▪ subject matter expertise • online web search of environmental organisations with an active interest in areas of WA and the NT. 	Limited to State, Territory and local NGOs with invested interests within the Operational Area, ZPI and/or EMBA, and other organisations that self-identify as being relevant due to a specific function, interest or activity that directly relates to the possible consequences of the activity.

4.2 Self-Identified Relevant Persons

Eni notes that there may be self-identified relevant persons, and effort will be made to facilitate their identification through extended enquiry (with links to published consultation materials) to notify broadly of the activities during the environment plan preparation phase (refer Section 5.2.1).

In embarking on extended enquiry and combined with conducting specific planned consultations with already-identified relevant persons, Eni appreciates that this may result in the further self-identification of additional relevant persons. A strategy is in place for such persons to contact Eni, via a specific email address and/or phone contact. As per section 3.1, newly identified relevant persons will be added to the Relevant Persons Register (Appendix C2) and will be consulted in the manner described within this Bridging Document.

	eni australia		Rev. index.		Sheet of sheets 16 / 35
			Validity Status	Rev. No.	
			PR-OP	02	

5. RELEVANT PERSON CONSULTATION PLANNING

5.1 Provision of Information to Relevant Persons

Sub-regulation 25 (2) of the OPGGS(E) Regulations requires that:

For the purpose of the consultation, the titleholder must give each relevant person sufficient information to allow the relevant person to make an informed assessment of the possible consequences of the activity on the functions, interests of activities or the relevant person.

Eni's Annex E: Sustainability Stakeholder Engagement (Section 4.3.1.2: Information for Stakeholders), asserts that information provision will need to be applicable to different types of stakeholders in accordance with the most appropriate methods and channels. Consultation will be carried out taking into account technical limitations of the local audience whilst ensuring the appropriate amount of relevant detail.

In accordance with the above, when developing consultation materials, the information provided to relevant persons in high-level materials (e.g., EP fact sheets, presentations) will be developed as follows:

- information around, 'What is an environment Plan?.'
- statement of reasons as to why potential relevant persons have been identified and are being consulted.
- summary of activity description, including location, timing and duration, including distances from the Australian coastline and a map with coordinates listed.
- high-level descriptions of the Operational Area, Zone of Potential Impact (ZPI) and environment that may be affected (EMBA).
- summary of potential impacts associated with the activity, including a high-level description of emissions, discharges and wastes and summary of management controls to be implemented.
- Inclusion of QR code and website links with specific project-related email and phone contacts.
- Provision of, and referral to, the NOPSEMA Information Brochure, 'Consultation on Offshore Petroleum Environment Plans - Information for the Community'.
- Management of feedback and sensitive information.

The information provided will also seek advice from the relevant person as to next steps for consultation and Eni's expectations on a response (i.e., what information is being sought, within what timeframe and how the information will be used).

5.2 Planning and Preparing for Consultation

In accordance with Eni's Annex E: Sustainability Stakeholder Engagement (Section 4.3.1.2: Information for Stakeholders) where possible, the provision of information is to be considered a preliminary step towards a more proactive and interactive involvement of Stakeholders.

The MSG *Annex* goes on to explain that a well-planned stakeholder engagement strategy involves engagement (and/or consultation) linked to mapping the prioritisation of stakeholders based on the assessment of their needs and/or requirements and the analysis of issues of interest to them.

For each stakeholder and/or relevant person, a defined strategy for prioritisation will be followed to identify the level and method of engagement and/or consultation.

Eni's MSG *Annex E, Sustainability Stakeholder Engagement* identifies various targets and criteria to be considered. These include:

- the characteristics of the cultural and regulatory context
- the needs, capacities and expectations of the stakeholder
- the nature of the potential relationship to be developed with a given stakeholder (e.g. the more necessary the engagement, the higher the level of engagement required)
- the prevention, minimisation and/or management of any issues related to Eni's presence.

As per **Table 5-1** below, the MSG *Annex* also proposes an illustrative and non-exhaustive list of engagement methods, based on having different levels of engagement according to stakeholder prioritisation.

Table 5-1: Engagement Methods Vs. Stakeholder Prioritisation

Engagement levels	Type of action	Engagement methods	Recommended application in the quadrants of the Relevance & Disposition Matrix		
			High	Medium	Low
	Monitoring Analysis carried out by the Company without direct involvement of the Stakeholder	<ul style="list-style-type: none"> • Collection of media information • Monitoring internet and print media 			
	Information One-way communication, from the Company to the Stakeholder	<ul style="list-style-type: none"> • Newsletters and letters • Brochures • Disclosure on media • Public speeches, conferences and presentations 			
	Consultation Two-way involvement, the Company consults the Stakeholder with regard to specific aspects	<ul style="list-style-type: none"> • Community meetings (via Community Liaison Officers) • Survey and Focus group • Meeting with specific Stakeholders • Public meetings • Workshops 			
	Participation Broad two-way or multi-directional involvement, the purpose of the involvement between the company and the Stakeholder is finding out the needs, however without mutual obligations to undertake actions	<ul style="list-style-type: none"> • Multi-stakeholder forum • Advisory panels • Participatory decision-making processes • Focus group 			
	Collaboration Broad two-way or multi-directional involvement, the purpose of the involvement between the company and the Stakeholder is finding out the needs, accepting mutual obligations to undertake actions	<ul style="list-style-type: none"> • Cooperation/partnership agreements • Multilateral initiatives 			
	Empowerment Company decisions are made with broad involvement of the stakeholder, who can help orient them	Integration of the stakeholders in company governance, strategy and operations			

For the Petrel-3 & Petrel-4 Monitoring and Decommissioning EP, in order to prepare for effective consultation to take place, a number of strategies will be applied to ensure all relevant person groups: appropriately receive all information; are provided a reasonable opportunity for input; and are given opportunity to participate in genuine two-way dialogue.

Planning and preparation for consultation will include:

- Development of high-level information pack resources (e.g., EP Fact Sheets / Web Landing Page of more detailed information).
- Preparation of content, lay-out and QR code for newspaper advertisements and preparation of script for radio advertisements.
- Tailored content preparation for consistency of message in correspondence, emails and phone calls and follow-up phone calls.
- Preparation of other targeted materials (e.g., slide-sets and handouts), for distribution at meetings and roadshows (in person and online).

Note that materials for consultation with communities including First Nations relevant persons may be adapted to optimise audience understanding. All copies of adapted materials will also be included in Appendix C3: 'Consultation Materials'.

5.2.1 Planning for the Tracking of Effective Consultation

As the process of consultation progresses, to track and assess whether consultation is appropriately being achieved for each relevant person, a monitoring system utilising relevant person target groupings has been established as per **Table 5-2**. This, combined with the '*Determination of Relevant Persons*' process outlined in **Figure 4-1**, will enable Eni to consider the level of persistence that is required for each relevant person to ensure appropriate consultation has occurred.

Note that relevant person target groupings as per **Table 5-2** have been represented in both Appendix C2 (*Relevant Persons Register*) and again in Appendix C4a (*Relevant Persons Consultations Log*).

Table 5-2: Ensuring Appropriate Consultation with Relevant Person Groups

Group	Description	Consultation
Group 1	Relevant persons with functions, interests or activities that are associated with the Operational Area who may be affected by planned activities	<p>Relevant person must be informed/consulted/involved (where the relevant person <i>wishes</i> to be consulted) during E.P. preparation to ensure targeted and tailored information is provided by titleholder focal point/s regarding planned activity.</p> <p>These relevant persons also experience extended enquiry notifications, broader, focused higher-level consultation, targeted and tailored information sharing.</p> <p>(i.e., newspaper ads with QR code that e-links to information package; radio ads; multiple email follow ups; scheduled phone calls; coordinated roadshow visits; meetings and/or presentations; issue of tailored information packages; and responsiveness to clarifications on request).</p> <p>May include further meetings or presentations upon request.</p>

Group	Description	Consultation
Group 2	Relevant persons with functions, interests or activities that are associated with the ZPI (or moderate exposure zone) who may be affected by unplanned activities (i.e. spills) and who require information	<p>Relevant person to be approached/ informed/ consulted during E.P. preparation to ensure targeted and tailored information is provided by titleholder focal point regarding planned activity.</p> <p>These relevant persons also experience extended enquiry notifications and broader, focused higher-level consultation. (i.e., newspaper ads with QR code that e-links to information package; radio ads; multiple email follow ups; scheduled phone calls; coordinated roadshow visits; meetings and/or presentations; issue of tailored information packages; and responsiveness to clarifications on request).</p>
Group 3	Relevant persons with functions, interests or activities that are associated with the EMBA (but not the Operational Area or ZPI) who may be affected by unplanned activities and who may have an interest and/or expectation to be informed about the unplanned activities	<p>Relevant person to be approached, informed and consulted via broader, focused higher-level consultation during E.P. preparation with targeted and tailored information provided regarding planned activity.</p> <p>(i.e., newspaper ads with QR code that e-links to information package; radio ads; email and phone follow ups; coordinated roadshow visits; meetings and/or presentations)</p>
Group 4	Any other relevant persons who may be indirectly impacted or have interests in the unplanned activities. Includes extended enquiry for persons who may not be known to Eni.	<p>Relevant person to be consulted via extended enquiry to notify of the activities during E.P. preparation.</p> <p>(i.e., newspaper ads with QR code that e-links to information package; radio ads; follow up emails).</p>

Table 5-2 enables comprehension of the following planned sequential processes (not in order of groups above) for consultation throughout EP preparation:

1. Direct engagement between all Eni key focal points (across disciplines) and relevant persons with functions, interests or activities that overlap with the **Operational Area** through providing tailored information with scheduled phone/email/meeting follow up to invite comments.
2. Targeted emails with tailored information and phone calls specifically to identified relevant persons with functions, interests or activities that overlap with the **EMBA**

	eni australia		Rev. index.		Sheet of sheets 20 / 35
			Validity	Rev.	
			Status	No.	
			PR-OP	02	

(low exposure zone). Initial default response period of 30 business days (unless there is justification for an alternative period) inviting comments.

3. Follow-up targeted emails and phone calls (within the 30-day response period) to the above identified relevant persons with functions, interests or activities that overlap with the EMBA (low exposure zone) to ensure receipt of information and to invite comments.
4. Eni stakeholder focal point providing tailored information to relevant persons with functions, interests or activities that overlap the **ZPI** (moderate exposure zone) who may be affected by unplanned activities (i.e., spills) through targeted emails and phone calls. Initial default response period of 30 business days (unless there is justification for an alternative period) inviting comments.
5. Further scheduled phone/email follow up within 30-day response period; roadshow visits; meetings and/or presentations; and provision of detailed responsive correspondence upon request, to relevant persons with functions, interests or activities that overlap the ZPI (moderate exposure zone).
6. Notification to all potentially relevant persons of the activities via newspaper advertisements with a QR code that links the audience to the tailored information package. Additional notification via radio advertisements.

All developed materials used for consultation including (but not limited to) newspaper advertising; QR codes; radio advertising; promotional posters; public notices; roadshow presentations; tailored PowerPoint slide-sets; tailored information packages; newsletter promotions; and information flyers will be compiled into one evidentiary document - *Consultation Materials* (Appendix C3).

It should be noted that the above 'relevant person target groupings' approach is only to monitor the sufficiency of allowing for a reasonable opportunity for input, and for determining whether consultation for development of the EP can be considered completed. The groupings system is not linked to any application and/or interpretation of information received from relevant persons in the groups. For information received from any relevant persons, this is addressed via the process outlined in **Section 7.3**, '*Assessment of Merit - Objections or Claims and Relevant Matters*'.

5.2.2 Specific Consultation Approaches and Information Requirements

Some relevant persons have developed guidance documents or have information on their websites, which outline specific information they require from a titleholder during EP consultation. Any additional specific guidance (identified in Section 3) will also be utilised when preparing consultation materials and engagement approaches.

The below provides details of specific consultation approaches that will be carried out for certain relevant persons.

	eni australia		Rev. index.		Sheet of sheets 21 / 35
			Validity	Rev.	
			Status	No.	
			PR-OP	02	

Other Petroleum or Greenhouse Gas Titleholders

Given other titleholders have an understanding of the industry and the potential consequences of associated activities, Eni will provide, via email, a factsheet to titleholders who have known ongoing operational interests within proximity (approximately 100 km radius) of the petroleum activities' Operational Area. It is recognised some titleholders within the EMBA may not be captured in this method; however, given these titleholders are not impacted by planned activities, Eni considers this a reasonable approach.

Commercial Fishers

The designated licenced areas of many of the fisheries are extensive over the Australian coast, including within the EMBA. The EP provides an assessment of the potential interaction of these fisheries with the petroleum activities, based on the nature of the fishery and historic effort and catch data.

As a general principle, the peak bodies representing the commercial fisheries are considered by Eni, to be the established representatives of the fishing licence holders. These peak bodies will be provided with the consultation information materials. In addition, and to ensure the widest reach for consultation for commercial fishers as possible, Eni will also target Commonwealth, State and Territory government bodies responsible for commercial fishers. Finally, whilst aiming to respect the widely communicated issue of 'consultation fatigue', and despite previous non-success, Eni will still directly engage (mailing hard copies of consultation material) with those individual license holders whose fishing management or licence area may overlap the EMBA.

First Nations' Relevant Persons

Eni respects that First Nations people are increasingly articulating they no longer are just 'stakeholders', and that they are clear in articulating they, as First Nations people, are the 'cultural rights holders' for lands and sea country.

Eni will make concerted effort to target coastal land councils, Prescribed Bodies Corporate (PBCs), and other Native Title organisations representing First Nations people that have potential to overlap Petrel's overall spatial extent (- being within either the Operational Area, the ZPI and the EMBA).

This will occur through a combination of the already developed positive relationships that Eni already has with numerous First Nations language groups, as well as a focus on meeting with those groups Eni is yet to connect with. To identify any new groups, Eni will continue to utilise land councils and registered PBCs recognised under the Native Title Act and other relevant legislation (e.g. NT Aboriginal Land Rights Act), to facilitate identification and initial consultation with other First Nations relevant persons.

Subject matter experts will continue to provide guidance on culturally appropriate consultation approaches for First Nations people to account for culturally appropriate engagement, and to ensure local traditions, customs and protocols are considered prior to scheduling engagements.

	eni australia		Rev. index.		Sheet of sheets
			Validity Status	Rev. No.	
			PR-OP	02	22 / 35

N.T. Thamarrurr Region Consultation

With the community of Wadeye in close proximity and already linked to Eni's current other Blacktip Project activities and associated Yelcherr Gas Plant (10km from Wadeye), Eni already partners, both contractually and from an engagement perspective, with the Thamarrurr Development Corporation (TDC). The Thamarrurr Rangers have mapped ecological and cultural values of Sea Country in the Region¹.

Eni continues to maintain strong relationships with the TDC and Rangers and will seek the most opportune time for consultation with local peoples regarding Petrel and other associated activities. Eni will also seek to publish an advertisement in the monthly TDC Newsletter with the aim for relevant persons to self-identify and attend any associated on-Country consultation meeting planned for Wadeye. Additionally, Eni will continue to engage with the associated West Daly Regional Council (Wadeye Office) and provide information about Eni's activity.

Initial consultation (as per all relevant person initial consultation) will be through the provision of an email / information pack. Eni will then follow up to offer in-person consultation via a scheduled targeted site visit.

Acknowledging and understanding the social challenges Wadeye has endured in the past, and the potential for these to surface again from time to time, Eni is resolute in facilitating an ongoing engagement process in the Thamarrurr Region through attendance to monthly community meetings; investigation of increased Ranger servicing opportunities; and progression towards more regular community interaction.

W.A. Kimberley Region Consultation

With the Kimberley and specifically, East Kimberley being in close proximity to Petrel's general zone, which extends beyond the Operational Area, ZPI and the EMBA, and includes the communities and lands from Kununurra to Wyndham and to Kalumburu, Eni has a keen interest to increase its engagements in this region.

Additionally, there are interest groups based in Broome that Eni will also continue to liaise with as a number of these groups have responsibility for both the West and the East Kimberley. For example, Eni will leverage its current strong relationship with Broome-based KRED Enterprises (<https://www.kred.org.au/>) where appropriate, to facilitate engagement with any Traditional Owner Groups that may be in addition to those that KRED had already supported with.

Utilising resources such as National Native Title Register (<https://www.nntt.gov.au/>); the Prescribed Body Corporate (PBC) website (<https://nativetitle.org.au/learn/native-title-and-pbcs/native-title-rights-and-interests>); and the Kimberley Land Council's native title information resource, "Native Title Story", Eni will identify and look to consult with all associated Kimberley First Nations people linked to both non-exclusive and exclusive native title possession that overlap the EMBA (Refer **Table 4-2**). Eni will also consider other Kimberley Traditional Custodian groups and organisations associated with traditional lands as well as Land Councils and groups associated with relevant native title determinations and claims.

¹ The results of this mapping exercise were published by Streten et al. (2020) in the Australian Petroleum Production and Exploration Association Journal under the title 'Mapping traditional ecological knowledge of Sea Country to understand biodiversity and areas of cultural importance'.

	eni australia		Rev. index.		Sheet of sheets 23 / 35
			Validity Status	Rev. No.	
			PR-OP	02	

Kimberley regional consultation is not restricted to Traditional Owner groups alone and includes all relevant Kimberley stakeholders that may be identified as relevant persons as per **Table 4-1**. This includes locally based Commonwealth and State government departments, and all other Kimberley people or groups whose functions, interests or activities may be affected by the activities to be carried out under the Environment Plan.

Initial Kimberley region consultation (as per all relevant person initial consultation) will be through the provision of emails and information packs, but Eni will then immediately follow up with one-on-one email, phone and text interactions with the relevant individuals and groups in order to offer in-person consultation via specified and scheduled public roadshows and/or targeted site visits.

Through its long-term approach to membership to the East Kimberley Chamber of Commerce (EKCCI), Eni also intends to advertise in their monthly newsletter, and to be able to present at a 'Business After Hours' event to reach a broad audience of East Kimberley business owners to share information about activities.

Broader N.T. Consultation (including Tiwi Islands)

Whilst, outside of the Thamarrurr Region, many Northern Territory coastal communities (including Darwin) are some distance from the Petrel activities, Eni will be taking a proactive engagement approach to ensure that all stakeholders in the broader Northern Territory regions are aware of the activities being undertaken.

In addition, there are relevant persons based out of Darwin that Eni will continue to consult and engage with. For example, many fishing licensees and peak bodies for recreational and commercial fishers that may overlap the Operational Area, ZPI or the EMBA, operate out of Darwin, Northern Territory.

In addition to Eni seeking to closely engage with Traditional Owners across the broader region of the Northern Territory, the Northern Land Council (NLC) as an independent statutory authority of the Commonwealth since 1976, and recognised in 1994 as the native title representative body for the northern area of the NT², is a key relevant person for Eni to consult in Darwin.

In past consultations, Eni has been advised by NLC to proceed with community and Traditional Owner consultation without direct involvement with NLC, however Eni still intends to reach out to NLC to provide them with the Petrel EP information.

The Tiwi Land Council (TLC), also established under the Aboriginal Land Rights (Northern Territory) Act (Cth) (ALRA) to represent the interests of traditional owners in access and use processes for the Tiwi Islands, is recognised as an important relevant person to consult in Darwin and if required, on location at the Tiwi Islands. Eni will specifically seek TLC support in engaging with Traditional Owners within the Tiwi Islands.

Similar to the Kimberley, broader NT regional consultation will not be restricted to Traditional Owner groups alone and includes all relevant Northern Territory stakeholders that may be identified as relevant persons as per **Table 4-1**. This includes locally based Commonwealth and State government departments, and predominantly all other

² Note that since the enactment of the Aboriginal Land Rights (Northern Territory) Act (Cth) (ALRA) in 1976 that approximately 50 percent of the land in the NT has become Aboriginal land in addition to 85 percent of the coastline.

	eni australia		Rev. index.		Sheet of sheets 24 / 35
			Validity Status	Rev. No.	
			PR-OP	02	

Darwin-based people or groups whose functions, interests or activities may be affected by the activities to be carried out under the Environment Plan.

As for other regional consultation, initial broader NT regional consultation (as per all relevant person initial consultation) will be through the provision of emails and information packs. Eni will then follow up with one-on-one email, phone and text interactions with relevant individuals and groups in order to offer in-person consultation via specified and scheduled public roadshows and/or targeted site visits.

5.3 The Consultation Period

As defined in **Table 3-1**, for consultation to be effective, relevant persons need to be afforded a 'reasonable period' to identify the effect of the proposed activity. As standard protocol for all EP consultation and based on the nature and scale of impact or risk to the relevant persons, Eni will set a default consultation period of 30 business days. The consultation period for relevant persons will be outlined within the consultation information package materials.

It is noted an adequate period of time needs to be provided for the various relevant persons to receive the information provided, to make an evaluation of the information (which may include third party input), and to then prepare and provide a response to Eni. As such, where there is justification for an extended consultation period, this will be implemented.

	eni australia		Rev. index.		Sheet of sheets 25 / 35
			Validity	Rev.	
			Status	No.	
			PR-OP	02	

6. CONSULTATION METHODOLOGY WITH RELEVANT PERSONS

Eni's *Annex E: Sustainability Stakeholder Engagement*, provides clear direction that consultation and engagement should occur under distinct engagement principles:

- *"Consultation / informed participation should be prior, objective, transparent and ongoing, via a proactive, two-way approach aimed at mutual information exchange.*
- *Local communities should be informed about Eni, project activities and their evolution over time.*
- *Certain groups need consideration regarding information dissemination and reception, and appropriate methods of meeting.*
- *Considered impacts (positive and/or negative) and measures taken should be disclosed in advance.*
- *Eni must consider expectations and/or concerns by those consulted in relation to planning, design and implementation of activities.*
- *Information must be provided about the channels set up by Eni in order to contact and communicate within a timely manner."*

Following assessment of regulations and guidelines; relevant person identification and analysis; and relevant person engagement planning, this section (linked to **Figure 2-2: Eni's Process for Engaging with Relevant Persons**) describes the actual consultation with relevant persons (stakeholder engagement) to take place.

6.1 Consultation Approach

Once all planning processes for consultation are in place, which includes development of high-level information pack resources; preparation of other targeted advertising materials; scripting of correspondence messaging; preparation of other targeted materials for meetings; and the development of the target group tracking tool to ensure consultation is targeted, Eni will implement the following consultation approach:

1. Issuance of emails with high-level information packages providing a summary of activities and seeking response from identified relevant persons should they wish to consult (initial response period of 30 business days).
2. Where deliberated, sourcing of direct addresses, and mail-out of a hard copy of correspondence with high-level information pack distributed to selected identified relevant persons (e.g. Commercial Fishers) who have historically, not responded to emails sent during other EP consultation initial response periods.
3. Follow up of initial email via emails, text messages (for known mobile contacts) and phone calls to all relevant persons.
4. Follow up of initial mail out correspondence with a second round of correspondence to those relevant persons who were posted a hard copy of the information pack.
5. Review and tracking of the *Relevant Persons Consultations Log* (Appendix C4a) to ensure appropriate consultation with relevant person target groups has taken place.

	eni australia		Rev. index.		Sheet of sheets 26 / 35
			Validity	Rev.	
			Status	No.	
			PR-OP	02	

6. Announcement, ahead of time, of targeted regional roadshow visits to relevant persons (already emailed with the information package) as per section 5.2.2, with Eni stakeholder engagement and subject matter experts presenting slide-sets with question-and-answer sessions to regional individuals, groups and associations.
7. Issuance of materials (e.g., slide-sets) in a follow up email to in-person presentations to each relevant person that partook in a face-to-face session.
8. On need, offering to present slide-sets with question-and-answer sessions (both in person and online) to any relevant person that requests further information and agrees with such an approach.
9. Extended Enquiry as per **Section 6.2** to seek out relevant persons who may wish to self-identify and potentially log an objection of claim.
10. The establishment of a dedicated Petrel website with deeper information about the activities (petreleni.com.au); a dedicated email address (info@petreleni.com.au); and a dedicated phone number ([1300 155 616](tel:1300155616)) for any relevant persons to either get in contact, or to self-identify as per **Section 6.2**.

6.2 Extended Enquiry (Broader Consultation)

There may be instances where other individuals, organisations, agencies or groups may consider themselves to be 'relevant' and wish to be included in the consultation process. However, Eni may not be aware that the particular relevant person exists or potentially has functions, interests or activities that overlap with the EMBA and/or the ZPI.

The objective of the approach in this section is to help identify any other relevant person/s (through an opportunity to self-identify) that may not have already been identified as per category (and OPGGS(E) 25(1) e in **Table 4-1**.

Therefore, as an additional proactive step to provide an opportunity to identify new relevant persons, Eni will undertake the following:

- Local/regional newspaper advertisement campaigns.
- Local/regional radio station advertisement campaigns.
- Following connection and information sharing with the Thamarrurr Development Corporation (TDC) to ensure strategic message management, publication of an advertisement in the monthly TDC Newsletter with the aim for self-identified relevant persons to attend any face-to-face consultation meeting.
- Following becoming a member of, connecting with, and sharing information to, the East Kimberley Chamber of Commerce (EKCCI) hosting a regional roadshow event to a broad audience of business owners in the East Kimberley; and publication of an advertisement in their monthly EKCCI Newsletter.
- Following connection and information sharing with the Northern Territory Seafood Council (NTSC) to ensure strategic message management, publication of an advertisement in the NTSC Weekly Wrap Newsletter with the aim for their members to be aware of the information regarding the activities.
- Posting information posters in the regional Shire Offices and EKCCI public space.

	eni australia		Rev. index.		Sheet of sheets 27 / 35
			Validity	Rev.	
			Status	No.	
			PR-OP	02	

If the reader considers themselves a relevant person, they are invited to email the dedicated Petrel email address, or to call the dedicated Eni Petrel 1300 phone number.

Note that the above extended enquiry approach also provides another means of broadcasting information to existing relevant persons.

6.3 Monitoring and Ensuring Consultation Effort

Eni considers it advantageous to follow up with a relevant person on information provided for several reasons, particularly in the circumstance of documentation being provided by email or mail:

- to confirm that the information has been received.
- to enquire as to any questions on the information provided and if more/different information is required to enable the relevant person to make a sound consideration.
- to support Eni's position that a consultation period is adequate for the relevant person to respond to the information provided.
- as a common courtesy and an opportunity to build relationships with the relevant person, particularly in the interests of further EP implementation engagement.

It is not difficult to recognise that the consultation process outlined in **Section 6.1** will require resources to enable success. Section 4.4 (Implementation) of Eni's MSG *Annex E: Sustainability Stakeholder Engagement*, endorses that whilst acknowledging a shared need for a common understanding of the objectives and activities of the consultation process, that during the stakeholder engagement process, third parties may be involved (e.g., consultants supporting project teams, etc.).

Eni will utilise third party engagement to ensure that all ten (10) elements of its consultation approach outlined in **Section 6.1** occur in an efficient and timely manner.

Most of all, will be the essential importance of monitoring and ensuring consultation efforts with all relevant persons in accordance with the target grouping approach outlined in **Section 5.2.1**.

The *Relevant Persons Consultations Log* (Appendix C4a) is specifically designed to track and assess the efforts made to initiate effective two-way dialogue with relevant persons, to the fullest extent that they permit. This Log will show that relevant persons will be contacted numerous times by email, and in a situation where Eni does not receive responses following email communication, then phone calls to those relevant persons who's contact details are known, as well as deeper research to hunt out other emails, office phone details and/or mobile details will be undertaken.

Notwithstanding the above, the efforts approach above also must consider consultation fatigue and/or information burden on relevant persons. Eni has a standard approach for addressing this. If relevant persons do not wish to be contacted further or be provided further information on the activities, they can reply to emails with "STOP" in the subject line, and/or advise Eni's consultation personnel accordingly.

	eni australia		Rev. index.		Sheet of sheets 28 / 35
			Validity Status	Rev. No.	
			PR-OP	02	

6.4 Follow-Up With No Response

Eni notes the following statement within the OPGGS (E) Regs 2023 Explanatory Statement:

“Section 25 places obligations on titleholders but does not place any obligations on relevant persons. If a relevant person does not respond to consultation, the titleholder is not required to wait indefinitely for a response. As long as the titleholder can demonstrate that it has provided sufficient information and a reasonable period for consultation in accordance with subsections 25(2) and (3), the titleholder will have met the consultation requirements.”

It is appreciated that relevant persons are not obligated to respond to a titleholder request to participate in consultation. If a relevant person does not respond after multiple follow-ups and has been given a reasonable period of time and sufficient information throughout the consultation period, Eni will need to regard the consultation efforts for that individual as concluded for the purposes of preparing the Plan.

As per **Figure 6-1**, if no acknowledgement or response is received from attempts to contact a relevant person (recorded in the *Relevant Persons Consultations Log - Appendix C4a*), then Eni will attempt alternative methods of contact (alternative phone/mobile calls/texts, alternative emails, alternative contacts) where this information is available.

Eni recognises that email information may not be appropriate for some relevant persons (e.g., some Traditional Owner groups), and other engagement methods such as direct phone and face-to-face contact with individuals and groups were subsequently used.

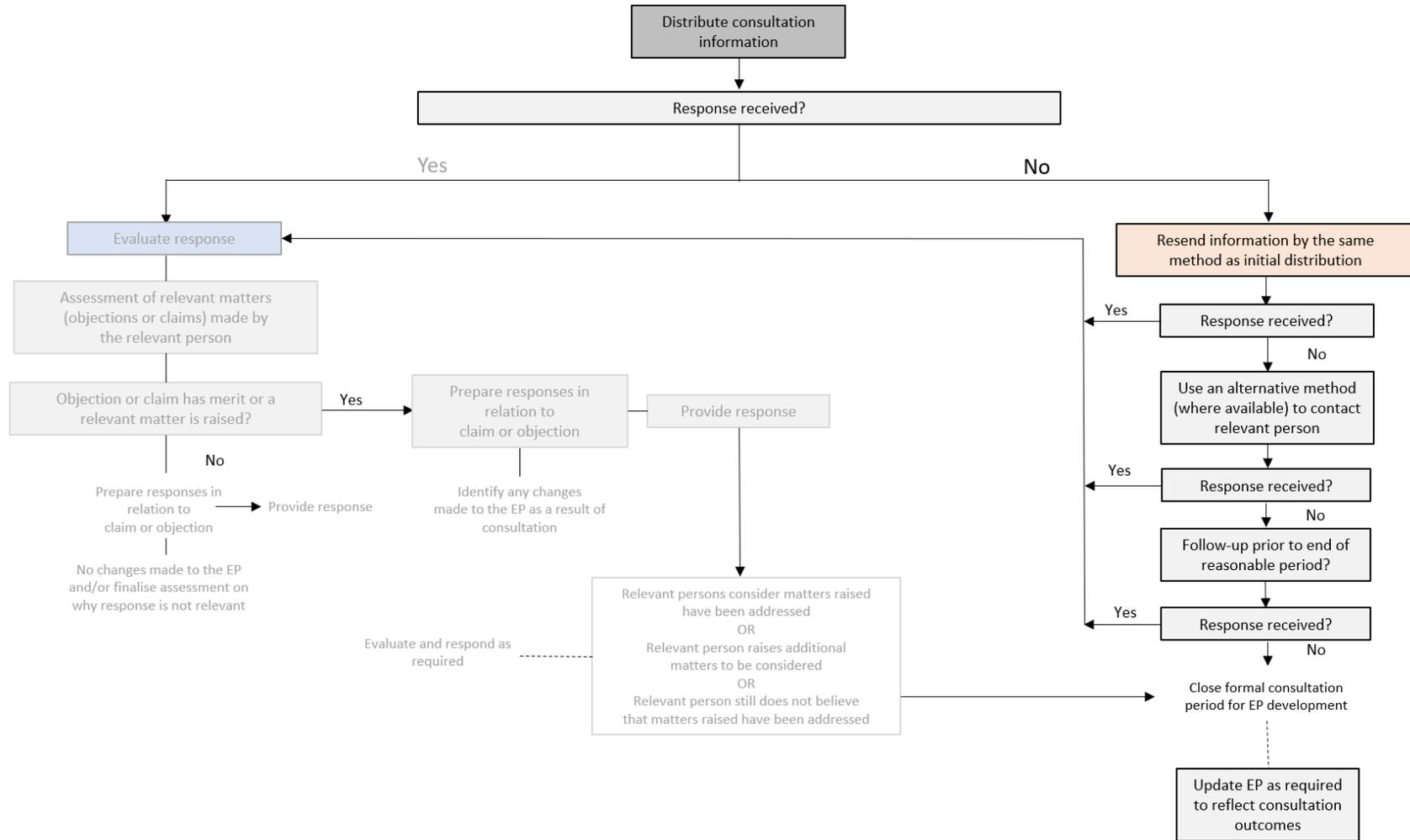


Figure 6-1: No Response Follow-up Flow Chart

			Rev. index.		Sheet of sheets 30 / 35
			Validity	Rev.	
			Status	No.	
			-	2	

7. MONITORING OF RELEVANT PERSON CONSULTATION

7.1 Monitoring Consultation and Closing Consultation Period

As per Eni's MSG, *Responsible and Sustainable Enterprise* . . .

"Monitoring is a continuous activity conducted with the purpose of providing stakeholders with information concerning the progress of the activities and the degree of achievement of the expected results."

Monitoring and evaluation helps to improve both current and future management of outcomes and impacts of the consultation process with specific relevant persons.

The effectiveness of the consultation process will be measured against:

- verification that the level of consultation effort is proportional to the relevance and criticality of each relevant person (as per the *Target Group* approach outlined in **Table 5-2**) and where the relevant person endorses being consulted.
- verification of the capturing of mapping of relevant persons who have submitted claims or objections as per the *Relevant Persons Consultations Feedback Assessment* (Appendix C4b).
- consistency of consultation actions, conducted in accordance with assessment of relevant person claims or objections.

As mentioned previously, tracking progress for all relevant person consultation will occur through completion of the *Relevant Person Consultation Log* (Appendix C4a). This Log is derived from the *Relevant Persons Register* (Appendix C2) where all relevant persons have been identified and then transferred to the Log. This *Consultation Log* captures the number, and methods of consultation for each relevant person including, but not limited to emails, direct phone call canvassing, direct mail, follow ups, and face-to-face and virtual meetings.

In terms of considering whether consultation has appropriately been achieved for each relevant person, planning for engagement with target groups of relevant persons as per **Section 5.2.1: Planning for the Tracking of Effective Consultation** will be considered along with the assessment approach of whether Eni deems that we have put every possible effort in attempting to consult in alignment with **Section 6.4: Follow-Up With No Response**.

In many cases, it is anticipated that there will be clear evidence reflected in the *Relevant Person Consultation Log* (Appendix C4a) that Eni has successfully consulted the relevant person in two-way dialogue, and the relevant person has provided feedback and so consultation efforts will be concluded.

For those relevant persons that have not engaged in two-way dialogue, despite Eni's best endeavours and efforts, then as per **Section 6.4: Follow-Up With No Response**, and given Eni will demonstrate through its *Efforts Log* that it has provided sufficient information and a reasonable period for consultation, then it is noted that Eni will have met the consultation requirements in accordance with subsections 25(2) and (3) of the OPGGS (E) Regulations 2023.

			Rev. index.		Sheet of sheets
			Validity Status	Rev. No.	
			-	2	31 / 35

7.2 Monitoring Responses Received

Given one of the purposes of consulting relevant persons is to gather information that allows confirmation of assumptions made during the impact and risk assessment process for the petroleum activities, the assessment step of consultative responses will be imperative to successfully undertaking and completing the petroleum activities.

Where relevant persons provide specific responses to Eni in relation to the Petrel-3 and Petrel-4 Monitoring and Decommissioning EP, these will be extracted from the *Relevant Person Consultation Log* (Appendix C4a) and will be recorded into the *Relevant Persons Consultations Feedback Assessment* (Appendix C4b).

When responses are received, an assessment of relevant matters, claims or objections will be undertaken so that an appropriate response can be provided (where appropriate) to the relevant person, and appropriate steps will be implemented to address the matter.

7.3 Assessment of Merit - Objections or Claims and Relevant Matters

Section 4.33 of *Annex E: Sustainability Stakeholder Engagement* supports that response actions, appropriately recorded in Appendix C4b, are aimed at responding to claims and objections made by relevant persons and, from a preventive perspective, at identifying, minimising and, where possible, avoiding any negative impact attributable to the activities in Petrel's general zone.

Eni's assessment of relevance and assessment of merit with regards to claims and objections made by relevant persons for the EP, will consider the following:

- **Objection or claim has merit** – the objection or claim raised is relevant to both the petroleum activities and the relevant person's or organisation's functions, activities or interests. The objection or claim has merit if there is a reasonable/scientific basis for related effects or impacts to occur or there is a reasonable basis for the objection or claim to be addressed in the EP.
- **Objection or claim does not have merit** – the objection or claim raised may be relevant to the petroleum activities or the relevant person's or organisation's functions, activities or interests; however, the objection or claim raised has no credible or scientific basis.
- **Relevant matter** – the matter raised does not fit the criteria descriptions for objections or claims with or without merit. However, the matter raised is relevant to the petroleum activities, comprises a request to Eni for further relevant information, or provides information to Eni that is relevant to the EP development and petroleum activities.
- **Not a relevant matter** – correspondence does not relate to the planned activity or the relevant person's, or organisation's functions, interests or activities being affected by the petroleum activities, such as a response with specific issues raised (or acknowledgement).

Figure 7-1 hereafter summarises the process outlined in **Section 7.2** and **Section 7.3** above. Application and/or interpretation of all information received from relevant persons occurs in alignment with OPGGS(E) Regulation 24, which requires Eni to provide an overview of all elements as outlined in Section 8.1.1: Consultation Report.

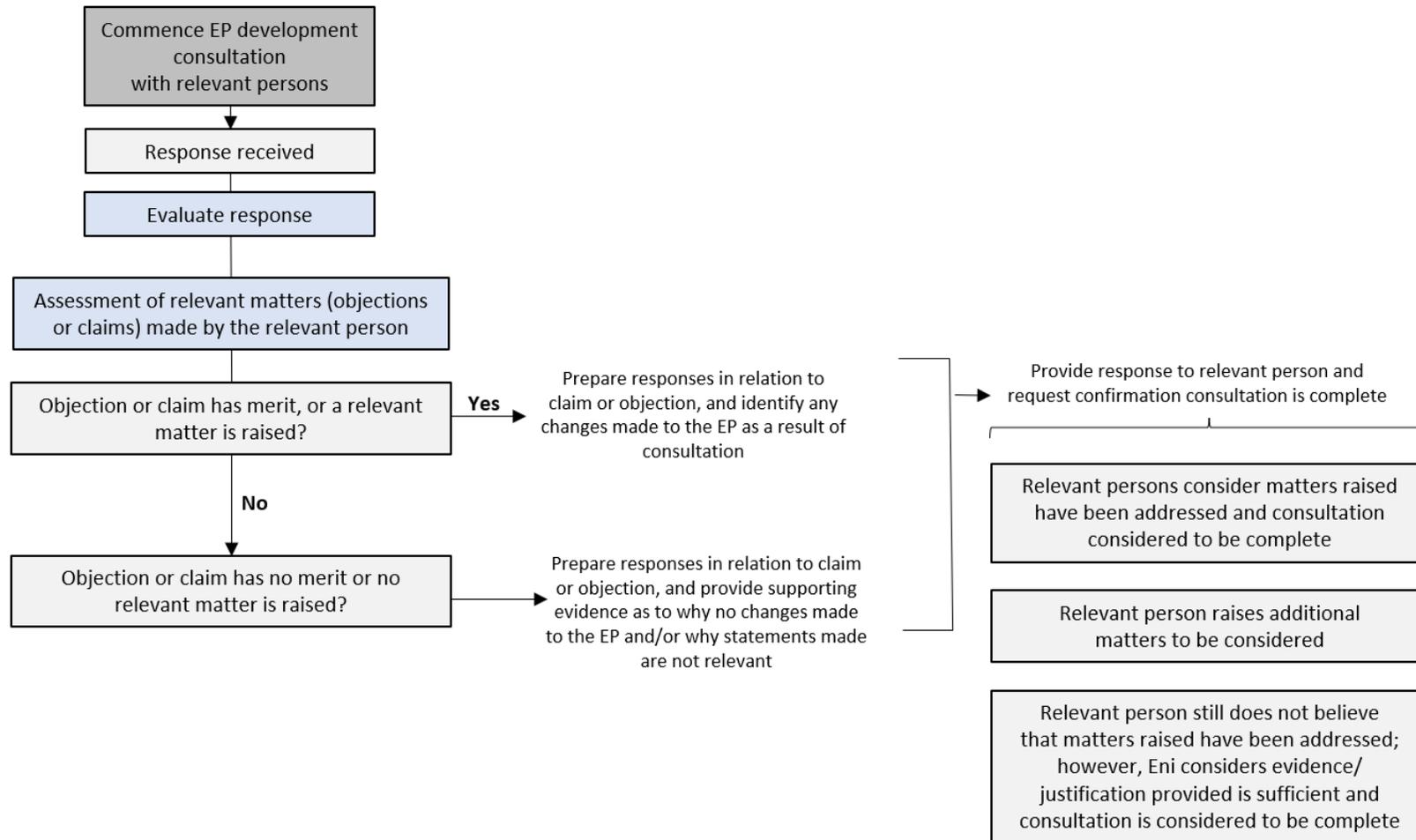


Figure 7-1: Assessment of Relevant Matters, Objections and/or Claims

			Rev. index.		Sheet of sheets 33 / 35
			Validity	Rev.	
			Status	No.	
			-	2	

8. REPORTING OF RELEVANT PERSON CONSULTATION

As per **Figure 2-1: Eni's Responsible and Sustainable Enterprise Model** that was illustrated at the commencement of this *Bridging Document*, reporting is an essential component to this, and most other process models. It is important to report the consultation process for the consideration of the quantitative and qualitative information provided, and the feedback that is received.

8.1 Updates to the EP to Incorporate Consultation Feedback

8.1.1 Consultation Reports

A collective report on all consultations of relevant persons under OPGGS(E) Regulation 25, can be found in Appendix C4a and C4b. Appendix C4a (*Relevant Persons Consultations Log*) presents and tracks all efforts and endeavours made to ensure appropriate consultation with relevant person target groups has taken place. The *Relevant Persons Consultations Feedback Assessment* (Appendix C4b) presents all interactions between the titleholder and a relevant person [regulation 24(b)] with regards to claims, objections and/or relevant matters made by relevant persons and assessed and acted upon (or not).

Together, the Appendix C4a and Appendix C4b consultation reports contain:

- a summary of each response made by a relevant person.
- an assessment of the merits of any objection or claim by relevant persons.
- statements of Eni's assessment of and/or response/s, if any, to each objection or claim; and
- a copy of the associated response to Eni's correspondence, if received, by the relevant person.

8.1.2 Sensitive Matters Report

Notwithstanding **Section 8.1.1** above, it is noted, as per Regulation 26(8) of the OPGGS(E) Regulations, that the EP must not contain any sensitive information other than in the sensitive information part of the EP.

Eni will advise each relevant person that they may request that particular information the person provides in the consultation not be published, and that such information will not be published under the Environment Regulations.

The definition as per Section 5 of the OPGGS(E) Regulations, of the sensitive information part of an environment plan, means a discrete part of the plan that contains only one or both of the following:

- a) sensitive information - information given by a relevant person, that the person requests not be published;
- b) a copy of the full text of any response by a relevant person in consultation under section 25 in the course of preparing the plan.

			Rev. index.		Sheet of sheets
			Validity Status	Rev. No.	
			-	2	34 / 35

Sensitive information will be submitted in a separate report (referred to as the *Sensitive Matters Report*) and will not form part of the publicly available EP.

The Sensitive Matters Report contains a record of all consultation activities undertaken with relevant persons for the EP. The includes all outgoing and incoming emails, phone/text logs and any sensitive information contained in meeting slides used for presentations, handout materials and meeting minutes.

8.2 Section 5 of the Environmental Plan: Relevant Person Consultation

When reporting on the components of stakeholder engagement, **Section 5.2.2** of Eni's *Annex E: Sustainability Stakeholder Engagement*, outlines that examples of some of the methods that could be reported on include (but are not limited to):

- *publications*
- *Events with stakeholders*
- *one-to-one meetings and conversations*
- *follow-up briefings by phone*
- *access to information on the company's website - dedicated to a specific project*
- *reports on social media."*

Section 5 of the *Petrel-3 and Petrel-4 Monitoring and Decommissioning Environmental Plan* will be where all key reporting of the success or otherwise of the EP consultation process outlined in this *Relevant Persons Consultation Methodology Bridging Document* will be detailed.

			Rev. index.		Sheet of sheets 35 / 35
			Validity	Rev.	
			Status	No.	
			-	2	

9. EP IMPLEMENTATION ENGAGEMENT

Eni's *Annex E: Sustainability Stakeholder Engagement* is clear in requiring that we offer free, prior, informed consultation and participation as the process of involvement for the entire duration of a project, in order to ensure that people impacted are consulted freely, actively, and regularly throughout the project's development.

Throughout the execution of the planned activities, as per section 22(15) of the OPGGS(E) Regulations, relevant interested persons and organisations engagement for the Petrel-3 & Petrel-4 monitoring and decommissioning and associated activities will be ongoing. Eni key focal points will continue to work with relevant persons and organisations to address any future concerns if they arise throughout the duration of the EP, and in the context of the associated activities. Should any new relevant interested persons and organisations be identified, they will be added to the stakeholder database and included in all future engagement as required, including specific activity notifications.

In addition to any EP consultation process, as a matter of best practice and outside of regulatory compliance, Eni conducts external relations engagement visits with stakeholders located in, or near the areas where it operates. In the Australian jurisdiction, this includes the Kimberley and Northern Territory regions. Eni operates under the assumption that it is good corporate social responsibility to engage with stakeholders within or near its footprint; it looks to build partnerships and potential long-term value proposition opportunities; and by continuing to talk to stakeholders within or near its footprint, Eni can gain better knowledge of the context, needs and interests of these stakeholders.

Although outside of the 'preparation of EP' and 'execution of planned activities' consultation processes, this engagement assists with the building and maintaining of relationships to facilitate the ability for consultation to occur.

As such, and as is the case for Eni's other activities occurring in, and north of, the Joseph Bonaparte Gulf, an ongoing engagement process will continue to occur in Northern Territory through regular liaison with stakeholders and relevant persons in Darwin and the Thamarrurr region, and in Western Australia's Kimberley region through liaison with stakeholders and relevant persons across the Kimberley, especially the East Kimberley.

Eni will continue to accept feedback from all relevant persons and organisations throughout the duration of the accepted EP. Where any new information is received, that is assessed as a new relevant matter or objection/claim with merit, the EP will be updated in accordance with the Management of Change process described in the EP, ensuring risks remain managed to acceptable and as low as reasonably practicable levels.

Additional consultation with relevant persons will occur in the event there is any significant change to the proposed activities.

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Appendix C2: Relevant Person Register

Appendix C2 - Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan Relevant Persons Register

Relevant Person	Target Group	Functions, Interests and Activities	Relevant Person Category OPGGS(E)Regs Section 25(1) (Table 2-1 of Appendix C1)	Basis of selection for relevant persons engagement during development of this EP
Government				
Commonwealth Government				
Australian Communications & Media Authority (ACMA) within the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDC) (Cth)	1	Administrator of submarine cable protection zones. Relevant when active activity may impact on subsea cables.	25(1)(a)	Provide advice on whether the activities may have impact on subsea cables.
Australian Fishing Management Authority (AFMA) (Cth)	1	AFMA is the Australian Government agency responsible for the efficient management and sustainable use of Commonwealth fish resources on behalf of the Australian community. AFMA manages and monitors commercial Commonwealth fishing to ensure Australian fish stocks and the Australian fishing industry is viable now and in the future.	25(1)(a)	Commonwealth Fishery boundaries extend from 3nm to the EEZ within which Eni Australia activities occur.
Australian Hydrographic Office (AHO) (Cth)	1	AHO is part of the Department of Defence, responsible for providing Australia's national charting service under the terms of SOLAS and the <i>Navigation Act 2012 (Cth)</i> . Role includes provision of nautical charting (including charts in electronic form) and associated services in support of maritime safety. Responsible for the publication and distribution of nautical charts and other information required for the safe shipping and navigation in Australian waters.	25(1)(a)	Need to be kept informed of location of activities so the notice to mariners can be published.
Australian Maritime Safety Authority (AMSA) (Cth)	1	AMSA is the statutory authority established under the Australian Maritime Safety Act 1990. Principal functions are promoting maritime safety and protection of the maritime environment, preventing and combating ship-sourced pollution in the marine environment, providing infrastructure to support safety of navigation in Australian waters, and providing national search and rescue service to the maritime and aviation sectors.	25(1)(a)	Publish radio and navigation warnings for activities in the Commonwealth marine area. AMSA provide specific information to be included in the EP (notifications).
Clean Energy Regulator (CER) (Cth)	1	The Clean Energy Regulator administers schemes legislated by the Australian Government for measuring, managing, reducing or offsetting Australia's carbon emissions, determined by climate change law.	25(1)(a)	Has administrative responsibilities for the National Greenhouse and Energy Reporting Scheme, the Emissions Reduction Fund, the Renewable Energy Target and the Australian National Registry of Emissions Units.
Department of Agriculture, Fisheries and Forestry (DAFF) - Fisheries (Cth)	1	Responsible for ensuring management processes are implemented, such as limits on catch or effort levels, and regulations of fishing methods to manage Australia's fisheries in a sustainable way. Also responsible for managing biosecurity threats to Australia.	25(1)(a)	DAFF have advised they wish to be engaged where there is possible disruption to Commonwealth fisheries.
Department of Climate Change, Energy, the Environment and Water (DCCEEW) (Cth)	3	The Department of Climate Change, Energy, the Environment and Water protects Australia's natural environment and heritage sites, helps Australia respond to climate change and carefully manages water and energy resources	25(1)(a)	Responsible for the management of Australian Marine Parks, provision of advice on management of activities located in AMPs or in proximity.
Department of Defence (DoD) (Cth)	1	Responsible for Australian defence activities. Relevant when the activity encroaches on known training areas and /or restricted airspace.	25(1)(a)	The Operational Area overlaps the training area R202G and the North Australia Exercise Area (NAXA).
Department of Industry, Science and Resources (DISR) (Cth)	4	DISR is responsible for development and reform of policy relating to the resources sector, including oil and gas.	25(1)(a)	Relevant due to influence on Commonwealth Government sector policy.
Director of National Parks, Parks Australia, part of the Department of Climate Change, Energy, the Environment and Water (DCCEEW) (Cth)	3	Parks Australia supports the Director of National Parks who has responsibility under federal environment law for six Commonwealth national parks, the Australian National Botanic Gardens and 60 Australian Marine Parks. DCCEEW requires notification of any harm or mortality to an EPBC-listed species of marine fauna.	25(1)(a)	Responsible for the management of Australian Marine Parks, provision of advice on management of activities located in AMPs or in proximity.
Maritime Border Command (MBC), part of Australian Border Force (ABF), part of the Department of Home Affairs (DHA)	1	MBC is enabled by ABF and the Australian Defence Force (ADF), supporting the whole of government effort to protect Australia's national interests by responding with assigned maritime and air assets for civil maritime security operations.	25(1)(a)	Can advise whether activity may impact on border protection activities (e.g. vessel patrols).
National Offshore Petroleum Titles Administrator (NOPTA) (Cth)	1	NOPTA is responsible for the day-to-day administration of petroleum & greenhouse gas titles in Commonwealth waters in Australia.	25(1)(a)	The Petrel activities are operating under a petroleum title, administered by NOPTA.
Northern Territory Government				

Appendix C2 - Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan Relevant Persons Register

Relevant Person	Target Group	Functions, Interests and Activities	Relevant Person Category OPGGs(E)Regs Section 25(1) (Table 2-1 of Appendix C1)	Basis of selection for relevant persons engagement during development of this EP
Aboriginal Areas Protection Authority (AAPA)	4	AAPA is an independent statutory authority established under the Northern Territory Aboriginal Sacred Sites Act, responsible for overseeing the protection of Aboriginal sacred sites on land and sea across the whole of Australia's Northern Territory.	25(1)(a)	NT government agency with a function to protect Aboriginal sacred sites on both land and sea. Can provide information on registered sacred sites that may lie within the EMBA.
Department of Environment, Parks and Water Security (DEPWS)	1	Protect the environment and natural resources in the Northern Territory, including marine fauna management.	25(1)(a)	Relevant when activities may impact on marine or coastal values (such as an oil spill).
Department of Industry, Tourism and Trade (DITT) - NT Fisheries	1	The Department of Industry, Tourism and Trade is the Northern Territory coordinating agency for economic and industry development. The Department administers and regulates petroleum tenure and activities in within the Territory's coastal waters. This includes petroleum resource exploration and development and the construction and operation of oil and gas facilities and transmission pipelines. The Department manages Northern Territory commercial fisheries. Relevant when the activity has the potential to impact on fisheries resources in Northern Territory managed fisheries.	25(1)(a)	State responsibility for fishing and offshore activity where operations will traverse to and from Operational Area. Some NT fisheries (whose boundaries may extend beyond NT waters) are located in the ZPI. Impacts to commercial fishing in the NT from activities described in the EP.
Department of Transport - Marine Safety Branch (NT)	1	Manage oil pollution preparedness for, and response in, NT waters.	25(1)(a)	Participant in response exercises and potential actual incidents.
Northern Territory Environment Protection Authority (NTEPA)	4	NTEPA is an independent authority established under the Northern Territory Environment Protection Act. NTEPA provides advice on the environmental impacts of development proposals and advice and regulatory services to encourage effective waste management, pollution control and sustainable practices.	25(1)(a)	NT government agency with a function to regulate pollution events in the NT.
Northern Territory Regional Harbourmaster, part of DIPL	4	Responsible for moorings in the Port of Darwin. Relevant when the activity could impact on Port operations.	25(1)(a)	Relevant when the activity could impact on Port operations (such as an oil spill).
West Australian Government				
Department of Biodiversity, Conservation and Attractions (DBCA)	1	Manage State marine parks and reserves and protected marine fauna and flora.	25(1)(a)	Relevant when activities undertaken outside of a marine park may impact on the values within a marine park (such as an oil spill).
Department of Jobs, Tourism, Science and Innovation (JTSI)	4	JTSI is a Western Australian Government statutory authority responsible for promoting Western Australia as a holiday destination.	25(1)(a)	Potential influencer if required, relationship build against future activities.
Department of Energy, Mines, Industry, Regulations and Safety (DEMIRS)	1	The mission of DEMIRS is to support a safe, fair and responsible future for the Western Australian community, industry and resources sector. The DEMIRS Resource and Environmental Regulation Group is responsible for regulating one of Western Australia's largest industry sectors, and plays a critical role in building Western Australia's economy while ensuring the State's resources are developed in a sustainable and responsible manner.	25(1)(a)	Department of responsible WA Minister who sits on the Offshore Petroleum Joint Authority. Planned activities occur in the Commonwealth marine environment offshore areas on the border of the NT and WA. Notifications may be required.
Department of Planning, Lands, Heritage (DPLH)	4	Protect aboriginal heritage, assist with compliance with the Aboriginal Heritage Act 1972 and provide access to heritage information.	25(1)(a)	Can advise on Registered Aboriginal sites and known onshore places of heritage that may lie within the EMBA. Relevant if the activity results in impacts to Aboriginal heritage (such as an oil spill).
Department of Primary Industries and Regional Development (DPIRD)	1	A primary responsibility of the DPIRD is to conserve, sustainably develop and share the use of Western Australia's aquatic resources and their ecosystems for the benefit of present and future generations, through managing fisheries and aquatic ecosystems, assessment and monitoring of fish stocks, enforcement and education, biosecurity management and licensing commercial and recreational fishing activity, including commercial aquaculture.	25(1)(a)	Can provide information on marine protected areas/protected species and fisheries and management controls implemented to manage marine pest risks associated with the activities.
Department of Transport (DoT)	1	In accordance with the Western Australian Emergency Management Act 2005 (the Act) and Emergency Management Regulations 2006 (the Regulations), the WA DoT is the Hazard Management Agency (HMA) for the Marine Oil Pollution (MOP) hazard in State waters. The MOP hazard is prescribed in the Regulations as an; 'actual or impending spillage, release or escape of oil or an oily mixture that is capable of causing loss of life, injury to a person or damage to the health of a person, property or the environment'.	25(1)(a)	Informs the development of the Petrel OPEP - preparedness and response as they relate to State Control Agency functions.
Department of Transport - Marine Safety Branch (WA)	1	Manage oil pollution preparedness for, and response in, WA waters.	25(1)(a)	Participant in response exercises and potential actual incidents.
Northern Territory Local Government				

Appendix C2 - Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan Relevant Persons Register

Relevant Person	Target Group	Functions, Interests and Activities	Relevant Person Category OPGGS(E)Regs Section 25(1) (Table 2-1 of Appendix C1)	Basis of selection for relevant persons engagement during development of this EP
West Daly Regional Council - Wadeye	3	A local government area of the Northern Territory that aim to deliver quality services to community and Tadtional Owner group of Wadeye	25(1)d	Local government authority for engaging with communities and groups in the Wadeye region
Western Australian Local Government				
Shire of Wyndham-East Kimberley	4	The Shire of Wyndham-East Kimberley is a local government area in the Kimberley region of Western Australia.	25(1)d	Local government authority for engaged communities.
Fisheries				
National Fisheries				
Austral Fisheries	2	Austral Fisheries is one of Australia's largest integrated commercial fishing companies. They operate 11 of the 52 licensed vessels in the Northern Prawn Fishery.	25(1)d	Integrated commercial fishing company that may be operating in the Operational Area.
Commonwealth Fisheries Association (CFA)	1	Peak body representing the collective rights, responsibilities and interests of a diverse commercial fishing industry in Commonwealth regulated fisheries. CFA represents the interests of commercial fishers with licences in Commonwealth waters.	25(1)d	Represent commercial fishers with fishing management areas that may overlap with the Operational Area, ZPI and EMBA.
Northern Prawn Fishery (NPF) Industry Pty Ltd	2	The NPF Industry Pty Ltd is a collective of trawler operators, processors and marketers acting together as a single voice for the industry in the Northern Prawn Fishery, which occurs between Cape York to the Kimberley's.	25(1)d	Fishery management area overlaps the Operational Area, ZPI and EMBA. The Operational Area falls within a low effort fishing intensity area.
Pearl Producers Australia (PPA)	2	Peak representative organisation of the Australian South Sea Pearling Industry.	25(1)d	Represent WA and NT pearling companies operating within the EMBA.
Raptis & Sons	1	Raptis owns and operates 15 commercial fishing vessels in there northern prawn and NT demersal fishery zones.	25(1)d	Privately owned integrated fishing company that may be operating in the Operational Area.
Seafood Industry Australia (SIA)	2	Seafood Industry Australia is committed to ensuring there is appropriate consultation between the Australian seafood industry and oil and gas companies on matters including impact, access, regulation and the long-term impacts to fish-stocks from petroleum-related activities.	25(1)d	Represent commercial fishers operating in the ZPI and EMBA.
Tuna Australia (Industry association)	3	TA represents the interests of the Western Tuna and Billfish Fishery.	25(1)d	Potential activities within the OA, ZPI and EMBA that may be affected in the unlikely event of a hydrocarbon spill.

Appendix C2 - Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan Relevant Persons Register

Relevant Person	Target Group	Functions, Interests and Activities	Relevant Person Category OPPGS(E)Regs Section 25(1) (Table 2-1 of Appendix C1)	Basis of selection for relevant persons engagement during development of this EP
Northern Territory Fisheries				
Northern Territory Seafood Council (NTSC) Full NT Seafood Council Membership is through ownership of a professional fishing licence in the Northern Territory. These licenses included : Bait Net Fishery Offshore Net & Line Fishery Spanish Mackerel Fishery Coastal Line Fishery Demersal Fishery Barramundi Fishery Pearl Oyster Fishery 67 individual license holders represented by NTSC	1	Represents the seafood industry in the NT. Represent NT fisheries operating in the EMBA. NTSC is the peak representative body for the wild catch, aquaculture and trader/processor seafood sectors in the Northern Territory.	25(1)d	Fishing management areas that members operate in overlaps with the Operational Area, ZPI and EMBA.
Northern Wildcatch Seafood Australia (NWSA)	3	NWSA is an Australian company specialising in catching and selling tropical fin fish such as snapper, emperor and cod and the provision of charter services to the oil and gas sector, government and research institutions. NWSA ships fresh product all over Australia from the Port of Darwin, with three vessels fishing throughout the year. May operate within the EMBA.	25(1)d	Commercial fishery that may be operating in the EMBA
Western Australian Fisheries				
Western Australia Fishing Industry Council (WAFIC) Kimberley Prawn Managed Fishery Kimberley Crab Fishery Kimberley Gillnet & Barramundi Fishery Mackerel Managed Fishery Northern Demersal Scalefish Managed Fishery Marine Aquarium Fishery Pearl Oyster Managed Fishery	2	Peak industry body representing professional fishing, pearling and aquaculture enterprises, processors and exporters in Western Australia	25(1)d	Represent commercial fishers with license areas that may overlap the EMBA.
Individual Fishing Licensees by Fishery				
Aboriginal Coastal Fishers (5 individual licensees)	2	Individual fishing licensees that may be operate in the Operatational Area (OA), Zone of Potential Impact (ZPI) and environment that may be affected (EMBA).	25(1)(a)	Individuals conducting commercial activities that may intersect, or be impacted by, the OA, ZPI or EMBA
Coastal Line Fishers (35 individual licensees)	2	Individual fishing licensees that may be operate in the Operatational Area (OA), Zone of Potential Impact (ZPI) and environment that may be affected (EMBA).	25(1)(a)	Individuals conducting commercial activities that may intersect, or be impacted by, the OA, ZPI or EMBA
Demersal Fishers (15 individual licensees)	2	Individual fishing licensees that may be operate in the Operatational Area (OA), Zone of Potential Impact (ZPI) and environment that may be affected (EMBA).	25(1)(a)	Individuals conducting commercial activities that may intersect, or be impacted by, the OA, ZPI or EMBA
Kimberley Prawn Fishers (1 licensee)	2	Individual fishing licensees that may be operate in the Operatational Area (OA), Zone of Potential Impact (ZPI) and environment that may be affected (EMBA).	25(1)(a)	Individuals conducting commercial activities that may intersect, or be impacted by, the OA, ZPI or EMBA
Mollusc Fishers (1 licensee)	2	Individual fishing licensees that may be operate in the Operatational Area (OA), Zone of Potential Impact (ZPI) and environment that may be affected (EMBA).	25(1)(a)	Individuals conducting commercial activities that may intersect, or be impacted by, the OA, ZPI or EMBA
Offshore Net & Line Fishers (6 individual licensees)	2	Individual fishing licensees that may be operate in the Operatational Area (OA), Zone of Potential Impact (ZPI) and environment that may be affected (EMBA).	25(1)(a)	Individuals conducting commercial activities that may intersect, or be impacted by, the OA, ZPI or EMBA
Timor Reef Fishers (3 individual licensees)	2	Individual fishing licensees that may be operate in the Operatational Area (OA), Zone of Potential Impact (ZPI) and environment that may be affected (EMBA).	25(1)(a)	Individuals conducting commercial activities that may intersect, or be impacted by, the OA, ZPI or EMBA
Western Deepwater Trawl (1 licensee)	2	Individual fishing licensees that may be operate in the Operatational Area (OA), Zone of Potential Impact (ZPI) and environment that may be affected (EMBA).	25(1)(a)	Individuals conducting commercial activities that may intersect, or be impacted by, the OA, ZPI or EMBA

Appendix C2 - Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan Relevant Persons Register

Relevant Person	Target Group	Functions, Interests and Activities	Relevant Person Category OPGGs(E)Regs Section 25(1) (Table 2-1 of Appendix C1)	Basis of selection for relevant persons engagement during development of this EP
Aboriginal and Torres Strait Islander/ First Nations Community				
National				
Indigenous Land and Sea Corporation (ILSC)	2	Commonwealth organisation. Traditional Owners engagement, cultural understanding and sea country knowledge established in 1995. Custodian of funds for indigeous people who might not get funds.	25(1)(a)	Identification of sea country that may fall within EMBA
Northern Australia Indigenous Land & Sea Management Alliance (NAILSMA)	4	NAILSMA is an Indigenous led not-for-profit company operating across northern Australia, working to assist Indigenous people manage their country sustainably for future generations, by providing Indigenous leadership in the delivery of large-scale and complex programs that meet the environmental, social, cultural, and economic needs of Indigenous people across northern Australia. Relevant when the activity could impact on the coastline, coastal waters and sea country.	25(1)d	Relevant persons whose function may indirectly be impacted in emergency conditions .
National Indigenous Australians Association	3	Commonwealth government agency responsible to the Minister for Indigenous Australians. NIAA lead and influence change across government to ensure Aboriginal and Torres Strait Islander peoples have a say in the decisions that affect them.	25(1)(d)	Represent Traditional Owners interests and assistance with consultation.
Northern Territory				
Larrakia Development Corporation	3	The LDC is regarded as one of Australia's leading commercial Aboriginal organisations. Working for all Larrakia., as Trustee of the Larrakia Development Trust.	25(1)d	Traditional Owners who may have sea country that overlaps the EMBA. Located in an area of long term Eni operational presence. Includes Kenbi Rangers.
Larrakia Nation Aboriginal Corporation	3	The Larrakia Nation Aboriginal Corporation was established in 1997 through the Northern Land Council, to provide a corporate identity for Larrakia people to uphold Native Title claims, to represent the Traditional Owners of the Darwin region and to speak on behalf of Larrakia people while delivering community and outreach services to the broader Darwin community, including land and sea Rangers. The Larrakia Rangers work across Larrakia land and sea country, which comprises the greater Darwin region west across the Cox Peninsula and east to the Adelaide River.	25(1)d	LNAC represents Traditional Owners who may have sea country that overlaps the EMBA. Located in an area of long term Eni operational presence.
Northern Land Council	3	The NLC is an independent statutory authority of the Commonwealth, responsible for assisting Aboriginal peoples in the Top End of the Northern Territory to acquire and manage their traditional lands and seas.	25(1)d	The NLC's Native Title Act statutory area of responsibility may overlap the EMBA.

Appendix C2 - Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan Relevant Persons Register

Relevant Person	Target Group	Functions, Interests and Activities	Relevant Person Category OPGGS(E)Regs Section 25(1) (Table 2-1 of Appendix C1)	Basis of selection for relevant persons engagement during development of this EP
Thamarrurr Development Corporation (TDC)	3	TDC is a not-for-profit corporate entity owned by members of the Wangka, Lirrga and Tjanpa peoples. TDC has been established by the 20 clans of the Thamarrurr Region, to represent them in relation to business, socio-economic development, employment and training.	25(1)d	The TDC represents Thamarrurr people (in an area near the EMBA) which is made up of the following Traditional Owner family groups: <ul style="list-style-type: none"> - Rak Wudipuli - Rak Thinti - Rak Perrederr - Rak Nuthunthu - Rak Nganthawudi - Rak Namarluk - Rak Nadirri - Rak Merrepen - Rak Kuy - Rak Kungarlbarl - Rak Kulingmirr - Rak Kubiyirr - Rak Kimmu - Rak Angileni - Yek Diminin - Yek Maninh - Yek Nangu - Yek Ngudanimarn - Yek Wunh - Yek Yederr <p>There may be areas of sea country and nearshore Wadeye, that may overlap or be connected with the EMBA.</p>
Tiwi Land Council (TLC)	3	The Tiwi Land Council represents all Tiwi people in the protection of our land, sea and environment, while at the same time supporting sustainable economic development to improve Tiwi lives through employment, income, education and health opportunities.	25(1)e	The TLC represents Tiwi Island people (in an area near the EMBA) which is made up of the following Traditional Owner family groups: <ul style="list-style-type: none"> - Jikilaruwu - Malawu - Mantiyupwi - Marrikawuyanga - Munupi - Yimpinari - Wurankuwu - Wulirankuwu <p>There may be areas of sea country and nearshore Tiwi Islands, that may overlap or be connected with the EMBA.</p>
Top End (Default PBC/CLA) Aboriginal Corporation RNTBC	3	PB	25(1)d	Traditional Owner group with potential sea country that may overlap the EMBA.
Western Australia				
Balangarra Aboriginal Corporation	3	Kimberley Coastal PBC. Administers land on behalf of the Balangarra People. Located in the Northern Kimberley.	25(1)d	Traditional Owner group with potential sea country that may overlap the EMBA.
Dambimangari Aboriginal Corporation	3	Kimberley Coastal PBC. Represents the Traditional Owners of the Wunaamin Miliwundi Ranges East of Broome. The EMBA extends close to declared sea country.	25(1)d	Traditional Owner group with potential sea country that may overlap the EMBA.
Kalumburu Aboriginal Corporation	3	Manages the Native Title rights and interests of the Kulumburu people.	25(1)d	Traditional Owner group with potential sea country that may overlap the EMBA.
Kimberley Land Council	3	Peak Indigenous body in the Kimberley region.	25(1)d	The KLC's Native Title Act statutory area of responsibility may overlaps the EMBA.

Appendix C2 - Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan Relevant Persons Register

Relevant Person	Target Group	Functions, Interests and Activities	Relevant Person Category OPGGS(E)Regs Section 25(1) (Table 2-1 of Appendix C1)	Basis of selection for relevant persons engagement during development of this EP
MG Corporation	3	Indigenous organisation in the East Kimberley, MG Coporation is committed to building a strong economic and social base for MG people while protecting and enhancing MG culture and heritage. Includes the Kimbeley Coastal PBC.	25(1)d	Traditional Owner group with potential sea country that may overlap the EMBA.
Wunambamal Gaambera Aboriginal Corporation	3	Manages the Native Title rights and interests of the Wunambal Gaambera people.	25(1)d	Traditional Owner group with potential sea country that may overlap the EMBA.
Business				
National Business				
Moonson Aquatics	4	Monsoon Aquatics are a world leading supplier of premium hand-picked Australian Coral and Marine life. With state of the art facilities in Darwin, Cairns and Bundaberg, collection capability in the North, East and West of Australia and a growing aquaculture program, Monsson Aquatics supplies an unmatched range of coral to retailers in Australia and wholesalers and public aquaria all around the world. May operate within the EMBA.	25(1)d	Could be affected in the result of an hydrocarbon spill. May operate within the EMBA
Vocus	2	Relevant due to presence of North West Cable system in vicinity of Joseph Bonaparte Gulf	25(1)e	Relevant due to presence of North West Cable system in vicinity of Joseph Bonaparte Gulf.
Northern Territory Businesses				
Anglers Choice Fishing Safaris	4	Anglers Choice Fishing Safaris operates from Dundee Beach on the Cox Peninsula, providing offshore fishing experiences. May operate within the EMBA.	25(1)e	Potential to be affected in the case of an hydrocarbon spill.
Arafura Bluewater Charters	4	Arafura Bluewater Charters operates from Darwin, specialising in bluewater reef and game fishing charters. May operate within the EMBA.	25(1)e	Potential to be affected in the case of an hydrocarbon spill.
Cannon Charters	4	Cannon Charters operates from Darwin, offering multi-day fishing experiences along the Northern Territory and Kimberley coast. May operate within the EMBA.	25(1)e	Potential to be affected in the case of an hydrocarbon spill.
Chamber of Commerce Northern Territory	4	Regional representative organisation representing the interests of local business	25(1)e	
Darwin Harbour Fishing Charters	4	Darwin Harbour Fishing charters operates from Darwin, providing offshore and onshore fishing experiences. May operate within the EMBA.	25(1)e	Potential to be affected in the case of an hydrocarbon spill.
Darwin Port	1	Darwin Port is operated by Darwin Port Operations Pty Ltd which is part of the Landbridge Group. The Landbridge Group is a private company based in Rizhao city in Shandong Province in China, operating businesses in China and Australia. The Darwin Port operates commercial wharf facilities at East Arm Wharf and the cruise ship terminal at Fort Hill Wharf.	25(1)d	May provide a function (i.e., spill response activities) in the event of emergency conditions.
Darwin Red Devil Fishing Charters	4	Red Devil Fishing Charters operates from Darwin, providing offshore fishing experiences. May operate within the EMBA.	25(1)e	Potential to be affected in the case of an hydrocarbon spill.
Dundee Beach Fishing Charter	4	Dundee Beach Fishing Charters operates from Dundee Beach on the Cox Peninsula, providing offshore fishing experiences. May operate within the EMBA.	25(1)e	Potential to be affected in the case of an hydrocarbon spill.
Equinox Fishing Charters	4	Equinox Fishing Charters operates from Darwin, providing offshore fishing experiences. May operate within the EMBA.	25(1)e	Potential to be affected in the case of an hydrocarbon spill.
Fish Darwin	4	Fish Darwin operates from Darwin, providing offshore fishing experiences. May operate within the EMBA.	25(1)e	Potential to be affected in the case of an hydrocarbon spill.
Northern Territory Guided Fishing Industry Association (NTGFIA)	2	NTGFIA is the industry body for guided fishing and recreational fishers. The Guided Fishing activity includes the use of mother ships moored offshore from which multi-day recreational fishing expeditions are based.	25(1)e	Potential to be affected in the case of an hydrocarbon spill.
NT Port andMarine	1	Responsible for the Darwin Port	25(1)d	Infrastructure used by contractors.
Offshore Boats Fishing Charter	4	Offshore Boats Fishing Charters operates from Darwin, providing offshore fishing experiences. May have tourism activities that occur within the EMBA.	25(1)e	Potential to be affected in the case of an hydrocarbon spill. May have tourism activities that occur within the EMBA.
Sea Darwin	4	Recreational activity offshore	25(1)e	Operator in the vicinity of marine traffic and within potential spill monitoring. May have tourism activities that occur within the EMBA.
The Amateur Fishermen's Association of the Northern Territory (AFANT)	3	AFANT represents recreational fishers in the Northern Territory through membership and input on a range of fisheries and natural resource management committees.	25(1)d	Potential to be affected in the case of an hydrocarbon spill.

Appendix C2 - Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan Relevant Persons Register

Relevant Person	Target Group	Functions, Interests and Activities	Relevant Person Category OPGGs(E)Regs Section 25(1) (Table 2-1 of Appendix C1)	Basis of selection for relevant persons engagement during development of this EP
Yknot Fishing Charters	4	Yknot Fishing Charters operates from Darwin, providing fishing charters to as far as the Tiwi Islands and as far West as the Peron islands. May operate within the EMBA.	25(1)e	Potential to be affected in the case of an hydrocarbon spill.
Western Australian Businesses				
Cambridge Gulf Limited (CGL)	4	CGL is an East Kimberley based company that provides shipping, fuel and logistics services across Northern Australia.	25(1)e	Potential activities in the Operational Area, ZPI and EMBA.
East Kimberley Chamber of Commerce and Industry	4	Regional representative organisation representing the interests of local business.	25(1)e	Community business representative organisation.
Marine Tourism Association of WA (MTWA)	3	Represents the tourism industry in WA (the fishing charter sector). Relevant when the activity could impact on coastal waters and coastlines.	25(1)d	Tourism activities could be affected in the result of an hydrocarbon spill.
Recfish West	3	Peak body representing recreational fishers in WA. Recfishwest represents the interests of Western Australia's recreational fishing sector.	25(1)d	Represents recreational fishers who may operate in the EMBA
Unreel Adventure Safaris	4	Recreational activity offshore	25(1)e	Operator in the vicinity of marine traffic and within potential spill monitoring. May have tourism activities that occur within the EMBA.
Wyndham Wildcatch	3	Commercial fishing activity offshore	25(1)d	Potential activity within the EMBA.
Oil & Gas				
Beach Energy	1	JV partner in permit NT/RL1.		JVP for this activity
EOG Resources Australia	3	Titleholder and operator of permit WA-488-P	25(1)d	Neighbouring industry activity notification.
INPEX	2	Relevant due to activities in the region. Neighbouring industry activity notification (G-7-AP).	25(1)e	Neighbouring industry activity notification.
Melbana Energy	3	Titleholder of WA-544-P and NT/P87	25(1)d	Neighbouring industry activity notification.
SANTOS	1	Titleholder JVP for NT/P88; WA-548-P; NT/RL1 and WA-6-R titles (Also JVP Titleholder to Beach Energy (Operator) of WA-454-P) (Also Operator for G-11-AP with PRISM Darwin Pipeline; Chevron)	25(1)e	JVP for this activity
NGO's				
Australian Marine Conservation Society NT	4	Territory branch for the national organisation working to protect the ocean environment and marine life. Independent environmental conservation organisation and charity that works to protect ocean wildlife along the Northern Territory coastline, waters and seas.	25(1)e	Has an interest in protecting marine biodiversity and ecosystems. Can provide advise on the marine parks and sanctuary zones within the EMBA for threatened and at risk species.
Environs Kimberley	4	Environs Kimberley is the peak environmental NGO for the Kimberley region and is dedicated to looking after the health of the land and waters of the region.	25(1)e	Has an interest in protecting marine biodiversity and ecosystems.
Greenpeace Australia Pacific	4	GAP is a peak conservation body with an interest in activities that may affect the marine environment.	25(1)e	Has an interest in protecting marine biodiversity and ecosystems.
Sea Turtle Foundation	4	Non-profit, non-government group based in Australia working to protect sea turtles through research, education and action.	25(1)e	Has an interest in protecting marine biodiversity and ecosystems.
Wilderness Society	4	Community-based, not-for-profit non-governmental environmental advocacy organisation. TWS is a peak conservation body with an interest in activities that may affect the marine environment.	25(1)e	Has an interest in protecting marine biodiversity and ecosystems.
World Wildlife Fund (WWF)	4	WWF is a peak conservation body with an interest in activities that may affect the marine environment.	25(1)e	Has an interest in protecting marine biodiversity and ecosystems.
Research				
Northern Territory Research				
Australian Marine Sciences Association (NT Branch)	4	Educational research institution, megafauna and protected species sightings.	25(1)e	Might want to study marine formation over the time that the wells have been there

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Appendix C3: Consultation Materials

APPENDIX C3

PETREL-3 & PETREL-4 MONITORING & DECOMMISSIONING ENVIRONMENT PLAN CONSULTATION TOOLS

CONTENTS

1. Activity Flyer
 - a. Consultation conclusion 2 August 2024
 - b. Consultation extension to conclusion 28 August 2024
2. Advertising
 - a. Events
 - i. East Kimberley Chamber of Commerce & Industry Business After Hours
 - ii. Northern Territory Seafood Council
 - b. Newsletters
 - i. East Kimberley Chamber of Commerce & Industry
 - c. Newspaper
 - i. Kimberley Echo
 - ii. NT News
 - iii. WA News
 - d. Posters
 - e. Radio
 - i. 60 Second Production – (File embedded in section to follow - click to hear production example)
 - ii. First Nations Radio FM94.5
 - iii. First Nations Radio AR913
 - iv. Mix 104.9 Darwin
 - v. Palmerston FM 88
3. Landing Page
 - a. Active link - <https://petreleni.com.au/> Content available online
4. Presentations
 - a. Customised cover slides
 - b. Full presentation example
 - c. Customised Business After Hours Event Presentation

ENI PETREL-3 AND PETREL-4 MONITORING AND DECOMMISSIONING

ACTIVITY FLYER

The following content represents the two versions of the activity flyer with consultation conclusion dates of:

- 2 August 2024
- 28 August 2024

STAKEHOLDER CONSULTATION

Petrel-3 and Petrel-4 Decommissioning
June 2024

PETREL-3 AND PETREL-4 Decommissioning

Eni through its subsidiary, Eni Energy Bonaparte Pty Ltd, titleholder of the Petrel Gas Field (Petrel) in the Bonaparte Basin in North Western Australia. The field is located in permits NT/RL1 and WA-6-R, approximately 260 km WSW of Darwin and ~170 km offshore of the WA coast. For the purposes of decommissioning, the activity is limited to NT/RL-1.

Within the NT/RL-1 permit, two wells (Petrel-3 and Petrel-4) have been identified as suspended since the 1980s, with wellheads remaining in-situ. The wells were suspended in accordance with the regulations at the time, with barriers across and above the reservoir, including the testing of the barriers. The reservoir is isolated in both wells and the sub-hydrostatic pressure of the reservoir prevents the wells from flowing in their current condition. **Loss of well control is not considered a credible risk.**

Eni plans to decommission these wells according to *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth) (Environment Regulations)* and are preparing the Environment Plan for Decommissioning to submit to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

As required by NOPSEMA, Eni must consult with people whose functions, interests and activities may be affected by the decommissioning of wells Petrel-3 and Petrel-4. The *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023* refers to such people as relevant persons.

This fact sheet provides you with information to determine if you are a relevant person for the decommissioning activity of Petrel-3 and Petrel-4.

You may be a relevant person if the decommissioning of Petrel wells may affect:

- your spiritual or cultural connection to the land and sea country
- your business and recreational activities, such as fishing and tourism
- the functions or responsibilities of your organisation.

FEEDBACK

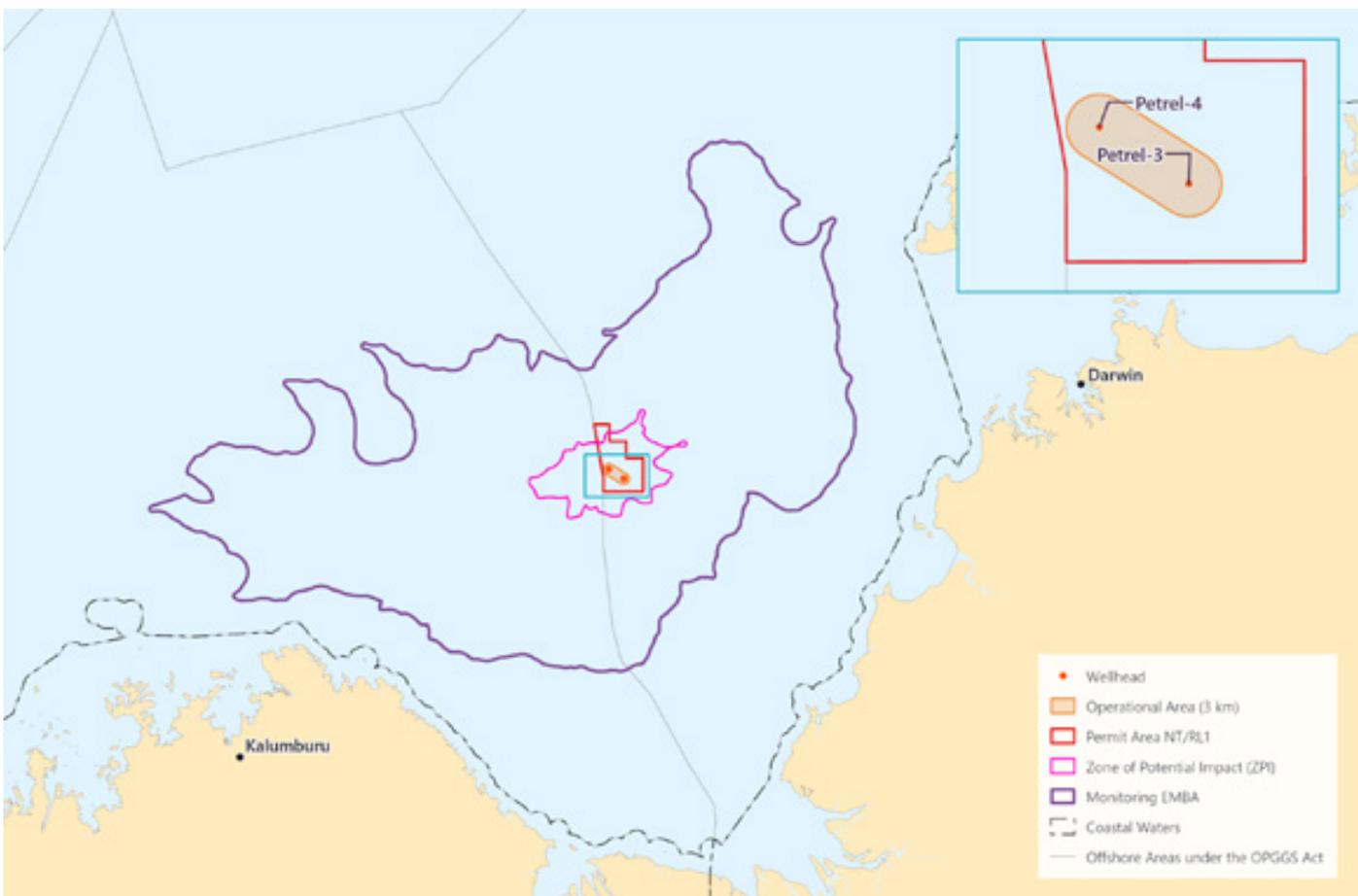
If you think you may be a relevant person, please review this information and provide any feedback to Eni. Additional information can be found online at petreleni.com.au. You are invited to submit your advice on control measures to mitigate potential impact (if any) that the proposed activities may have on you. We are seeking feedback by **2 August 2024**.

CONTACT ENI

Email: info@petreleni.com.au
Phone: 1300 155 616
Post: PO Box 6862
East Perth WA 6892



Figure 1: Operational area, ZPI and EMBA



LOCATION

The Petrel-3 and Petrel-4 wellheads are located in Commonwealth waters approximately 260 km WSW of Darwin, approximately 150 km from closest shore, in a water depth of approximately 95m.

Location details are summarised in **Table 1**. A location map is provided in **Figure 1**.

TIMING

The activities will potentially occur in any season between 2025 and 2027.

The actual timing of the activities will depend on a number of factors, including vessel and rig availability and weather conditions.

ACTIVITIES AND DURATION

To ensure that the condition of the seabed equipment on the wells remains unchanged, and to plan for the plug and abandonment campaign, Eni proposes the following activities as part of the Petrel-3 and Petrel-4 decommissioning strategy.

Eni is assessing the environmental benefits of leaving whole or partial wellheads in-situ, for consideration by NOPSEMA.

Table 2 – Planned Activities

Pre-abandonment activities	Activities summary	Duration (both wellheads)
General Visual Inspection (GVI) survey campaign(s)	Annual GVI survey of the two suspended wells, including potential cleaning ¹ of the well equipment to allow detailed inspection.	Up to 2 weeks. Frequency will be annual, with no more than 24 months between surveys.
Geotechnical and Geophysical survey campaign	Geophysical investigation to evaluate the sub-seabed conditions. Geotechnical survey to support a jack-up MODU.	Geophysical survey: up to 40 days Geotechnical survey: up to 20 days
Pre-abandonment vessel campaign	High-pressure cleaning ¹ of the wellhead. Removal of the corrosion cap. 3D external scan by camera or laser to ensure integrity. Corrosion cap replacement.	Up to 20 days.
Abandonment activities	Activities summary	Duration (both wellheads)
P&A Campaign ^{2&3}	Permanent plug and abandonments of the Petrel-3 and Petrel-4.	Up to 60 days (~30 days per well).
Post Abandonment activities	Activities summary	Duration
As-left survey(s)	GVI survey to demonstrate that the decommissioning activities proposed have been completed and requirements have been met	2 days per well

1. Cleaning of the wellheads may take place at any time prior to abandonment activities. Cleaning may be completed using high pressure seawater.

2. Intent is to do both wells in a single campaign, potential for second campaign as contingency.

3. Mobile offshore drilling unit configurations are currently under consideration.

Table 1: Location Details

Activity Details		
Permit	NT/RL-1	
	Datum: GDA94	
Petrel-3 well location	Latitude:	12° 56' 2.071" S
	Longitude:	128° 34' 14.671" E
	Easting:	453,438 m E
	Northing:	8,570,134 m N
Petrel-4 well location	Latitude:	12° 53' 13.194" S
	Longitude:	128° 29' 45.557" E
	Easting:	445,319 m E
	Northing:	8,575,307 m N
Operational Area	The Operational Area is a defined area within which all petroleum activities associated within this EP occur, and which allows impact assessment of those activities. It includes the extent of all planned activities within the EP and is defined as a 3 km radius around the two wells and a 3 km wide corridor between them. Refer to Figure 1.	
Nearest proximity to Key Regional Features	Regional Feature	Petrel-3
	Darwin	~ 251 km
	Yelcherr Gas Plant	~ 173 km
	Oceanic Shoals Marine Park	~ 48 km
	Closest Mainland Point	~ 37 km
Worst case hydrocarbon spill		Petrel-4
		~ 258 km
	~ 150 km	~ 158 km
	Maximum credible volume ~300m ³ marine diesel in the event of a ruptured fuel tank (full).	

ENVIRONMENT THAT MAY BE AFFECTED (EMBA)

The environment that may be affected (EMBA) is the area within which the operations activities could have an environmental impact. The environmental impacts from planned activities will mostly be limited to within the operational area. The zone of potential impact (ZPI) or moderate exposure zone is smaller than the EMBA and may be representative of an area of biological impact from hydrocarbons.

The outermost boundary of the EMBA is based on an accidental release of marine diesel oil (MDO) to the environment in the unlikely event of a vessel collision damaging a fuel tank. This event is highly unlikely to occur and Eni implements a range of measures to prevent it. **Loss of well control is not considered a credible risk.** The EMBA is shown in **Figure 1**.

Scientific modelling is used to assess the potential impacted zone should an unplanned spill occur (eg: vessel collision), and is referred to as the EMBA. This analysis combines hundreds of modelling simulations during a range of wind and current conditions. Refer to [NOPSEMA's website](#) for information on oil spill modelling.

ENVIRONMENTAL MANAGEMENT

Eni has assessed the environmental impacts and risks for the decommissioning activity within the EP. A summary of the assessment and the proposed management measures to reduce the impacts and risks to as low as reasonably practicable and to an acceptable level are provided in **Table 3**.

Further details will be provided in the Petrel-3 and Petrel-4 Decommissioning Environment Plan, which NOPSEMA will publish on their website once the plan is submitted.

STAKEHOLDER COMMENT AND FEEDBACK

Eni is seeking comment from relevant persons and stakeholders in relation to any potential impact that the proposed activities, covered by the Petrel-3 & Petrel-4 Decommissioning Environment Plan, may have on your functions, interests or activities as a relevant person.

If you wish to provide any comment or feedback on these activities, please do so by **2 August 2024** to the contact details provided. If you know anyone who may be a relevant person, we ask that you make them aware of our consultation.

Eni treats all information provided by you as confidential, with the exception of providing information to NOPSEMA. Eni is required to provide NOPSEMA with details of all correspondence with relevant persons, including copies of written correspondence. NOPSEMA routinely publish environment plans under assessment or accepted on their website.

Personal information (other than name and contact details) is sensitive information and will not be published in the EP. You can request that any material provided to Eni, including your name and contact details, be treated as sensitive information not to be published in the Petrel-3 and Petrel-4 Decommissioning Environment Plan.

All comments provided will be considered in the Petrel 3 & Petrel-4 Decommissioning Environment Plan revision to be submitted to NOPSEMA, in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*. Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA in order for this information to remain confidential to NOPSEMA.

If you wish to opt out of our consultation process after reviewing the information in this letter, please let us know via email.

Please consider NOPSEMA's advice in Consultation on Offshore Petroleum Environment Plans – Information can also be found at the project landing page at **petreleni.com.au**.

CONTACT ENI

Email: info@petreleni.com.au
Phone: 1300 155 616
Post: PO Box 6862
East Perth WA 6892



Table 3 - Summary of Potential Key Environmental Impact/Risks and Management Measures

Aspect	Description	Potential Impact / Risk	Proposed Management
Planned Impacts			
Seabed disturbance	<p>Seabed disturbance will be caused by:</p> <ul style="list-style-type: none"> • seabed sampling during the geotechnical survey. • positioning of the mobile offshore drilling unit (MODU), if a moored or jack-up MODU is used. • removal of marine growth on the wellhead. • installation of temporary winches on the seabed. • cutting of the wellhead. • retrieval of the wellhead and guide base/s from the seabed. 	<p>Seabed disturbance will cause a localised and temporary reduction in water quality, and disturbance to benthic habitat.</p> <p>The maximum seabed disturbance footprint is from MODU positioning, if a moored MODU is used.</p> <p>In this case, up to 12 anchors and mooring lines will be laid, giving a maximum footprint of 1,944 m² per well.</p> <p>There is no sensitive benthic habitat, Marine Parks or Key Ecological Features (KEFs) in the operational area.</p>	<ul style="list-style-type: none"> • MODU move and anchoring procedure (including mooring analysis). • All deployed equipment will be recovered. • Post-activity ROV survey will be conducted.
Physical interaction – Other marine users	<p>The physical presence of the MODU and movement of vessels within the operational area can interfere with other marine users by causing displacement from the area during activities.</p>	<p>The operational area is a 3 km radius around the two wells and the corridor between them. There is no formal Petroleum Safety Zone; however, exclusion and cautionary zones will be in place during activities.</p> <p>Activities in the operational area are of short duration, expected to last between 2 to 60 days.</p> <p>Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area.</p> <p>There are no tourism or recreational fishing activities expected in the operational area due to distance from shore, and no Maritime Defence Exercise areas.</p>	<ul style="list-style-type: none"> • Navigation equipment and procedures, in accordance with legislative requirements. • Maritime notices will be complied with. • All activities will occur within the operational area. • Other relevant notifications may be made, as requested by stakeholders. • Lighting will be used as required for safe work conditions and navigational purposes.
Physical presence – Equipment in-situ	<p>If the wellhead or other equipment (e.g. the guidebase/s) are left in-situ following decommissioning, the permanent physical presence of the wellhead or other equipment will continue to:</p> <ul style="list-style-type: none"> • Provide a hard substrate resulting in the creation of a new habitat. • Potentially interrupt natural sediment movement in the immediate vicinity of the wellhead remaining in-situ permanently. • Introduce contaminants to the water column and sediment surrounding the wellhead as it degrades overtime. 	<p>The gradual degradation and corrosion of the wellheads and equipment over time will result in trace amounts of metals to the water column and surrounding sediments. The main constituent of low-alloy steel used for this era of wellhead is iron (typically 95-98%), which is only toxic to marine organisms at extremely high concentrations – which are unlikely to be reached in this offshore location. The remaining constituents are chromium, molybdenum, manganese, and <1% of trace alloys including nickel, silicon, sulphur and phosphorous.</p> <p>Corrosion of the wellhead is likely to be slow (at a rate of ~0.2 mm/year) because of exposure to strong water currents.</p> <p>There are no other materials identified to be associated with the wellheads – i.e. plastic components or surface coatings.</p>	<p>For wellheads and other equipment (e.g. guidebase/s) to be left in-situ following decommissioning, the EP must demonstrate an equal or better environmental outcome; and demonstration of ALARP and acceptability.</p>

Aspect	Description	Potential Impact / Risk	Proposed Management
Planned Impacts			
Atmospheric emissions and greenhouse gas (GHG)	<p>Atmospheric and GHG emissions are generated by the MODU and vessels as a result of combustion for power generation.</p> <p>Vessels may also use ozone-depleting substances (ODS) in refrigeration systems.</p> <p>No waste will be incinerated on board.</p>	<p>Hydrocarbon combustion may result in a temporary, localised reduction of air quality in the environment immediately surrounding the release point.</p> <p>Non-GHG emissions (such as NOx and SOx) and GHG emissions can lead to a reduction in local air quality.</p> <p>Given the short duration of the campaigns (between 2 to 60 days) and relatively low fuel usage, the contribution of atmospheric and GHG emissions to the global carbon budget is expected to be insignificant and is not evaluated further.</p>	<ul style="list-style-type: none"> • Use low sulphur fuel on the vessels and MODU, in accordance with legislative requirements (e.g. Marine Orders). • Bulk solids transferred in accordance with bulk transfer procedures to reduce the risk of an unintentional release to sea and air. • No waste incineration onboard. • Ozone-depleting substances (ODS) managed in accordance with MARPOL. • Compliance with regulatory requirements for marine air pollution and GHG emissions reporting. • MODU and vessel Planned Maintenance System (PMS) in place to maintain DP, engines and machinery.
Noise emissions - Continuous	<p>Continuous noise emissions will be generated by the operation of support vessels, helicopters, operation of the MODU and cutting of the wellheads.</p>	<p>Underwater noise emissions can cause:</p> <ul style="list-style-type: none"> • a change in marine fauna behaviour. • mask communication. • temporary or permanent hearing loss. <p>The greatest source of noise emissions is if a MODU on Dynamic Position (DP) is used (from thruster noise), and its support vessels.</p> <p>The operational area does not overlap with any biologically important areas (BIAs) for marine mammals or fish/sharks, though it does for 4 species of marine turtles – any individuals present would be transitory.</p> <p>Potential impacts are likely to be restricted to localised and temporary avoidance behaviour. Given the short duration of the MODU campaign (60 days), the potential impacts are considered low.</p>	<ul style="list-style-type: none"> • Compliance with administrative controls (such as EPBC Regulations Part 8) to reduce interactions with marine fauna. • Documented maintenance program in place for equipment on vessels that provides a status on the maintenance of equipment. • MODU and vessel Planned Maintenance System (PMS) in place to maintain DP, engines and machinery. • Marine assurance standard in place.
Noise emissions – Impulsive	<p>Impulsive noise emissions generated by acoustic survey techniques during the geophysical survey – i.e. Multibeam echo sounder, side scan sonar, sub-bottom profiling, magnetometer, ultra-short baseline positioning system.</p> <p>Such equipment is designed to characterise the seabed topography, bathymetry, potential geohazards, and other seafloor features prior to MODU placement at the wellheads.</p>	<p>The operational area does not overlap with any biologically important areas (BIAs) for marine mammals or fish/sharks, though it does for 4 species of marine turtles – any individuals present would be transitory.</p> <p>The impulsive noise emissions generated by the various acoustic survey instruments may result in localised and temporary behavioural changes to marine fauna within tens or hundreds of metres.</p>	<ul style="list-style-type: none"> • Compliance with administrative controls (such as EPBC Regulations 8 (Part 8)) to reduce interactions with marine fauna.

Aspect	Description	Potential Impact / Risk	Proposed Management
Planned Impacts			
Light emissions	<p>Lights on the MODU and vessels will be required on a 24-hour basis during the activities for safety and navigational purposes, in accordance with navigational requirements.</p> <p>There is no proposed flaring.</p>	<p>Light emissions have the potential to result in changes to marine fauna behaviour, by acting as an attractant to light-sensitive species, leading to possible increased predation and/or disorientation.</p> <p>The closest nesting BIA for marine turtles is ~116 km from the 20 km buffer used for light impact assessment – meaning light from the MODU and vessels is not visible from shore; and there is no potential to impact nesting females or hatchlings.</p> <p>The operational area does not overlap any BIAs for seabirds, and is >150 km from shore, meaning there is no potential to impact fledging behaviour.</p> <p>There is the potential for a small number of adult seabirds and migratory shorebirds may be attracted to the MODU and vessels, however given the short duration of the campaigns (between 2 to 60 days), this is considered minor.</p>	<ul style="list-style-type: none"> Lighting will be used as required for safe work conditions and navigational purposes.
Planned discharges – Routine	<p>Operation of vessels and the MODU will routinely discharge the following to the marine environment:</p> <ul style="list-style-type: none"> sewage. greywater. putrescible waste. treated bilge. cooling water and brine. deck drainage. 	<p>A temporary and localised impact on water quality may result in a change in water quality and changes to predator-prey dynamics.</p> <p>Given the relatively low volume and intermittent nature of planned vessel discharges, the short duration of the campaigns (between 2 to 60 days), the water depth and open ocean environment of the operational area, the potential impact is expected to be localised to the immediate proximity of the release, and of short duration.</p>	<ul style="list-style-type: none"> All routine marine discharges will be managed according to legislative requirements. MODU and vessel PMS in place to maintain DP, engines and machinery.
Planned discharges – Decommissioning	<p>Decommissioning activities may result in the following discharges to the marine environment:</p> <ul style="list-style-type: none"> inhibited seawater (chemical additives include biocide, oxygen scavenger, dyes, corrosion inhibitor). control (hydraulic) fluid. cement and cement debris. Water Based Mud (WBM). reservoir gas. cleaning chemicals (weak acids). <p>No Synthetic Based Mud will be used.</p>	<p>Discharges of muds and other fluids have the potential to impact to:</p> <ul style="list-style-type: none"> Water quality. Sediment quality and benthic habitat. Local marine fauna. <p>The benthic fauna and seabed at the operational area is widely represented on the Joseph Bonaparte Gulf.</p> <p>Given the quantities of the discharges, the low toxicity of WBM and cement and high dispersion in the open, offshore environment, any impact on the marine environment from the discharges are expected to be minor and temporary.</p> <p>Recovery of water quality conditions is expected within hours after the cessation of the discharges.</p> <p>Cement discharge impacts to the marine environment are associated with smothering of benthic and infauna communities in the vicinity of the wellheads. Due to the localised area of disturbance, impacted benthic communities are expected to rapidly recolonise any disturbed areas upon completion of the activities.</p>	<ul style="list-style-type: none"> Selection of chemicals to reduce impact to as low as reasonably practicable (ALARP) and acceptable levels. Quality control limits for barite. Bulk powder, fluids and brine discharge framework, to restrict the discharge of leftover bulk products to ALARP. Drill cuttings returned to the MODU will be discharged below the water line to facilitate dispersion. Lost-circulation material procedures. Cement remaining at the completion of drilling is managed so as to avoid or minimise its discharge overboard. Chemical assessment procedure will be implemented.

Aspect	Description	Potential Impact / Risk	Proposed Management
Unplanned Risks			
Interaction with other marine users -equipment in-situ	If the wellhead or other equipment (e.g. the guide base/s) are left in-situ following decommissioning, the permanent physical presence of the wellhead or other equipment may cause an impact to other marine users (e.g. commercial fisheries, petroleum industry, or shipping).	<p>The wellheads have been in-situ on the seabed for the past ~40 years without any reported incidents or issues. The height of the wellheads is only ~3 m above the seabed, and the guidebase/s are partially buried.</p> <p>Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area.</p> <p>There are no tourism or recreational fishing activities expected in the operational area due to distance from shore, and no Maritime Defence Exercise areas.</p> <p>There are no known recognised major shipping routes through the operational area, and the water depth (~95 m) and height of the wellheads (~3 m) mean it is unlikely to cause any disturbance or displacement of shipping traffic.</p>	<ul style="list-style-type: none"> Wellheads are charted on AHO nautical charts so that marine users are aware of their location. AHO and any other stakeholders who requested to be informed of wellhead locations (i.e fisheries) are notified.
Marine fauna interaction	<p>There is the potential for vessels to collide with marine fauna, including marine mammals, fish, marine reptiles and seabirds.</p> <p>The main collision risk is through vessel collision with large, slow-moving cetaceans, potentially resulting in severe injury or mortality.</p>	<p>Given the short duration of the campaigns (between 2 to 60 days), and the slow speeds at which vessels operate, collisions with marine fauna are considered highly unlikely.</p> <p>Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.</p>	<ul style="list-style-type: none"> Compliance with administrative controls (such as EPBC Regulations Part 8) to reduce interactions with marine fauna. Any vessel strikes with cetaceans will be reported in the National Ship Strike Database. Observations of the surroundings will be undertaken from the vessel/s for marine fauna.
Introduction of marine pest species	There is the potential for introduction and establishment of invasive marine pests to the operational area via vessels ballast water or biofouling on vessel hulls.	<p>The risk of introducing IMS is limited by the depth of the operational area (>50 m), which is not directly adjacent to any shallow shoals or banks. The substrate in the operational area does not have any hard substrate to which IMS can attach.</p> <p>Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.</p>	<ul style="list-style-type: none"> All vessels will be assessed and managed as appropriate to prevent the introduction of marine pests. Vessels will comply with biosecurity requirements for ballast water and biofouling, and comply with the Maritime Arrivals Reporting System (MARS).
Accidental release – waste and solid objects	<p>There is the potential for the accidental disposal of hazardous wastes (e.g. hydrocarbon contaminated materials, batteries, paint cans) and non-hazardous solid wastes (e.g. paper and cardboard, wooden pallets, scrap steel, rope, glass and plastics).</p> <p>There is the potential for dropped objects during retrieval activities – i.e. the wellhead or guidebase/s (in particular if corroded) or the winches.</p>	<p>The accidental release of wastes can cause a temporary and localised reduction in water quality, and the potential for marine fauna to ingest or become entangled with solid waste (garbage).</p> <p>If equipment is dropped, this may cause disturbance or smothering of benthic habitats. The largest footprint of any item of equipment that will be lifted or retrieved during the campaigns is 30 m³ (footprint of a guidebase or basket).</p> <p>This is a small area; and benthic habitats are known to rapidly recover. There are no KEFs or sensitive benthic habitat in the operational area.</p> <p>Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.</p>	<ul style="list-style-type: none"> Procedures to reduce the potential for loss of non-hazardous and hazardous waste and dropped objects to be followed. Dropped objects to be retrieved where possible. Lifting procedures will be implemented. For hazardous chemicals, including hydrocarbons, hazardous chemical management procedures will be in place to reduce the risk of an accidental release to sea. Chemical assessment procedure will be implemented.

Aspect	Description	Potential Impact / Risk	Proposed Management
Unplanned Risks			
Accidental release – Minor loss of containment	<p>Minor volumes of hydrocarbon or other chemicals (e.g. hydraulic fluids, deck spills) may be accidentally released to the marine environment due to:</p> <ul style="list-style-type: none"> • Bulk product spills (e.g. cement, barite). • Loss of primary/secondary containment. • Incorrect handling and storage. • ROV failure. 	<p>Minor accidental releases of hydrocarbons or chemicals can cause a change in water quality. Expected volumes are small (<1 m³), and there is no potential for injury or mortality to marine fauna.</p> <p>Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.</p>	<ul style="list-style-type: none"> • Use of MDO rather than Heavy Fuel Oil (HFO) on vessels (MDO is lighter than HFO and will evaporate faster and persist less in the marine environment). • Response plans and equipment will be in place and maintained to manage spills to the environment (e.g. oil pollution emergency plans). • Administrative control, such as bunkering / bulk refuelling procedures. • In the event of a minor loss of containment to sea, Oil Pollution Emergency Plan (OPEP) requirements will be implemented to mitigate environmental impacts. • Chemical assessment procedure will be implemented. • For hazardous chemicals, including hydrocarbons, hazardous chemical management procedures will be in place to reduce the risk of an accidental release to sea. • Remotely operated vehicle (ROV) inspection and maintenance procedures. • Procedures to reduce the potential for loss of non-hazardous and hazardous waste and dropped objects to be followed. • MODU and vessel PMS in place to maintain DP, engines and machinery. • Where required, operational and scientific monitoring undertaken in accordance with Eni's Operational and Scientific Monitoring Plan.
Accidental release – MDO (vessel collision)	<p>A release of up to 300 m³ marine diesel oil (MDO) could occur from a collision between the activity vessels and a third-party vessel due to factors such as human error, poor navigation, vessel equipment failure or poor weather.</p> <p>A smaller volume of MDO (~50 m³) could be released during bunkering (i.e. refuelling of the MODU).</p>	<p>An accidental release of MDO can cause a change in water quality, a change in fauna behaviour, injury or mortality to marine fauna and an impact to other marine users.</p> <p>Potential impacts include those to plankton, fish, marine turtles, marine mammals, seabirds and migratory shorebirds, commercial fisheries, and cultural heritage.</p> <p>MDO is a relatively volatile, non-persistent nature hydrocarbon with rapid evaporation on the sea-surface (typically ~36% within the first 2 hours).</p> <p>Hydrocarbon spill modelling does not predict any shoreline contact; or any contact with Marine Parks or KEFs.</p> <p>Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area. There are no tourism or recreational fishing activities expected, and no Maritime Defence Exercise areas.</p> <p>Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.</p>	<ul style="list-style-type: none"> • Pre-start notifications will be issued. • Regulatory requirements for the prevention of vessel collisions and safety and emergency arrangements. • Use of MDO rather than Heavy Fuel Oil (HFO) on vessels. • In the event of an oil spill to sea, OPEP requirements will be implemented to mitigate environmental impacts. • Response plans and equipment will be in place and maintained to manage spills to the environment (e.g., oil pollution emergency plans). • Administrative control, such as bunkering / bulk refuelling procedures. • Vessels selected and on-boarded are operated, maintained and manned in accordance with industry standards (Marine Orders) and regulatory requirements. • Where required, operational and scientific monitoring undertaken in accordance with Eni's Operational and Scientific Monitoring Plan.

STAKEHOLDER CONSULTATION

Petrel-3 and Petrel-4
Monitoring and Decommissioning
July 2024

PETREL-3 AND PETREL-4 Monitoring and Decommissioning

Eni through its subsidiary, Eni Energy Bonaparte Pty Ltd, is the titleholder of the Petrel Gas Field (Petrel) in the Bonaparte Basin in North Western Australia. The field is located in permits NT/RL1 and WA-6-R, approximately 260 km WSW of Darwin and ~170 km offshore of the WA coast. For the purposes of the monitoring and decommissioning, the activity is limited to NT/RL1.

Within the NT/RL1 permit, two wells (Petrel-3 and Petrel-4) have been identified as suspended since the 1980s, with wellheads remaining in-situ. The wells were suspended in accordance with the regulations at the time, with barriers across and above the reservoir, including the testing of the barriers. The reservoir is isolated in both wells and the sub-hydrostatic pressure of the reservoir prevents the wells from flowing in their current condition. **Loss of well control is not considered a credible risk.**

Eni plans to decommission these wells according to *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth) (Environment Regulations)* and are preparing the Environment Plan for Environment Plan (EP) for monitoring and decommissioning to submit to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

As required by NOPSEMA, Eni must consult with people whose functions, interests and activities may be affected by the monitoring and decommissioning of wells Petrel-3 and Petrel-4. The

Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 refers to such people as relevant persons.

This fact sheet provides you with information to determine if you are a relevant person for the monitoring and decommissioning activity of Petrel-3 and Petrel-4.

You may be a relevant person if the decommissioning of Petrel wells may affect:

- your spiritual or cultural connection to the land and sea country
- your business and recreational activities, such as fishing and tourism
- the functions or responsibilities of your organisation.

FEEDBACK

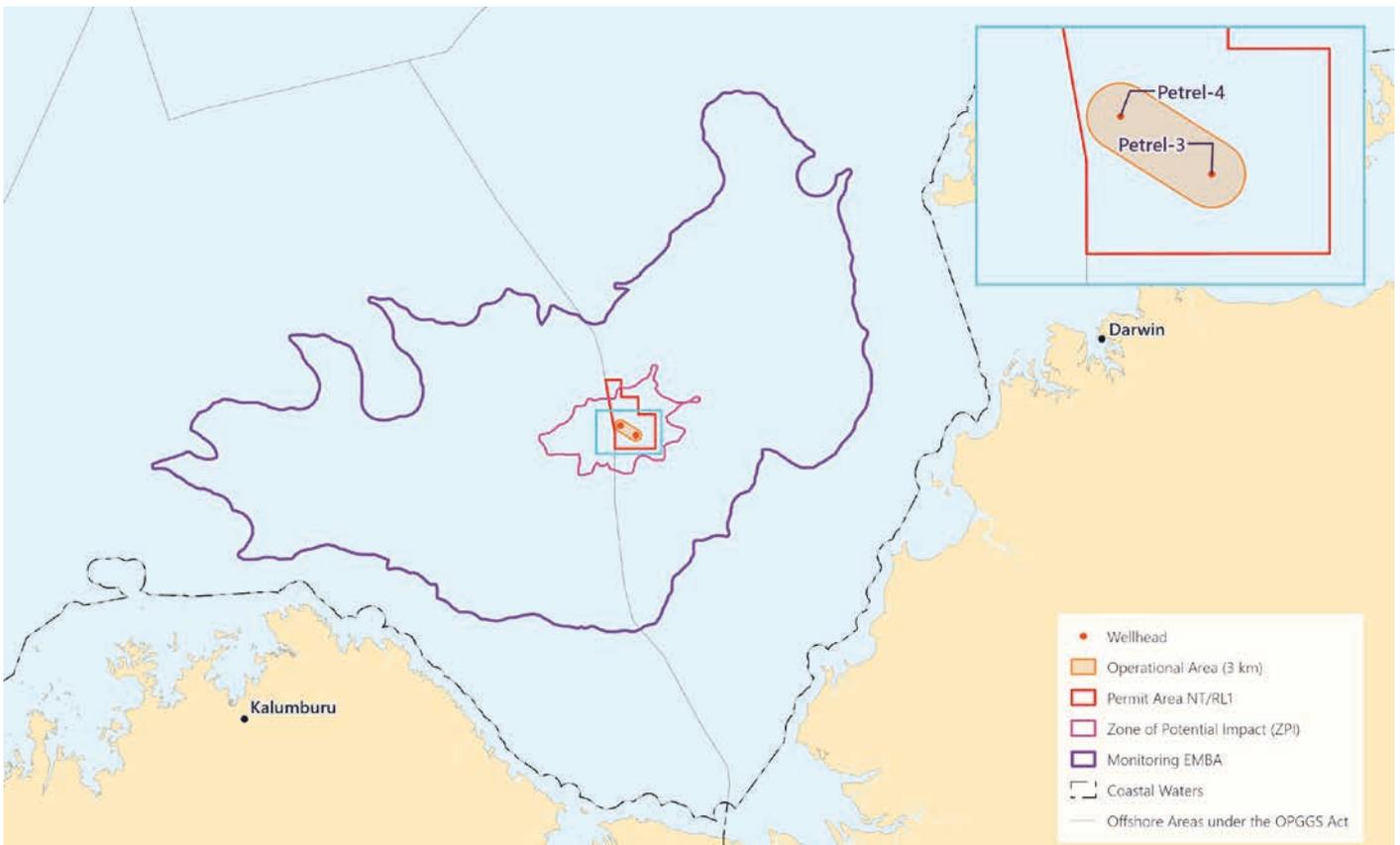
If you think you may be a relevant person, please review this information and provide any feedback to Eni. Additional information can be found online at petreleni.com.au. You are invited to submit your advice on control measures to mitigate potential impact (if any) that the proposed activities may have on you. We are seeking feedback by **28 August 2024**.

CONTACT ENI

Email: info@petreleni.com.au
Phone: 1300 155 616
Post: PO Box 6862
East Perth WA 6892



Figure 1: Operational area, ZPI and EMBA



LOCATION

The Petrel-3 and Petrel-4 wellheads are located in Commonwealth waters approximately 260 km WSW of Darwin, approximately 150 km from closest shore, in a water depth of approximately 95m.

Location details are summarised in **Table 1**. A location map is provided in **Figure 1**.

TIMING

The activities will potentially occur in any season between 2025 and 2027.

The actual timing of the activities will depend on a number of factors, including vessel and rig availability and weather conditions.

ACTIVITIES AND DURATION

To ensure that the condition of the seabed equipment on the wells remains unchanged, and to plan for the monitoring and decommissioning campaign, Eni proposes the following activities as part of the Petrel-3 and Petrel-4 decommissioning strategy.

Eni is assessing the environmental benefits of leaving whole or partial wellheads in-situ, for consideration by NOPSEMA.

Table 2 – Planned Activities

Monitoring and pre-decommissioning activities	Activities summary	Duration (both wellheads)
General Visual Inspection (GVI) survey campaign(s)	Annual GVI survey of the two suspended wells, including potential cleaning ¹ of the well equipment to allow detailed inspection.	Up to 2 weeks. Frequency will be annual, with no more than 24 months between surveys.
Geotechnical and Geophysical survey campaign	Geophysical investigation to evaluate the sub-seabed conditions. Geotechnical survey to support a jack-up MODU.	Geophysical survey: up to 40 days Geotechnical survey: up to 20 days
Pre-decommissioning vessel campaign	High-pressure cleaning ¹ of the wellhead. Removal of the corrosion cap. 3D external scan by camera or laser to ensure integrity. Corrosion cap replacement.	Up to 20 days.
Decommissioning activities	Activities summary	Duration (both wellheads)
Decommissioning campaign ^{2&3}	Decommissioning of the Petrel-3 and Petrel-4 wells	Up to 60 days (~30 days per well).
Post-decommissioning activities	Activities summary	Duration
As-left survey(s)	GVI survey to demonstrate that the decommissioning activities proposed have been completed and requirements have been met	2 days per well

1. Cleaning of the wellheads may take place at any time prior to decommissioning activities. Cleaning may be completed using high pressure seawater.
2. Intent is to do both wells in a single campaign, potential for second campaign as contingency.
3. Mobile offshore drilling unit configurations are currently under consideration.

Table 1: Location Details

Activity Details		
Permit	NT/RL1	
	Datum: GDA94	
	Latitude:	12° 56' 2.071" S
	Longitude:	128° 34' 14.671" E
Petrel-3 well location	Easting:	453,438 m E
	Northing:	8,570,134 m N
	Latitude:	12° 53' 13.194" S
	Longitude:	128° 29' 45.557" E
Petrel-4 well location	Easting:	445,319 m E
	Northing:	8,575,307 m N
	The Operational Area is a defined area within which all petroleum activities associated within this EP occur, and which allows impact assessment of those activities. It includes the extent of all planned activities within the EP and is defined as a 3 km radius around the two wells and a 3 km wide corridor between them. Refer to Figure 1.	
	Operational Area	
Nearest proximity to Key Regional Features	Regional Feature	Petrel-3 Petrel-4
	Darwin	~ 251 km ~ 258 km
	Yelcherr Gas Plant	~ 173 km ~ 182 km
	Oceanic Shoals Marine Park	~ 48 km ~ 37 km
	Closest Mainland Point	~ 150 km ~ 158 km
	Worst case hydrocarbon spill	Maximum credible volume ~300m ³ marine diesel in the event of a ruptured fuel tank (full).

ENVIRONMENT THAT MAY BE AFFECTED (EMBA)

The environment that may be affected (EMBA) is the area within which the operations activities could have an environmental impact. The environmental impacts from planned activities will mostly be limited to within the operational area. The zone of potential impact (ZPI) or moderate exposure zone is smaller than the EMBA and may be representative of an area of biological impact from hydrocarbons.

The outermost boundary of the EMBA is based on an accidental release of marine diesel oil (MDO) to the environment in the unlikely event of a vessel collision damaging a fuel tank. This event is highly unlikely to occur and Eni implements a range of measures to prevent it. **Loss of well control is not considered a credible risk.** The EMBA is shown in **Figure 1**.

Scientific modelling is used to assess the potential impacted zone should an unplanned spill occur (eg: vessel collision), and is referred to as the EMBA. This analysis combines hundreds of modelling simulations during a range of wind and current conditions. Refer to [NOPSEMA's website](#) for information on oil spill modelling.

ENVIRONMENTAL MANAGEMENT

Eni has assessed the environmental impacts and risks for the monitoring and decommissioning activity within the EP. A summary of the assessment and the proposed management measures to reduce the impacts and risks to as low as reasonably practicable and to an acceptable level are provided in **Table 3**.

Further details will be provided in the Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan, which NOPSEMA will publish on their website once the plan is submitted.

STAKEHOLDER COMMENT AND FEEDBACK

Eni is seeking comment from relevant persons and stakeholders in relation to any potential impact that the proposed activities, covered by the Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan, may have on your functions, interests or activities as a relevant person.

If you wish to provide any comment or feedback on these activities, please do so by **28 August 2024** to the contact details provided. If you know anyone who may be a relevant person, we ask that you make them aware of our consultation.

Eni treats all information provided by you as confidential, with the exception of providing information to NOPSEMA. Eni is required to provide NOPSEMA with details of all correspondence with relevant persons, including copies of written correspondence. NOPSEMA routinely publish environment plans under assessment or accepted on their website.

Personal information (other than name and contact details) is sensitive information and will not be published in the EP. You can request that any material provided to Eni, including your name and contact details, be treated as sensitive information not to be published in the Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan.

All comments provided will be considered in the Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan revision to be submitted to NOPSEMA, in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*. Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA in order for this information to remain confidential to NOPSEMA.

If you wish to opt out of our consultation process after reviewing the information in this letter, please let us know via email.

Please consider NOPSEMA's advice in Consultation on Offshore Petroleum Environment Plans – Information can also be found at the project landing page at **petreleni.com.au**.

CONTACT ENI

Email: info@petreleni.com.au
Phone: 1300 155 616
Post: PO Box 6862
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Table 3 - Summary of Potential Key Environmental Impact/Risks and Management Measures

Aspect	Description	Potential Impact / Risk	Proposed Management
Planned Impacts			
Seabed disturbance	<p>Seabed disturbance will be caused by:</p> <ul style="list-style-type: none"> seabed sampling during the geotechnical survey. positioning of the mobile offshore drilling unit (MODU), if a moored or jack-up MODU is used. removal of marine growth on the wellhead. installation of temporary winches on the seabed. cutting of the wellhead. retrieval of the wellhead and guide base/s from the seabed. 	<p>Seabed disturbance will cause a localised and temporary reduction in water quality, and disturbance to benthic habitat.</p> <p>The maximum seabed disturbance footprint is from MODU positioning, if a moored MODU is used.</p> <p>In this case, up to 12 anchors and mooring lines will be laid, giving a maximum footprint of 1,944 m² per well.</p> <p>There is no sensitive benthic habitat, Marine Parks or Key Ecological Features (KEFs) in the operational area.</p>	<ul style="list-style-type: none"> MODU move and anchoring procedure (including mooring analysis). All deployed equipment will be recovered. Post-activity ROV survey will be conducted.
Physical interaction – Other marine users	<p>The physical presence of the MODU and movement of vessels within the operational area can interfere with other marine users by causing displacement from the area during activities.</p>	<p>The operational area is a 3 km radius around the two wells and the corridor between them. There is no formal Petroleum Safety Zone; however, exclusion and cautionary zones will be in place during activities.</p> <p>Activities in the operational area are of short duration, expected to last between 2 to 60 days.</p> <p>Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area.</p> <p>There are no tourism or recreational fishing activities expected in the operational area due to distance from shore, and no Maritime Defence Exercise areas.</p>	<ul style="list-style-type: none"> Navigation equipment and procedures, in accordance with legislative requirements. Maritime notices will be complied with. All activities will occur within the operational area. Other relevant notifications may be made, as requested by stakeholders. Lighting will be used as required for safe work conditions and navigational purposes.
Physical presence – Equipment in-situ	<p>If the wellhead or other equipment (e.g. the guidebase/s) are left in-situ following decommissioning, the permanent physical presence of the wellhead or other equipment will continue to:</p> <ul style="list-style-type: none"> Provide a hard substrate resulting in the creation of a new habitat. Potentially interrupt natural sediment movement in the immediate vicinity of the wellhead remaining in-situ permanently. Introduce contaminants to the water column and sediment surrounding the wellhead as it degrades overtime. 	<p>The gradual degradation and corrosion of the wellheads and equipment over time will result in trace amounts of metals to the water column and surrounding sediments. The main constituent of low-alloy steel used for this era of wellhead is iron (typically 95-98%), which is only toxic to marine organisms at extremely high concentrations – which are unlikely to be reached in this offshore location. The remaining constituents are chromium, molybdenum, manganese, and <1% of trace alloys including nickel, silicon, sulphur and phosphorous.</p> <p>Corrosion of the wellhead is likely to be slow (at a rate of ~0.2 mm/year) because of exposure to strong water currents.</p> <p>There are no other materials identified to be associated with the wellheads – i.e. plastic components or surface coatings.</p>	<p>For wellheads and other equipment (e.g. guidebase/s) to be left in-situ following decommissioning, the EP must demonstrate an equal or better environmental outcome; and demonstration of ALARP and acceptability.</p>

Aspect	Description	Potential Impact / Risk	Proposed Management
Planned Impacts			
Atmospheric emissions and greenhouse gas (GHG)	<p>Atmospheric and GHG emissions are generated by the MODU and vessels as a result of combustion for power generation.</p> <p>Vessels may also use ozone-depleting substances (ODS) in refrigeration systems.</p> <p>No waste will be incinerated on board.</p>	<p>Hydrocarbon combustion may result in a temporary, localised reduction of air quality in the environment immediately surrounding the release point.</p> <p>Non-GHG emissions (such as NOx and SOx) and GHG emissions can lead to a reduction in local air quality.</p> <p>Given the short duration of the campaigns (between 2 to 60 days) and relatively low fuel usage, the contribution of atmospheric and GHG emissions to the global carbon budget is expected to be insignificant and is not evaluated further.</p>	<ul style="list-style-type: none"> Use low sulphur fuel on the vessels and MODU, in accordance with legislative requirements (e.g. Marine Orders). Bulk solids transferred in accordance with bulk transfer procedures to reduce the risk of an unintentional release to sea and air. No waste incineration onboard. Ozone-depleting substances (ODS) managed in accordance with MARPOL. Compliance with regulatory requirements for marine air pollution and GHG emissions reporting. MODU and vessel Planned Maintenance System (PMS) in place to maintain DP, engines and machinery.
Noise emissions - Continuous	<p>Continuous noise emissions will be generated by the operation of support vessels, helicopters, operation of the MODU and cutting of the wellheads.</p>	<p>Underwater noise emissions can cause:</p> <ul style="list-style-type: none"> a change in marine fauna behaviour. mask communication. temporary or permanent hearing loss. <p>The greatest source of noise emissions is if a MODU on Dynamic Position (DP) is used (from thruster noise), and its support vessels.</p> <p>The operational area does not overlap with any biologically important areas (BIAs) for marine mammals or fish/sharks, though it does for 4 species of marine turtles – any individuals present would be transitory.</p> <p>Potential impacts are likely to be restricted to localised and temporary avoidance behaviour. Given the short duration of the MODU campaign (60 days), the potential impacts are considered low.</p>	<ul style="list-style-type: none"> Compliance with administrative controls (such as EPBC Regulations Part 8) to reduce interactions with marine fauna. Documented maintenance program in place for equipment on vessels that provides a status on the maintenance of equipment. MODU and vessel Planned Maintenance System (PMS) in place to maintain DP, engines and machinery. Marine assurance standard in place.
Noise emissions – Impulsive	<p>Impulsive noise emissions generated by acoustic survey techniques during the geophysical survey – i.e. Multibeam echo sounder, side scan sonar, sub-bottom profiling, magnetometer, ultra-short baseline positioning system.</p> <p>Such equipment is designed to characterise the seabed topography, bathymetry, potential geohazards, and other seafloor features prior to MODU placement at the wellheads.</p>	<p>The operational area does not overlap with any biologically important areas (BIAs) for marine mammals or fish/sharks, though it does for 4 species of marine turtles – any individuals present would be transitory.</p> <p>The impulsive noise emissions generated by the various acoustic survey instruments may result in localised and temporary behavioural changes to marine fauna within tens or hundreds of metres.</p>	<ul style="list-style-type: none"> Compliance with administrative controls (such as EPBC Regulations 8 (Part 8)) to reduce interactions with marine fauna.

Aspect	Description	Potential Impact / Risk	Proposed Management
Planned Impacts			
Light emissions	Lights on the MODU and vessels will be required on a 24-hour basis during the activities for safety and navigational purposes, in accordance with navigational requirements. There is no proposed flaring.	Light emissions have the potential to result in changes to marine fauna behaviour, by acting as an attractant to light-sensitive species, leading to possible increased predation and/or disorientation. The closest nesting BIA for marine turtles is ~116 km from the 20 km buffer used for light impact assessment – meaning light from the MODU and vessels is not visible from shore; and there is no potential to impact nesting females or hatchlings. The operational area does not overlap any BIAs for seabirds, and is >150 km from shore, meaning there is no potential to impact fledging behaviour. There is the potential for a small number of adult seabirds and migratory shorebirds may be attracted to the MODU and vessels, however given the short duration of the campaigns (between 2 to 60 days), this is considered minor.	<ul style="list-style-type: none"> Lighting will be used as required for safe work conditions and navigational purposes.
Planned discharges – Routine	Operation of vessels and the MODU will routinely discharge the following to the marine environment: <ul style="list-style-type: none"> sewage. greywater. putrescible waste. treated bilge. cooling water and brine. deck drainage. 	A temporary and localised impact on water quality may result in a change in water quality and changes to predator-prey dynamics. Given the relatively low volume and intermittent nature of planned vessel discharges, the short duration of the campaigns (between 2 to 60 days), the water depth and open ocean environment of the operational area, the potential impact is expected to be localised to the immediate proximity of the release, and of short duration.	<ul style="list-style-type: none"> All routine marine discharges will be managed according to legislative requirements. MODU and vessel PMS in place to maintain DP, engines and machinery.
Planned discharges – Decommissioning	Decommissioning activities may result in the following discharges to the marine environment: <ul style="list-style-type: none"> inhibited seawater (chemical additives include biocide, oxygen scavenger, dyes, corrosion inhibitor). control (hydraulic) fluid. cement and cement debris. Water Based Mud (WBM). reservoir gas. cleaning chemicals (weak acids). No Synthetic Based Mud will be used.	Discharges of muds and other fluids have the potential to impact to: <ul style="list-style-type: none"> Water quality. Sediment quality and benthic habitat. Local marine fauna. The benthic fauna and seabed at the operational area is widely represented on the Joseph Bonaparte Gulf. Given the quantities of the discharges, the low toxicity of WBM and cement and high dispersion in the open, offshore environment, any impact on the marine environment from the discharges are expected to be minor and temporary. Recovery of water quality conditions is expected within hours after the cessation of the discharges. Cement discharge impacts to the marine environment are associated with smothering of benthic and infauna communities in the vicinity of the wellheads. Due to the localised area of disturbance, impacted benthic communities are expected to rapidly recolonise any disturbed areas upon completion of the activities.	<ul style="list-style-type: none"> Selection of chemicals to reduce impact to as low as reasonably practicable (ALARP) and acceptable levels. Quality control limits for barite. Bulk powder, fluids and brine discharge framework, to restrict the discharge of leftover bulk products to ALARP. Drill cuttings returned to the MODU will be discharged below the water line to facilitate dispersion. Lost-circulation material procedures. Cement remaining at the completion of drilling is managed so as to avoid or minimise its discharge overboard. Chemical assessment procedure will be implemented.

Aspect	Description	Potential Impact / Risk	Proposed Management
Unplanned Risks			
Interaction with other marine users -equipment in-situ	If the wellhead or other equipment (e.g. the guide base/s) are left in-situ following decommissioning, the permanent physical presence of the wellhead or other equipment may cause an impact to other marine users (e.g. commercial fisheries, petroleum industry, or shipping).	<p>The wellheads have been in-situ on the seabed for the past ~40 years without any reported incidents or issues. The height of the wellheads is only ~3 m above the seabed, and the guidebase/s are partially buried.</p> <p>Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area.</p> <p>There are no tourism or recreational fishing activities expected in the operational area due to distance from shore, and no Maritime Defence Exercise areas.</p> <p>There are no known recognised major shipping routes through the operational area, and the water depth (~95 m) and height of the wellheads (~3 m) mean it is unlikely to cause any disturbance or displacement of shipping traffic.</p>	<ul style="list-style-type: none"> Wellheads are charted on AHO nautical charts so that marine users are aware of their location. AHO and any other stakeholders who requested to be informed of wellhead locations (i.e fisheries) are notified.
Marine fauna interaction	<p>There is the potential for vessels to collide with marine fauna, including marine mammals, fish, marine reptiles and seabirds.</p> <p>The main collision risk is through vessel collision with large, slow-moving cetaceans, potentially resulting in severe injury or mortality.</p>	<p>Given the short duration of the campaigns (between 2 to 60 days), and the slow speeds at which vessels operate, collisions with marine fauna are considered highly unlikely.</p> <p>Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.</p>	<ul style="list-style-type: none"> Compliance with administrative controls (such as EPBC Regulations Part 8) to reduce interactions with marine fauna. Any vessel strikes with cetaceans will be reported in the National Ship Strike Database. Observations of the surroundings will be undertaken from the vessel/s for marine fauna.
Introduction of marine pest species	There is the potential for introduction and establishment of invasive marine pests to the operational area via vessels ballast water or biofouling on vessel hulls.	<p>The risk of introducing IMS is limited by the depth of the operational area (>50 m), which is not directly adjacent to any shallow shoals or banks. The substrate in the operational area does not have any hard substrate to which IMS can attach.</p> <p>Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.</p>	<ul style="list-style-type: none"> All vessels will be assessed and managed as appropriate to prevent the introduction of marine pests. Vessels will comply with biosecurity requirements for ballast water and biofouling, and comply with the Maritime Arrivals Reporting System (MARS).
Accidental release – waste and solid objects	<p>There is the potential for the accidental disposal of hazardous wastes (e.g. hydrocarbon contaminated materials, batteries, paint cans) and non-hazardous solid wastes (e.g. paper and cardboard, wooden pallets, scrap steel, rope, glass and plastics).</p> <p>There is the potential for dropped objects during retrieval activities – i.e. the wellhead or guidebase/s (in particular if corroded) or the winches.</p>	<p>The accidental release of wastes can cause a temporary and localised reduction in water quality, and the potential for marine fauna to ingest or become entangled with solid waste (garbage).</p> <p>If equipment is dropped, this may cause disturbance or smothering of benthic habitats. The largest footprint of any item of equipment that will be lifted or retrieved during the campaigns is 30 m³ (footprint of a guidebase or basket).</p> <p>This is a small area; and benthic habitats are known to rapidly recover. There are no KEFs or sensitive benthic habitat in the operational area.</p> <p>Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.</p>	<ul style="list-style-type: none"> Procedures to reduce the potential for loss of non-hazardous and hazardous waste and dropped objects to be followed. Dropped objects to be retrieved where possible. Lifting procedures will be implemented. For hazardous chemicals, including hydrocarbons, hazardous chemical management procedures will be in place to reduce the risk of an accidental release to sea. Chemical assessment procedure will be implemented.

Aspect	Description	Potential Impact / Risk	Proposed Management
Unplanned Risks			
Accidental release – Minor loss of containment	<p>Minor volumes of hydrocarbon or other chemicals (e.g. hydraulic fluids, deck spills) may be accidentally released to the marine environment due to:</p> <ul style="list-style-type: none"> • Bulk product spills (e.g. cement, barite). • Loss of primary/secondary containment. • Incorrect handling and storage. • ROV failure. 	<p>Minor accidental releases of hydrocarbons or chemicals can cause a change in water quality. Expected volumes are small (<1 m³), and there is no potential for injury or mortality to marine fauna.</p> <p>Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.</p>	<ul style="list-style-type: none"> • Use of MDO rather than Heavy Fuel Oil (HFO) on vessels (MDO is lighter than HFO and will evaporate faster and persist less in the marine environment). • Response plans and equipment will be in place and maintained to manage spills to the environment (e.g. oil pollution emergency plans). • Administrative control, such as bunkering / bulk refuelling procedures. • In the event of a minor loss of containment to sea, Oil Pollution Emergency Plan (OPEP) requirements will be implemented to mitigate environmental impacts. • Chemical assessment procedure will be implemented. • For hazardous chemicals, including hydrocarbons, hazardous chemical management procedures will be in place to reduce the risk of an accidental release to sea. • Remotely operated vehicle (ROV) inspection and maintenance procedures. • Procedures to reduce the potential for loss of non-hazardous and hazardous waste and dropped objects to be followed. • MODU and vessel PMS in place to maintain DP, engines and machinery. • Where required, operational and scientific monitoring undertaken in accordance with Eni's Operational and Scientific Monitoring Plan.
Accidental release – MDO (vessel collision)	<p>A release of up to 300 m³ marine diesel oil (MDO) could occur from a collision between the activity vessels and a third-party vessel due to factors such as human error, poor navigation, vessel equipment failure or poor weather.</p> <p>A smaller volume of MDO (~50 m³) could be released during bunkering (i.e. refuelling of the MODU).</p>	<p>An accidental release of MDO can cause a change in water quality, a change in fauna behaviour, injury or mortality to marine fauna and an impact to other marine users.</p> <p>Potential impacts include those to plankton, fish, marine turtles, marine mammals, seabirds and migratory shorebirds, commercial fisheries, and cultural heritage.</p> <p>MDO is a relatively volatile, non-persistent nature hydrocarbon with rapid evaporation on the sea-surface (typically ~36% within the first 2 hours).</p> <p>Hydrocarbon spill modelling does not predict any shoreline contact; or any contact with Marine Parks or KEFs.</p> <p>Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area. There are no tourism or recreational fishing activities expected, and no Maritime Defence Exercise areas.</p> <p>Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.</p>	<ul style="list-style-type: none"> • Pre-start notifications will be issued. • Regulatory requirements for the prevention of vessel collisions and safety and emergency arrangements. • Use of MDO rather than Heavy Fuel Oil (HFO) on vessels. • In the event of an oil spill to sea, OPEP requirements will be implemented to mitigate environmental impacts. • Response plans and equipment will be in place and maintained to manage spills to the environment (e.g., oil pollution emergency plans). • Administrative control, such as bunkering / bulk refuelling procedures. • Vessels selected and on-boarded are operated, maintained and manned in accordance with industry standards (Marine Orders) and regulatory requirements. • Where required, operational and scientific monitoring undertaken in accordance with Eni's Operational and Scientific Monitoring Plan.

ENI PETREL-3 AND PETREL-4 MONITORING AND DECOMMISSIONING

ADVERTISING

The following content represents the advertising campaign undertaken for the activity.

- a. Events
 - i. East Kimberley Chamber of Commerce & Industry Business After Hours
- b. Newsletters
 - i. East Kimberley Chamber of Commerce & Industry
 - ii. Northern Territory Seafood Council
- c. Newspaper
 - i. Kimberley Echo – booking confirmation and ad copy
 - ii. NT News – booking confirmation and ad copy
 - iii. WA News – booking confirmation and ad copy
- d. Posters
- e. Radio
 - i. 60 Second Production – (File embedded in section to follow - click to hear production example)
 - ii. First Nations Radio FM94.5 – booking confirmation
 - iii. First Nations Radio AR913 – booking confirmation
 - iv. Mix 104.9 Darwin – booking confirmation
 - v. Palmerston FM 88 – booking confirmation

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- i. East Kimberley Chamber of Commerce & Industry Business After Hours



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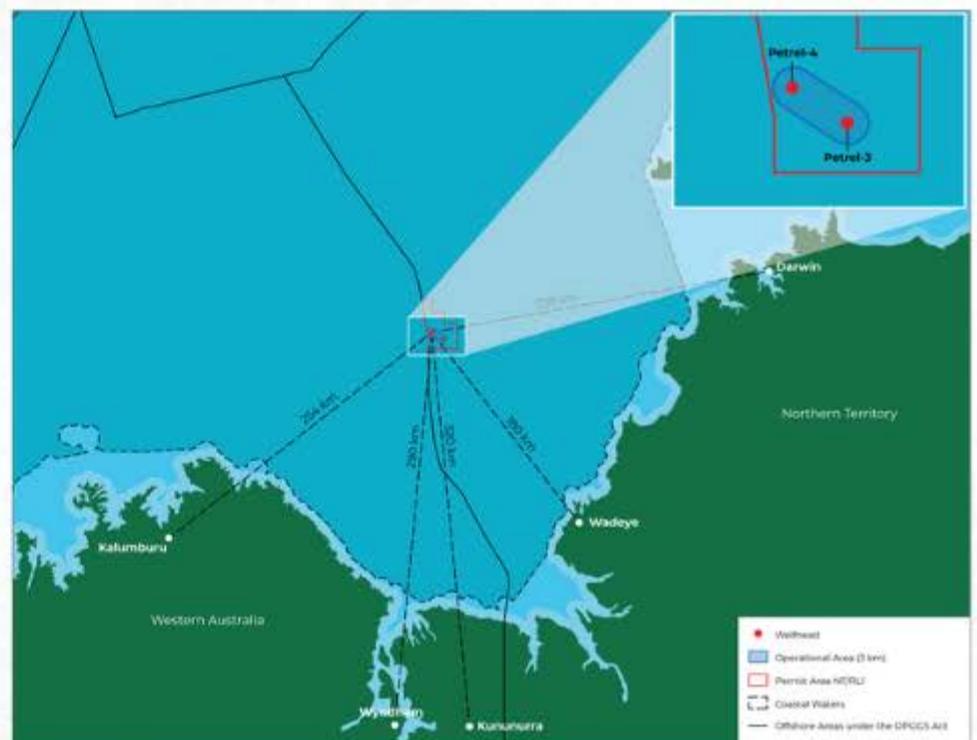
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SPECIFICALLY, ENI WOULD LIKE TO CONSULT WITH YOU REGARDING THEIR UPCOMING PETREL 3 AND PETREL 4 MONITORING AND DECOMMISSIONING PROJECT ENVIRONMENTAL PLAN – WHERE THEY'LL SHARE INFORMATION ABOUT THE PROJECT, WHAT'S INVOLVED, AND HOW THEY MANAGE ALL THEIR PRE-PLANNING.

WE INVITE THE LOCAL COMMUNITY TO ATTEND AND ENJOY DRINKS AND NIBBLES AT PHOENIX PLAZA.

REGISTER VIA THE LINK BELOW AND DON'T FORGET TO BRING ALONG YOUR BUSINESS CARD TO ENTER THE DOOR PRIZE.



WEDNESDAY 31ST JULY | 5PM - 7PM

PHOENIX PLAZA

120 KONKERBERRY DRIVE, KUNUNURRA

[HTTPS://WWW.SURVEYMONKEY.COM/R/X9KVCQG](https://www.surveymonkey.com/r/x9kvcqg)



Join us for an evening with the Eni. They are an integrated energy company working across 61 countries and are constantly working to make our energy mix increasingly sustainable, with the goal of a fair and inclusive transition and full decarbonisation by 2050.

They have current operations near the East Kimberley and would like to consult with you regarding their upcoming project.

Phoenix Plaza

Wednesday 31st July, 5pm - 7pm

enjoy drinks and nibbles on the night

Register here: <https://www.surveymonkey.com/r/X9KVCQG>



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Come along and have your say into one of the mining and energy related projects that are happening in our area!

There's a lot going on in the East Kimberley at the moment with loads of mining and energy interest in the surrounding land and water. Eni Australia are one of those companies with a site off the coast (that you may have been to if you're a fisho!), and they are keen to connect with the community.

Eni Australia are holding an event with the chamber tonight so come down for a short interactive presentation (and a few drinks and nibbles)

📍 Phoenix Plaza

📅 Wednesday 31st July, 5pm - 7pm

🍷 enjoy drinks and nibbles on the night

Register here: <https://www.surveymonkey.com/r/X9KVCQG>



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CHAMBER OF COMMERCE AND INDUSTRY

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EKCCI Members Update - 29th July 2024

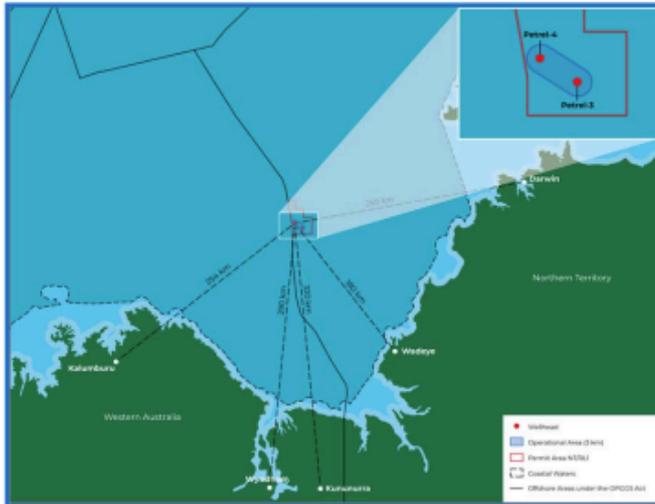
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PUBLIC NOTICE

Petrel 3 & 4 Monitoring & Decommissioning Environment Plan



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Eni is the operator of the Petrel Field in the Bonaparte Basin in Northwestern Australia.

The Petrel gas field is approximately 260km WSW of Darwin, and ~170km offshore of the WA coast within the Joseph Bonaparte Gulf.

Eni plans to decommission suspended wells, Petrel 3 & Petrel 4, within the Petrel field. The wells have been suspended since the 1980s and will NOT flow in the current condition. Loss of well control is not a credible risk.

The activities for monitoring and decommissioning will include surveys to confirm that the condition of the seabed equipment on the wells remains unchanged during this suspended phase. The actual timing of the activities will depend on a number of factors, including vessel and rig availability and weather conditions.

You may be a relevant person if the monitoring & decommissioning of the Petrel wells may affect you or your organisation's functions, interests, or activities.

[Please scan the QR code for detailed information](#)

WE WELCOME YOUR FEEDBACK:

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EAST KIMBERLEY
CHAMBER OF COMMERCE AND INDUSTRY

ENI AUSTRALIA

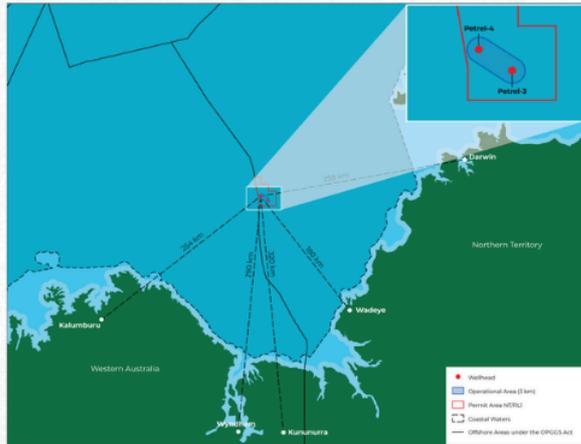
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CHAMBER OF COMMERCE AND INDUSTRY

News From EKCCI

East Kimberley Chamber Update - 9th of August 2024

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ENI Australia Business After Hours

Eni Australia are an integrated energy company that works across the globe. They have various activities in Australia focusing on the exploration, development and production of hydrocarbons and natural gas, and the renewable energy market. They currently have a project off the coast of Wyndham in the Bonaparte Basin in a site called Blacktip. They are in the process of acquiring approval for a new project within a similar area in the Joseph Bonaparte Gulf

Last week ENI Australia came to meet with the community to present this upcoming project Petrel 3 and Petrel 4 monitoring and decommissioning project. You can read more about their environment plan and management of the project in their flyer below. If you would like to get in touch or have further questions please reach out to Mike Prime, Mike.Prime@external.eni.com



[Check out the flyer for more information](#)



Username: projects@ntsc.com.au

Forgotten your password? [Click here if you've forgotten your password](#)

Please find below some of the key highlights from this week for your interest:

SIA Federal Election Package

I attended the SIA Federal Election Package Webinar to discuss policy development in preparation for the Federal Election. I will be discussing some of the issues raised with the Board and members to gather feedback that we can advocate for at a federal level.

Funding and Business Development Opportunities

I caught up with Anne Walters from NTG to discuss opportunities for the seafood industry including workforce training and retention issues. There are a number of potential funding or grant opportunities on horizon and I will keep members informed as those materialise.

Coffee catch up

Myself and the staff attended today's Stay Afloat coffee catch-up at the Duck Pond. It was great to see some new faces, you can see the [Facebook post from this morning's catch up](#).

FRDC 2023-029 Economic Footprint Project

Ewan from Ridge Partners is making excellent progress on the 10-year data analysis. Concurrently, BDO EconSearch has begun working on the [projects Case Studies](#), having already conducted workshops with each of the three sectors. The data collection from Humpty Doo Barramundi, Mud Crab, and Spanish Mackerel Fishery has commenced.

Farewell Anisa Rahman

Anisa last working day with NTSC will be on 29 July 2024. It has been a pleasure working with Anisa and we wish her all the best for the future, I know that she will be a success at whatever she puts her mind to.

NT Stay Afloat Coordinator

I had the opportunity to sit down with Skye Barrett to discuss the vitally important work that she is doing regarding raising awareness around mental health in the Seafood Industry with the [Stay Afloat](#) initiative. I am committed to assisting her in any way possible. Look out for each other and if you are in need of assistance please reach out to [Skye](#).

Eni Energy Bonaparte

Eni is the operator of the Petrel Field in the Bonaparte Basin in Northwestern Australia. The gas field is approx. 260km WSW of Darwin, and ~170km offshore of the WA coast, where they plan to decommission suspended wells. The activities for monitoring and decommissioning will include surveys, [click here to view the public notice](#).

Deloitte's research survey

The Australian Food and Agriculture Industry Taskforce is undertaking a research project looking into the level of adoption of climate-smart practices in the Australian agriculture sector. The aim of the research is to identify pathways towards Australia having a thriving climate resilient food and farming system. [Click to take the survey](#).

News

- [ABC Want to buy sustainable seafood? These tips can help](#)
- [Sydney Fish Market Launches 100 Species – a new content hub that to challenge consumers to step outside their comfort zone and embrace often overlooked seafood](#)
- [Phys Org Better management of the Australian seafood industry can create resilience to food shocks](#)
- [Seafood Source Study finds climate change, antimicrobial resistance increasing prevalence of vibrio in seafood](#)

e-Newsletters

- [Business Bulletin July 2024](#)

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Nickel bust a gain for gold

ADRIAN RAUSO

There has been a silver lining from the implosion of the local nickel mining industry for WA's gold producers needing all hands on deck to capitalise on the precious metal's record price.

BHP's WA Nickel business is the latest — and largest — domino to fall in the State after a tsunami of Indonesian supply.

The BHP arm sustains 3000 workers and although on Thursday the Big Australian promised employment for the majority of its affected workforce, there will inevitably be job losses.

Panoramic Resources' collapse stung nearly 400 workers, Wyloo shuttering its Kambalda mines left about 265 in the lurch, First Quantum Minerals mothballing Ravens-thorpe severed 530 jobs, and IGO's decision to pause construction of the Cosmos mine skittled 400 roles.

But the job losses have been fortuitous for WA's large stable of gold miners who have been grappling with a tight labour market while ramping up production to take advantage of a gold price that crossed all-time highs in April.

Among those to benefit are in-

dustry heavyweights Northern Star Resources, Regis Resources and Westgold Resources.

Westgold boss Wayne Bramwell says the company has had 80 workers start in the past two months.

Of that cohort, nickel castaways account for 25 — and 20 are new to the mining industry altogether.

"We've ended up getting a few people out of Panoramic and IGO and that has certainly helped, although it is bloody sad in terms of the macro picture," he told The West Australian on Monday.

"But our focus over the past 12 months has really been trying to bring new people into the industry.

"Because that's been the trouble in the whole West Australian mining space since COVID, everyone's been cannibalising each other's staff, driving the cost up."

Westgold will have five underground mines if its major acquisition of Karora Resources gets the green light at the end of this month. Mr Bramwell said most of the nickel joiners have underground mining experience.

Underground is where the labour pains have been felt the most, according to Regis Resources chief executive Jim Beyer, who

spoke to The West Australian days prior to BHP's WA Nickel announcement on Thursday.

"The labour market has always been pretty tight for skilled people, certainly from the underground perspective," he said.

"Last year and earlier this year, Liontown's Kathleen Valley underground project got a bit scary there with the reported number of operators and jumbos they would absorb.

"From an underground operation point of view, particularly jumbo operators, a heading is a heading whether it's hard rock nickel or hard rock gold."

Mr Beyer said the "incredibly sad" mine closures by Panoramic and Wyloo allowed mining services contractor Perenti to plug gaps at Regis' mines, but it wasn't the quick fix to all of the gold miner's cost headaches.

"There's still plenty of inflationary pressure around, sure there might be a little bit more skilled labour, which means your productivities and your equipment productivities go up," he said.

"But you've still got things like salary pressures and high diesel costs to contend with."



Westgold boss Wayne Bramwell. Picture: Megan Powell



From 1 July, the Regional Pensioner Travel Card replaces the Country Age Pension Fuel Card.

The Travel Card provides eligible pensioners with a subsidy of \$675 per year to support their travel needs.

For more information, visit www.wa.gov.au/travelcard or call 1300 666 609.



Classifieds

Phone: 9482 2300 Place an ad: regionalclassifieds@wanews.com.au or go to kimberleyecho.com.au

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Eni House, 226 Adelaide Terrace Perth WA 6000
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Stitch in time to save minds

The yarn this gal will tell

Fia Walsh

A Darwin woman is attempting to set a new world record making the longest crochet chain while running a marathon, giving a whole new meaning to a runner's stitch.

Billie Barton is training for the Melbourne Marathon in October, developing a belt system to hold the more than 145.8m of crochet chain she will need to produce in order to beat the current record.

The 28-year-old has never attempted such a long run before, but was inspired to take on the knotty challenge to raise money for Beyond Blue after struggling with her own mental health.

"I have struggled a fair bit with depression and anxiety the last couple of years, and I've had really good support around me, friends and family," she said.

"There's so many people out there that don't have the support that they need, and organisations like Beyond Blue are



Billie Barton is attempting to break the world record of the longest crochet chain made while running a marathon, raising money for Beyond Blue. Pictures: Pema Tamang Pakhrin



chose to race in Melbourne for the home-crowd support and accountability.

"I want to have friends come at maybe 5km intervals and hand me different balls of yarn as I need it," she said.

"Plus hopefully a good crowd cheering me on can get me crocheting a bit faster ... now everyone knows about it there's no backing out!"

The current Guinness World Record for the longest crochet chain made while running a marathon was set by British woman Louise Warwick in Manchester on April 16, 2023, reaching 145.8m.

Donate to Beyond Blue at: <https://melbmara2024.grassrootz.com/beyondblue/billie-barton-1>

helping to provide it - I've found the main thing you need is people there for you."

Crocheting itself has become a form of mindfulness for Ms Barton ever since a friend taught her how to make a stubby holder a decade ago.

"We sat on the beach, drinking beers, learning how to crochet and I just kind of became

addicted to it," she said.

It has helped manage her anxiety, as well as build community through crochet workshops she hosts locally.

"To get your hands going kind of slows you down a bit," she said.

"It's really rewarding seeing this group of people who, at the start, all feel pretty unsure if

they can do it, and by the end everyone can - and they seem really proud of themselves."

Ms Barton also runs a business making crochet bags from her Millner home, stocking Baggins Bags at Nightcliff's Sister Buffalo shop, pop-ups across the NT, and in Melbourne.

Despite the professional cro-

chet credentials, Ms Barton's marathon training has required fine tuning her hand-eye coordination.

"I was on a hike recently and had some yarn so crocheted while walking the Jatbula Trail, just to start getting the muscle memory and get comfortable with not looking."

Originally from Victoria, she

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Joe calls time on election bid

Biden bows to mounting pressure

Tom Minear
in Washington

US President Joe Biden has caved to a relentless internal rebellion and abandoned his re-election campaign, endorsing Vice President Kamala Harris to take on Donald Trump in November's election.

His decision to drop out capped one of the most extraordinary collapses in American political history, which was sparked by Mr Biden's disastrous debate performance against Trump last month.

And it comes just a week after Mr Trump survived an assassination attempt in Pennsylvania.

Having defiantly ignored calls by Democratic leaders for him to quit, amid concerns he was too frail to serve for four more years, the oldest president in history shocked the world by announcing he would drop out in a letter posted on social media on Monday morning Australian time.

“While it has been my intention to seek re-election, I believe it is in the best interest of my party and the country for me to stand down and focus entirely on fulfilling my duties as president for the remainder of my term.”

President Joe Biden

“While it has been my intention to seek re-election, I believe it is in the best interest of my party and the country for me to stand down and focus entirely on fulfilling my duties as president for the remainder of my term,” Mr Biden said.

He offered his full support for

Ms Harris to take his place at the top of the Democratic ticket, with the 59-year-old saying it was her “intention to earn and win this nomination”. While she received a flood of support from top Democrats, including former president Bill Clinton and 2016 nominee Hillary Clinton, the party's congressional leaders and former president Barack Obama did not immediately endorse her.

“We will be navigating uncharted waters in the days ahead,” Mr Obama said.

“But I have extraordinary confidence that the leaders of our party will be able to create a process from which an outstanding nominee emerges.”

Trump, the former Republican president who was confirmed as his party's nominee last week, attacked Mr Biden as “the worst president, by far, in the history of our nation”.

“He was not fit to serve from the very beginning, but the people around him lied to America about his complete



CONTENDERS LINING UP

KAMALA HARRIS

Born in Oakland, California, Harris (right) is the first female Vice President



and the highest-ranking female official in US history, as well as the first African-American and first Asian-American to hold the office. Her nomination would be in some ways the most simple, given she's already on the ticket and is the beneficiary of the same “donation stream,” as Biden.

GAVIN NEWSOM

The California governor (right) has previously expressed no interest in entering the contest, despite being tapped as a likely contender by pundits for some time.

After Biden's announcement, Newsom posted a statement on social media praising the president's leadership and calling him a “history-making president.”

GRETCHEN WHITMER

Whitmer's name has been prominently mentioned as a potential successor since the presidential debate. However, the two-term governor of Michigan (left) is more likely to run in 2028.

JB PRITZKER

Longtime Democrat Pritzker, 59, (right) has been Illinois governor since 2019. He's been a strong voice on issues like gun control and reproductive rights.

MICHELLE OBAMA

Popular from her time as first lady, Obama (right) has previously ruled out running for the top job.



and total mental, physical and cognitive demise,” he said.

Trump's running mate JD Vance and other leading Republicans called on Mr Biden to stand down as the President rather than remaining in the White House until January.

The 81-year-old – who entered the US Senate in 1972 – said he would address the nation later this week, having made the announcement while at home with Covid.

“It has been the greatest honour of my life to serve as your President,” Mr Biden said.

It marks the first time since Lyndon Johnson in 1968 that a sitting US president will not seek a second term.

In recent weeks, Mr Biden had claimed only the “Lord Almighty” could convince him to drop out, before later conceding he could reconsider if his doctors raised concerns. A senior White House official maintained medical issues were not a factor in his decision.

He tried desperately to re-

vive his flailing candidacy after the debate, in which he repeatedly coughed, stumbled and lost his train of thought.

But a series of interviews and campaign appearances, as well as what the White House called a “big boy” press conference, failed to quell concerns among party powerbrokers.

In the days before the attempted assassination of Trump, Democratic congressional leaders privately lobbied Mr Biden to quit, before their warnings leaked late last week in a bid to up the pressure on him. He discussed dropping out with his closest advisers and family at his Delaware home on Saturday (local time), before locking in his decision the next day and informing Ms Harris.

Democratic donors – who had turned off the cash tap to the campaign as they demanded Mr Biden drop out – greeted the announcement by injecting more than \$US30m into the party's election effort.

Coomalie council becomes the second suspended this year

Gera Kazakov

Another Territory council has been placed into official management – this time in the Top End – with all elected members suspended from office.

Local Government Minister Chansey Paech placed the Coomalie Community Government Council into official management, suspending all elected members, on Tuesday.

The move makes Coomalie the second council to have all elected members suspended this year, after the same happened to Barkly Regional Council last month.

Mr Paech said a “number of deficiencies” were identified in the “conduct of the council's affairs”, leading to a “failure” by the council to meet its objectives under the Local Government Act 2019.

“The council has been distracted from its objectives to provide open, responsive and accountable government and to act in the best interests of the community as a whole,” he said.

“My decision today paves the way for better-functioning services across the communities served by the council, and a more stable future for the people of the Coomalie region.”

According to Mr Paech, Cathryn Hutton has been appointed investigator to investigate the council's affairs. Her report on her findings is due on March 14 next year.

Mark Blackburn will be the official manager of the council, with the decision having “no impact” on council staff, according to Mr Paech.

Coomalie Community Government Council operates just

south of Palmerston, stretching to Manton Dam in the north and Robin Falls in the south.

The 2000sq km council oversees 1400 constituents who reside in Adelaide River, Batchelor, Lake Bennett and other smaller townships.

Sharon Beswick was the current council president, with four other councillors also serving and one position vacant.

In the 2024-25 draft Coomalie shire plan, in her president's message, Ms Beswick said the council was committed to transparency.

“Like any organisation we experience some conflict from within, however as president I aim to unite members and wards to focus strategically on delivering for our community,” she said.

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Booze license for safer town

Wadeye plan to drink local

Gera Kazakov

A troubled community about 400km south of Darwin has put forward an application for a licensed clubhouse in the town, with the application saying it will be a “safe and responsible venue”.

The Murinbata Tribal Development Corporation has filed an application for a liquor license for a clubhouse in Wadeye, which – if approved – will operate four days a week, open from 5pm to 9pm, serving food, according to the liquor license application.

The application was filed by Murinbata Tribal Development Corporation chief executive Andrew Clark, with the application now open to community consultation until August 3.

The licensed clubhouse will be operating on Tuesday, Wednesday, Friday, and Saturday, with plans to open an hour earlier on Fridays at 4pm, according to the application.

If approved, the clubhouse



The Murinbata Tribal Development Corporation has filed an application for a licensed clubhouse in Wadeye. Picture: Jason Walls

will be a place “where people can have a drink and a chat with their friends and work colleagues at the end of day,” the application states.

The application states it will be a “members only” club which will serve food, mid-strength alcoholic drinks, and non-alcoholic drinks.

A four-drink limit per one transaction will be in place, and those on the banned drinks register will not be allowed in, according to the application.

“The operators will be vigilant in ensuring that behaviour

associated with the club and outside the club is closely monitored and penalties and sanctions are in place for negative behaviours and outcomes,” the application states.

The clubhouse is planned to be an extension of the existing store in the town, according to the application.

“It should be noted that the police station is about 200 metres from the proposed site of the club,” the application states.

Set to be run by the tribal corporation, the application

states the corporation “will proactively conduct all aspects of the service of alcohol in a responsible and professional manner, and in accordance with the germane legislation”.

It won’t be the first time the town will host a licensed premises, with a clubhouse operational in the town from the early 1980s until it was fully disbanded in 1995 due to “various issues”, according to the application.

Consultations for the new club were undertaken for “the past four years in earnest”, ac-

ording to the application. The licensed club in the town will negate the need for townsfolk from travelling into nearby communities – such as Pepimenarti, Darwin, or even Kununurra – to purchase alcohol, thereby mitigating the risk from long drives, and also stopping them from getting “trapped” in towns, according to the application.

“During travel to and from such centres, accidents occur and this results in people being maimed or killed,” the application states.

A licensed clubhouse within the town will also keep money in the local economy, according to the application, with the premises to also display plenty of material which will “not condone nor practice promotions that encourage excessive drinking”.

Security will be present at the clubhouse, with a bus also running to “take people home after each session,” according to the application.

The application for the clubhouse comes as the town – and region – saw bouts of violence explode, with up to 100 people being involved in a brawl in the town, which also saw a person shot with a crossbow.

But the clubhouse application is confident a licensed venue in the town – if operated correctly – could provide positive change in the town.

“The consultative team, led by Dr Bill Ivory, conducting these consultations, found that there is a majority opinion that a liquor facility in the community, that has stringent rules and regulations, will gradually stimulate more positive drinking behaviour around alcohol,” the application states.

“Over all, a changing of the drinking rights and behaviour associated, it was generally suggested could modify behaviour and minimise harm to the people of Wadeye.”

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Opposition Leader Lia Finocchiaro, Malak resident Bill Tulloch and CLP candidate Brian O'Gallagher.

Need a change to slash crime

Locals call on CLP to ensure action

Camden Smith

Retired public servant Bill Tulloch moved with his young family into his Malak home in 1981, when it was Darwin's most outer northern suburb and there was red clay still in the paddocks across the road.

Now in his fifth decade as a resident, Mr Tulloch fronted media cameras on Monday to call for a change of government to bring a different approach to crime and anti-social behaviour in his neighbourhood and for a more effective public housing policy.

"We started off with three-foot high pig-mesh fences and now we've got 15-foot high armoured gates with cameras because we don't feel safe," Mr Tulloch said.

"The whole community feels the same; we've banded together because we've had enough of the crime that goes on nightly at our place and we want to see some action and we're hoping the CLP will get on board and stop this from happening.

"I've been broken into and had my hammer thrown on the roof.

"When I reviewed the cameras, four kids broke in and

“The whole community feels the same, we've banded together because we've had enough of the crime that goes on nightly at our place and we want to see some action.”

Bill Tulloch
Malak resident

were walking around (the house) and if I had've woken up, I probably would have worn that.

"We've seen a lot of daily anti-social behaviour, swearing, people that just walk around doing stuff at two or three in the morning, not caring about people going to work. "It's just not on."

Mr Tulloch also said public housing needed reform.

"We need to make the Housing Commission (Territory Housing) responsible. Being

given a housing commission home should be a privilege not a right and if you don't look after it and maintain it, then consequences should happen."

CLP Karama candidate Brian O'Gallagher, said his party would approach crime differently if it won government on August 24.

Mr Gallagher pointed to a house across from the Tullochs' that had added razor wire-like metal teeth at the top of their fence to make it harder for intruders.

"That family, that mum and dad, take three-hour shifts at night to keep an eye on the place to keep their family safe," Mr O'Gallagher said.

"Everyone feels neglected. This is absolutely wrong. Enough is enough."

Opposition Leader Lia Finocchiaro said the CLP would move on week one of parliament "to give police the powers they need to protect our community".

Karama is one of the government's safest seats, with Ms Ah Kit winning 59.8 per cent of the two-candidate preferred vote in the 2020 election.

The government were contacted for comment.

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\$250,000 for suicide prevention

Alex Treacy

Twenty-eight community organisations in the Northern Territory have shared in more than \$250,000 after successfully applying for the government's 2024-25 Suicide Prevention Grants program.

The money will go towards delivering local activities to create positive and inclusive spaces to strengthen community resilience and raise awareness about suicide prevention.

After receiving a grant last year, the Darwin Dragons Rugby Union Club ran two suicide prevention game rounds last year in partnership with TeamHEALTH, Headspace and Catholic Care.

The club also delivered sessions for a range of age

groups to provide practical strategies for coping, resilience and managing emotions.

The club will continue this important engagement this year, after receiving another grant this round.

Other organisations to receive a grant include Xavier Catholic College in Wurrumiyanga, Galiwin'ku Women's Space in East Arnhem and Young Yarning in Central Australia.

Xavier Catholic College will run a social and wellbeing program for young men; Galiwin'ku Women's Space will host a wellbeing and empowerment workshop; while Young Yarning will provide mental health first aid training to young Aboriginal and Torres Strait people.

Suicide Prevention Minister

Selena Uibo said the government was committed to reducing suicide in the Territory, which has the highest rate in the nation at 20.5 deaths per 100,000 residents.

"These grants are about building stronger communities by raising awareness and reducing stigma to ensure individuals seek help when they need to," she said.

"Whether it's building connections through sport, culture, education and community or developing skills in emotional resilience, we are working together to make Territorians and our communities feel safe and supported." Now in their seventh round, the Suicide Prevention Grants program has distributed more than \$1.65m to community groups.

Ita: ABC journos too sensitive

Sophie Elsworth

Former ABC chairwoman Ita Buttrose says journalists at the public broadcaster are "too sensitive" and "should just give up" if they cannot handle criticism.

Speaking on the ABC's Radio National breakfast program with host Patricia Karvelas on Monday, Buttrose made pointed criticisms of reporting at the taxpayer-funded broad-

caster, saying reporters should present both sides in debates.

"There's no harm in presenting both sides of an argument, and I don't understand the reluctance of some of our interviewees to do that," she said.

During the interview Karvelas said News Corp, publisher of this paper, had "gone after ABC frontline reporters and presenters pretty hard, including me".

"Is that something that you think is concerning and does it have a chilling kind of impact?" Karvelas asked.

Buttrose replied: "No, look, quite frankly I think you are all too sensitive about News Corp; let them do what they want to do ... If the ABC can't take the criticism then it should just give up."

Buttrose finished her five-year term at the ABC in March.

'Like I'm a breathing corpse'

Teen seeks jail for driver who hit her

Jason Walls

A teenage motorcyclist whose life was turned upside down by a distracted driver wants to see him spend the same month's time in jail she spent in a coma, a court has heard.

Moses Manohar Sundararaj pleaded guilty in the Supreme Court to one count of dangerous driving causing serious harm following the devastating crash in Tiwi in April last year.

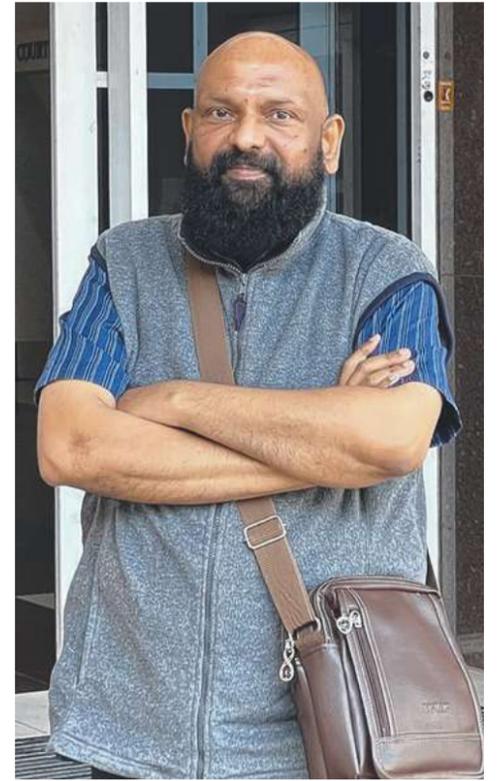
Crown prosecutor Steve Ledek said Sundararaj was driving his blue Toyota Yaris west on Rocklands Drive shortly before 6pm when he turned right into Royal Darwin Hospital.

The 17-year-old Suzuki rider was coming the other way and Sundararaj failed to give way, causing her to slam into the side of his car, flying over the top of it and landing on the road.

Sundararaj immediately contacted emergency services and remained at the scene before the teenage girl was rushed inside the hospital suffering multiple broken bones,



The scene of a crash that injured a 17-year-old girl when her motorcycle was struck by a car driven by Moses Manohar Sundararaj (right) in Tiwi in 2023. Main picture: Courts NT



brain haemorrhages and a traumatic brain injury.

She was later transferred to Palmerston Regional Hospital for further rehab after spending more than a month in RDH, but remained unable to work.

Mr Ledek said the crash had been "life-changing" for the girl, with severe physical, emo-

tional and financial impacts that would affect her for the rest of her life.

"She felt that the person that she was effectively died that day on the road, being replaced by this incapacitated, injured and traumatised individual," he said.

"It's a tragic instance where

this life has been irreparably damaged and irreversibly changed," Mr Ledek said.

In a victim impact statement tendered to the court, the girl said she felt "like I'm a breathing corpse still at times" and "I hope that man suffers for basically killing a 17-year-old girl".

"I'd consider me happy (my

happiness is just a legend at this point) if he was incarcerated without parole for the 31 days stolen from me in 2023 - 31 days in a coma and lost to amnesia," she wrote.

"If I find out this criminal case was closed with injustice I will not rest in finding my own justice for his actions."

Chief Justice Michael Grant adjourned the hearing for further submissions on August 6 so a home detention assessment could be prepared.

"He's either got to do some period of time and then have an order suspending sentence or he needs a period of home detention," he said.

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A day of social connection

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Enriched by champion's lasting legacy

Honouring T Wurramarrba

Jason Walls

Members of the Top End community have come together to remember “a tireless champion for the Anindilyakwa people” and a “friend, brother, father, son and uncle” who was “deeply committed to his community”.

Loved ones and dignitaries came together at Darwin's Christ Church Anglican Cathedral on Wednesday for a state memorial to former Anindilyakwa Land Council chairman T Wurramarrba.

In her eulogy, current ALC chairwoman Cherelle Wurrawilya said Mr Wurramarrba was “a remarkable man”, who would be remembered as a “highly respected leader who was strongly dedicated to his family and his people”.

She said Mr Wurramarrba's signing of the “groundbreaking” Groote archipelago local decision-making agreement in 2018 was “a key moment for our people, giving us the authority to make decisions about health, education, justice, housing, local government and economic development”.

“This was Mr Wurramarrba's vision of a sustainable future for the Anindilyakwa people and he worked tirelessly to make it a reality,” she said.

“Having control of our destiny and leading by example for all Aboriginal people was a cornerstone of Mr Wurramarrba's lifelong work.

“Thanks to his vision, fearless leadership and selfless service the Anindilyakwa people have benefited greatly from local decision-making.”

Ms Wurrawilya said Mr Wurramarrba was “a great man” and “a great leader”, who “believed passionately in Anindilyakwa advancement”.

“During Mr Wurramarrba's time as chair, the ALC delivered new housing to reduce overcrowding, secured significant funding to build a high-level boarding school on Bickerton Island and build an alternative-to-custody facility to break the (cycle) of high incarceration rates,” she said.

“He oversaw more women and young people joining the ALC board and taking up important leadership positions.

“The Anindilyakwa people feel the loss of Mr Wurramarrba deeply, yet we are immensely enriched by the enduring legacy he has left behind for us.”



A state memorial for late former Anindilyakwa Land Council chairman T Wurramarrba (left) at the Christ Church Anglican Cathedral in Darwin. Picture: Jason Walls

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Security rules over impressive jet

Harry Brill

Aboard Italian aircraft carrier ITS Cavour last week, an NT News cameraman snapped more than a dozen shots as a roaring F-35 jet blasted into the skies above.

As the stealth jet disappeared into the clouds, an Italian officer approached the snapper and politely requested the camera's SD card be handed over.

The request was expected.

Prior to boarding the aircraft carrier, media members were briefed all imagery and footage of the F-35 in action needed to be captured on a single SD card, which would then undergo a security check by military officials.

Any photographs or footage deemed inappropriate for possession would be deleted, while content assessed as satisfactory would be returned to its owner.

To highlight the distinct security measures being taken to protect the stealth jet, two AV-8B Harriers had touched down on deck minutes beforehand.

However, only the F-35s imagery interested the Italian officer – and that was taken for inspection.

About 18 hours after the imagery had been taken for examination, the SD card was



On board the Italian aircraft carrier Cavour.

returned to the NT News. According to an aviator involved in flying activity Exercise Pitch Black 2024, the cagey examination was to ensure no sensitive details about the cutting edge aircraft are leaked to potential adversaries.

The Italian navy's thorough vetting of the images also followed special measures to protect the fifth-generation jet earlier this month at the RAAF Base Darwin open day, in which 30,000 visitors poured through the gates eager to get a glimpse of the assortment of jets which were on display.

The F-35 and F-22 jet displays – considered two of most advanced aircraft on Exercise Pitch Black 2024 – differed from the rest.

Fenced off with a 6m buffer, onlookers were resigned to having to admire the two

cutting-edge jets from a distance, while all other jets could be examined from mere metres and some airframes could even be boarded for a tour.

Across the 20 nations participating in Pitch Black, only three services have dispatched F-35s. The Royal

Australian Air Force (RAAF) has F-35As operating out of RAAF Base Darwin, while the Italian navy have been launching F-35Bs from their aircraft carrier.

The Italian air force are is flying both variants across the Top End.

The US Air Force boasts the F-22 Raptor, valued around US \$350m (\$540m) per aircraft, which shares similar qualities to the F-35 as a stealth jet and is operating out of RAAF Base Tindal for the duration of the exercise.

Exercise Pitch Black 2024 marks 10 years since the F-35A was brought into the RAAF.

To date, more than AUD \$4.1bn in contracts has been awarded to Australian industry to progress the acquisition of 72 of the stealth jets, with more than 70 companies involved.

Election signs taken down

CLP donor seen removing corflutes

Nathaniel Chambers

One of the CLP's largest donors, Ray Bail, has been spotted cutting down corflutes belonging to the ALP and Greens just weeks before the Northern Territory election.

The millionaire took to the streets on Friday morning to cut down corflutes belonging to the opponents of the CLP, which his company Ray Bail Investments Pty Ltd made a \$204k donation to.

The corflute for Labor candidate for Port Darwin Brian Manning was among those torn down on the corner of McMinn and Daly streets about 9am. Corflutes promoting CLP candidate Robyn Cahill remained untouched.

CLP president Shane Stone told this masthead the corflutes were taken down in response to the requests of property owners allegedly going unheard by the ALP.

"These owners have specifically refused the ALP to put up



CLP donor Ray Bail spotted tearing down ALP corflutes.

their signs," he said. "If the ALP have just presumed, their signs will of course be removed at the direction of the owners."

"This is happening right across Darwin and Palmerston, and Ray is not the only one charged with this responsibility, there are other party members too. The owner has the right to request signs be removed, but they just ignore it, there's a lot of strong feeling against this government."

However, NT ALP party secretary Karlee Dalton said the

behaviour went against the democratic process.

"The CLP and their mates in big business think that the rules don't apply to them," she said. "Ray Bail, whose company, Ray Bail Investments Pty Ltd made a \$204,000 donation to the CLP, thinks he can trample on the Territory's democratic process and rip down the signs of political opponents."

NT Police Commander Daniel Bacon said vandalism of corflutes was apparent in the lead up to every election.

"Every election we see corflutes across the NT subjected to vandalism," he said.

"Vandalism constitutes criminal damage to property and offenders could face a maximum penalty of 14 years imprisonment under the Criminal Code Act, subject to the deliberations of the courts if found guilty."

"Police urge people with information on vandalism to contact police on 131 444."

No charges have been laid.



Jessica Mauboy will perform at the National Indigenous Music Awards on August 10 at Darwin Amphitheatre. Picture: David Hancock

Chance to win double pass

We're giving a lucky NT News digital subscriber the chance to win a double pass to National Indigenous Music Awards at 7pm ACST on August 10 at Darwin Amphitheatre, NT.

KEY EVENT POINTS

- 20th anniversary event for the National Indigenous Music Awards

- Ceremony held at 7pm on August 10, 2024 at Darwin Amphitheatre

- Performers will be Jessica Mauboy, Dan Sultan, 3%, Miss Kaninna, Arrkula Yinbayarra (Together We Sing) feat. Dr Shellie Morris AO, Birdz and Fred Leone, Eleanor Jawurlngali and Emily Wurramara
- There will be a special

- 20th anniversary performance

- Finalists include BARKAA, The Kid Laroi, Electric Fields

- It's a night of celebration for First Nations art RRP: Up to the value of \$96.

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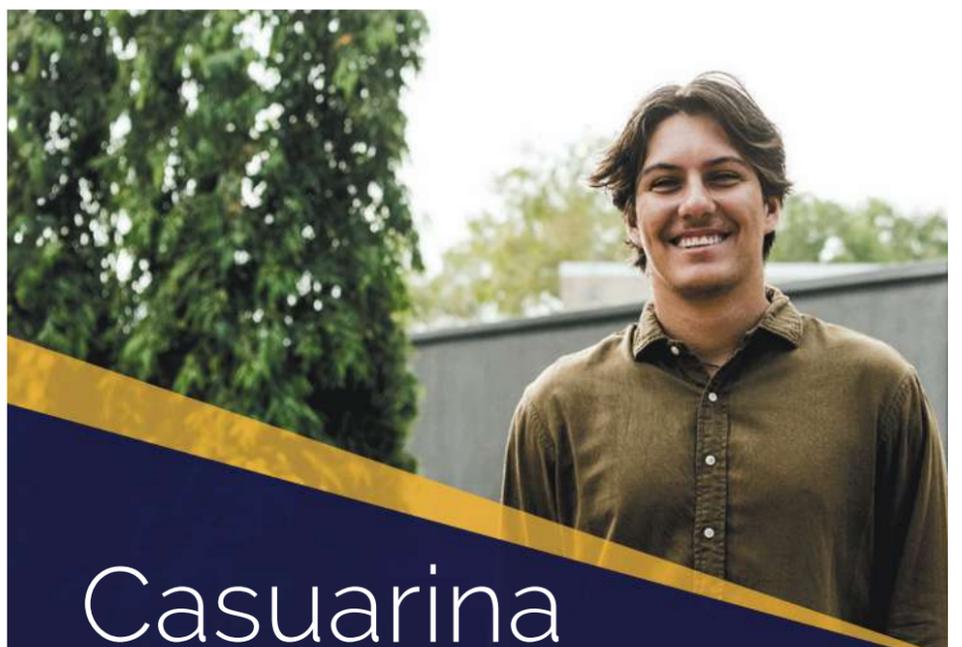
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Lush gardens and privacy beckon Camera ready home for sale

Courtney Snowden

An elevated home starring in the Top End Wedding sequel alongside Miranda Tapsell and Gwilym Lee has been listed for sale in the northern suburbs of Darwin.

The four-bedroom home at 6 Lovegrove St, Ludmilla, was used as a filming location in the upcoming comedy series, Top End Bub, due to stream on Prime Video next year.

Owners Steve and Bron Glover said they held off putting their home on the market after being approached to have it feature in the show.

"I think they were impressed with the setting and the Darwin feel of the home," Mr Glover said.

"And we're the last house in a quiet street - our peak hour is Monday morning when the rubbish truck comes."

Selling agent Simon Watts, of Real Estate Central, said in the months the property was used as a shooting location, it

wore a "costume" of bright paint, rattan furnishings, knick-knacks and decals on cabinetry and benchtops.

"The house has been painted about four times this year," he said.

Mr Glover said once shooting wrapped, the home was returned to "boring old neutrals".

"We think it looks great, though," he said.

Set on a 986sq m block with lush tropical gardens and a pool, the home features all the hallmarks of a classic elevated - louvres, timber floors, a big deck - but it has been updated for modern living.

Upstairs, there are three bedrooms and two bathrooms, along with an open plan living, dining and kitchen area that flows out to the deck and front veranda.

Downstairs there is a fourth bedroom, third bathroom, storage space and plenty of undercover parking.

"We wanted to maintain that Darwin bungalow styling but

we wanted improve that indoor-outdoor flow and add luxuries like the pool," Mr Glover said

"We added on some comforts like the ensuite, a modern kitchen and a storage area.

"We also wanted to personalise the garden - it was very overgrown in 2012.

"We elevated the pool, which is a concrete construction, and it has that infinity edge where the waterfall disappears into the jungle at the back.

"Our favourite part of the home is our deck that looks out over the yard and towards the street easement, which is an open blush block."

Mr Watts said the property was a great example of a classic Darwin elevated, with plenty of character and tropical outlook.

"It has character and charm but it is immaculately presented," he said.

"It feels like a rural property but you're in the heart of the suburbs.



The home at 6 Lovegrove St, Ludmilla, has hit the Darwin property market after being used as a filming location for Top End Bub, starring Miranda Tapsell and Gwilym Lee (right).

"You can sit on the balcony and see nothing but beautiful established trees and gardens."

Mr Watts said while the star power of the home had attracted attention, genuine buyers were more interested in the beautiful Territory classic itself.

Mr Glover said the home

would suit families or couples looking for a private home close to the city, schools, shops and markets.

But he warned the new owners may have location scouts knocking on the door at some point, as Top End Bub was not the home's first foray into film - it was a third starring role.

In the early 2000s, 6 Lovegrove St was used for an ABC production, which didn't go to air, and in 2017, for a series of TIO commercials.

The property is for sale via open negotiation through Simon Watts and Ella Carling of Real Estate Central

Eni Energy Bonaparte Pty Ltd
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c/o Eni Australia Ltd
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Public notice - relevant persons for Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

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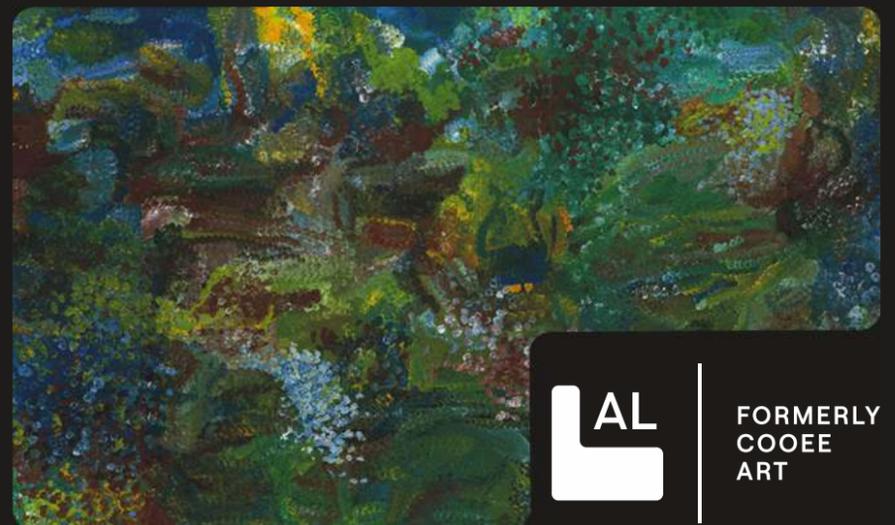
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Australia's oldest Indigenous fine art gallery & auction house will be in

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Chopper pilot jail bid lost

Prosecutors fail in Supreme Court

Jason Walls

Prosecutors have lost a bid to have businessman and helicopter pilot Michael Burbidge locked up after a judge dismissed an appeal of his “relatively large fine of \$15,000”.

The Remote Helicopters Australia owner (inset) pleaded guilty in the Darwin Local Court in March to destroying a phone belonging to Netflix star Chris “Willow” Wilson following his death in a chopper crash in Arnhem Land in 2022.

He was convicted and fined, but Crown prosecutor Steve Ledek appealed that ruling to the Supreme Court, arguing “a penalty of actual imprisonment was justified” — albeit conceding the single day Burbidge spent in prison after his arrest would have sufficed.

Mr Ledek had argued Local Court judge Tanya Fong Lim should have considered the possibility that Burbidge “effectively avoided” a charge of attempting to pervert the



course of justice. “That is so (the prosecution contended), because now that the true evidential value of the data on the phone will never be known, the respondent can only be charged under s 102 of destroying the phone knowing that it ‘might be required as evidence in a judicial proceeding’, for which the maximum penalty is the much lesser period of three years’ imprisonment,” the appeal judgment reads.

In response, Burbidge’s lawyers argued “it would be entirely inappropriate, in any sentencing exercise, for a sentencing judge to speculate about what more serious offences a person might have committed”.

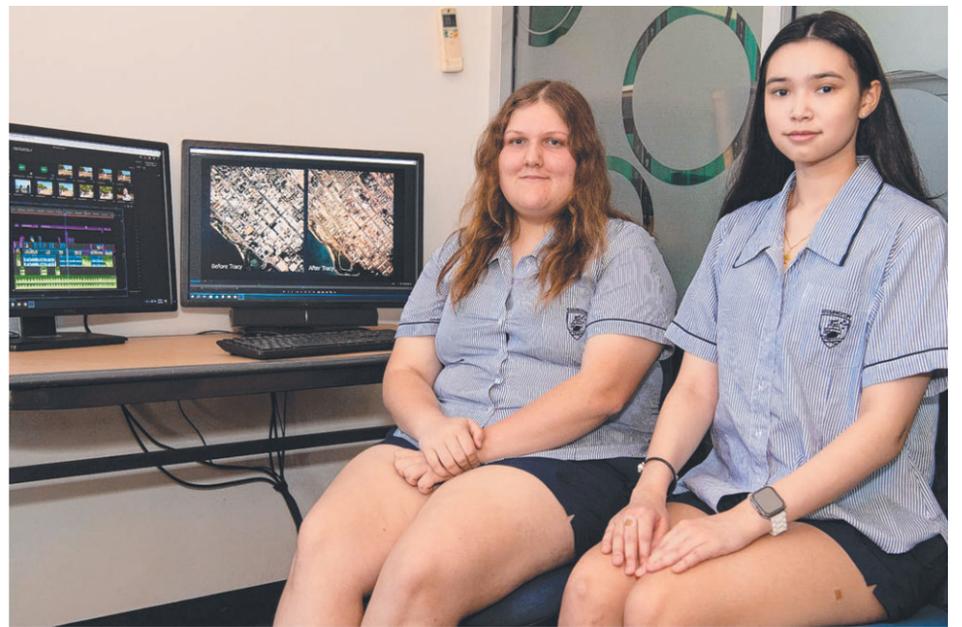
In dismissing the appeal, Justice John Reeves also

rejected Mr Ledek’s “some-what remarkable proposition that I should have regard to the more serious offence the respondent might have committed, or with which he could have been charged”.

“Clearly, the respondent can only be penalised in respect of the offence with which he was charged and to which he pleaded guilty,” he said.

“Minds may differ as to whether this sentence was towards the lower end of severity, having regard to the seriousness of the respondent’s offending ... Nonetheless, in all the circumstances, I do not consider it could be said to be so inadequate that it shocks the public conscience.”

Last month, Burbidge’s co-accused, former NT Police officer Neil Mellon, was jailed for eight months, suspended after three months, after also pleading guilty to destroying the phone as well as obtaining benefit by deception and leaking police secrets.



The Essington School media studies students Emily Banfield and Jovianne Tan were part of Pitch Black’s 2024 civilian project. Picture: Pema Tamang Pakhrin

Students get inside track

Exercise Pitch Black is continuing to impact young Territorians even after the jets have stopped for another year.

The Essington School student Emily Banfield was one of five media studies pupils selected to work on a civilian project — alongside journalists from the Bavarian Broadcast Corporation — as part of Germany’s involvement in the exercise.

Ms Banfield said she started taking media studies as a subject in year 8, and continued through to year 11.

Now in year 12, she is no longer enrolled in the subject but said she could not pass up the opportunity to work with industry experts.

“It was a really good experience — I got to use equipment that I’ve never used before that the Germans brought over,” she said. “It was a great opportunity to go over to the RAAF base because with the strict security measures, it’s very hard to get in and so we’re very lucky to be able to get in and get up really close to the planes.”

“We even got to sit in one as well, it was very lucky for us.”

Ms Banfield worked alongside peers Jesse Wallace, Charlie Dann, Jovianne Tan and Georgia Park on the project.

Senior media and digital communications teacher Karlie Weinert said the student pieced together three short films throughout the project. She said the first film covered Exercise Pitch Black, while the others touched on Cyclone Tracy and Gen Z in Australia.

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Business surrender scheme for vaping goods

Businesses that have vaping goods that can no longer be supplied in Australia can surrender them via the TGA’s business surrender scheme.

The scheme is available to businesses possessing more than:

- 280 vaping devices
- 1,800 vaping accessories
- 12,000mL of vaping substance.

Pharmacy and non-pharmacy retailers, wholesalers, manufacturers, importers, exporters, transport or storage providers can surrender vaping goods without committing a supply or possession offence.

To participate, businesses must notify the TGA before 1 September 2024 by email to vapereturn@health.gov.au

Search ‘TGA Vaping hub’ for more information.



Australian Government
Department of Health and Aged Care
Therapeutic Goods Administration

Findings on light plane crash that injured six people

Engine, pilot, to blame

Jason Walls

The Australian Transport Safety Bureau has handed down its findings from a horror plane crash that seriously injured several people on Groote Eylandt last year, nominating pilot error as among its causes.

Three passengers on the Katherine Aviation operated Cessna 210L suffered serious injuries and the pilot and two other passengers suffered minor injuries when it crashed just after takeoff on June 16.

The ATSB found the aircraft's engine mixture control was "probably not set to full rich prior to commencing the takeoff, resulting in reduced power and unanticipated engine behaviour".

"Likely surprised by the partial power loss, compounded by limited Cessna 210 experience, the pilot took no action to resolve the situation and did not effectively manage the attempted landing," the ATSB found.

"The pilot's takeoff safety self-brief and the aircraft operator's documented example brief did not include the actions to be taken in the event of a partial power loss.



The Australian Transport Safety Bureau has handed down its findings into a plane crash that injured several people on Groote Eylandt in June 2023. Picture: ATSB

"Additionally, the pilot had not completed weight and balance calculations for the flight and the aircraft departed 10kg over the maximum takeoff weight."

The ATSB also found the Cessna was "likely being operated with a time-expired engine-driven fuel pump" and the Civil Aviation Safety Authority issued Katherine Aviation with a safety alert the

day after the crash. It required the company to conduct a fleet-wide audit of all "time-lifed components", during which several further defects were identified.

"In response, the organisation agreed to implement a maintenance incident reporting system and discontinue the cross hire of aircraft to reduce engineering workload," the report reads.

The ATSB concluded the accident highlighted "the challenges pilots face when dealing with unfamiliar situations during critical phases of flight".

"Operators can manage these challenges by documenting known operational scenarios and ensuring pilots are thoroughly trained before undertaking line operations," the report reads.

"Pilots can mitigate the risk by familiarising themselves with aircraft systems and the operational environment.

"Additionally, forward planning, such as a well-structured takeoff safety brief, increases situation awareness, reduces mental workload under stress and increases the prospect of a safe and well-managed outcome in the event of an emergency."



NT Police are investigating after a man and woman crashed into two stationary vehicles after allegedly stealing packets of chuck steaks from a Top End shopping centre.

Cops hunt steaks pair for grilling

NT Police have called for witnesses after a man and woman were spotted allegedly stealing packets of chuck steak from a Palmerston Shopping Centre.

The pair entered the shopping centre on Temple Tce about 11am on August 6, when they took the packets.

The man, wearing a Mongols motorcycle gang shirt, was captured running from the store with the woman into the carpark near the grocery click-and-collect area.

Police said they then got into their silver Holden Commodore station wagon and drove out of the carpark, during which they allegedly hit two stationary vehicles.

Anyone with information or dashcam footage is asked to call police on 131 444, quoting reference NTP2400076649.

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Digging in for locals in jobs

Santos program awarded

Camden Smith

A Santos-inspired recruitment and employment program has won a national award for delivering training and job opportunities for Aboriginal people.

The Santos, KAEFER Integrated Services program took home the best social value initiative at the Chartered Institute of Procurement and Supply awards in Sydney this month.

The award recognised projects that delivered significant social value and community benefits, with nine Aboriginal cadets starting jobs at Darwin LNG facility this year after completing a scaffolding traineeship and another nine beginning traineeships in June in areas including mechanical fitting, boilermaking, administration, accounting and bookkeeping.

Santos Darwin general manager Peter Kirkpatrick said the award acknowledged the pivotal role training and education programs could play in



Santos administration trainee Vanessa Williams, NAIDOC 2024 Apprentice of the Year, did a supply chain traineeship with Santos in Darwin.

improving outcomes for Aboriginal Territorians.

"I am extremely proud of our Santos-KAEFER Employment Program," Mr Kirkpatrick said. "It's a genuine example of how Santos is taking real and practical action to help close the gap on Aboriginal disadvantage in the Northern Territory."

"The successful program is just one of several that Santos is rolling out in the Territory in coming months and years

aimed at maximising employment and training opportunities for Aboriginal Territorians.

"Our major projects such as Barossa Gas and the Darwin LNG Life Extension will allow us continue to develop and fund initiatives that will support local Aboriginal communities for decades to come."

KAEFER chief operating officer Trent Northover said the Santos partnership was about skills and jobs.

"We share an ongoing commitment to fostering the growth and development of Aboriginal Territorians and this program providing structure pathways that will lead to meaning, sustainable employment," he said.

The training award came after Santos administration trainee Vanessa Williams was named Apprentice of the Year at the 2024 NAIDOC awards.

A Tiwi Island woman, Ms

Williams first completed a supply chain operations traineeship at Santos' Darwin Supply Base.

After a varied career that included retail, education and hair dressing, Ms Williams began a pathway through warehouse and logistics and is now completing a Cert III in business administration traineeship at Santos DLNG.

"I have enjoyed every minute of my traineeships and I've

I have enjoyed every minute of my traineeships and I've gained valuable insights into the industry, honed my skills, and cultivated a new-found confidence

Vanessa Williams

gained valuable insights into the industry, honed my skills, and cultivated a new-found confidence," Ms Williams said. "My daughters have witnessed this transformation, learning the importance of perseverance and happiness in one's work."

"I've been fortunate enough to have the opportunity to travel back to the Tiwi Islands with Santos and speak directly with community about how training can impact their lives positively."

"Seeing my family and friends' children gain employment and traineeships in the oil and gas industry has been immensely rewarding, reinforcing my belief that everyone deserves equal opportunities for growth and success."

Government House

Open Days

FRIDAY 30 AUGUST 2024
3pm - 6pm

SATURDAY 31 AUGUST 2024
10am - 2pm

His Honour and Ms Jones invite the public to enjoy the historic State Rooms and beautiful tropical gardens of Government House at their leisure.

Refreshments, family activities and entertainment provided by local community organisations.



Everyone is welcome! govhouse.nt.gov.au

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PUBLIC NOTICE

BEEHIVE MULTI-WELL DRILLING

EOG Resources Australia Block WA-488 Pty Ltd (EOG) is planning to drill up to three exploratory wells in Commonwealth marine waters in permit area WA-488-P, with each subsequent well after the first depending on finding sufficient hydrocarbons. The Multi-Well drilling activity is located in the Joseph Bonaparte Gulf, a minimum of 77 kms off the Western Australian coastline and around 300 kms southwest of Darwin.

The activity is currently expected to take place between January 2025 and December 2029 across one or more drilling campaigns. Each well is expected to take 55 to 150 days to drill.

Although the Multi-Well Drilling Program covers up to three wells, at this time EOG plans to drill one single exploration well at Beehive, which could be drilled under the Beehive-1 Exploration Drilling environmental plan or the Beehive Multi-Well Drilling environmental plan, depending on project timing and objectives at the time.

To assist you in making your assessment, the current Environment Plan (EP) can be found via EOG's website. EOG is committed to continued open engagement to keep our stakeholders informed. You can access the website with the link below for the most up to date project information at any time.

<https://www.eogresources.com/australia> or QR Code



The EP can also be found on the NOPSEMA website here:

Beehive Multi-Well Drilling: <https://consultation.nopsema.gov.au/environment-division/7892/>

EOG is looking to gather information about the social, economic and cultural features near the EOG project area and requests feedback on the functions, activities, and interests in or around the project area that may be affected by our proposed activities. We will assess the merits of any objections or claims made and provide a response outlining our assessment of merit and any actions taken to mitigate the impact.

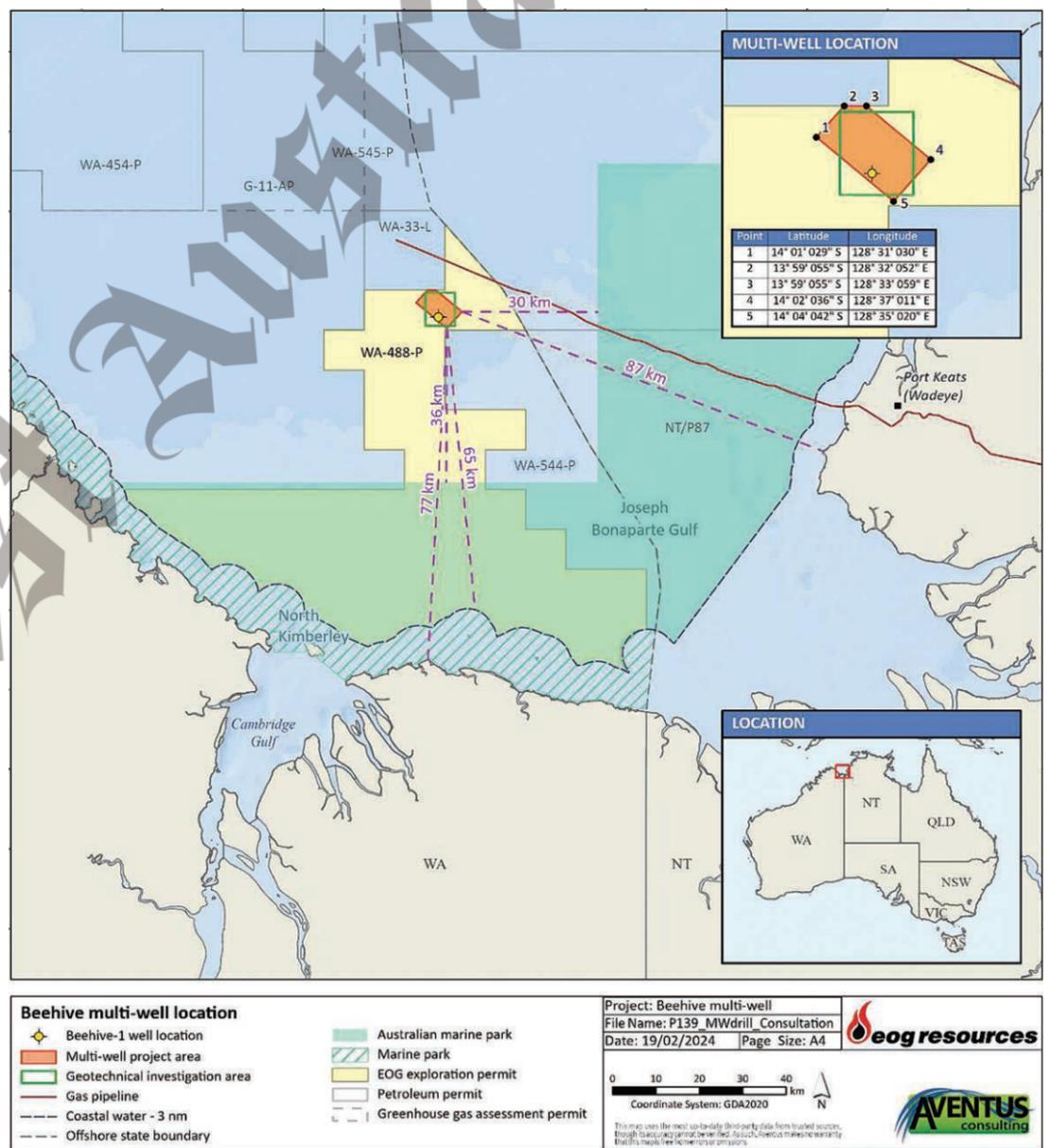
For further information, please contact us at:

Email: australia@eogresources.com

Local Consultant Representative Phone: **0472 519 027**

Mail: EOG Resources Australia Block WA-488 Pty Ltd.

c/o Xenith Consulting, Level 31, 10 Eagle Street, BRISBANE QLD 4000



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The West Australian

PUBLIC NOTICES



Government of Western Australia
Department of Planning, Lands and Heritage

**NOTICE OF INTENTION TO AMEND CLASS 'A' RESERVE 27004
KALBARRI NATIONAL PARK – SHIRE OF NORTHAMPTON
LAND ADMINISTRATION ACT 1997 (LAA)**

I, Anthony Kannis, Director General, Department of Planning, Lands and Heritage, under delegation of the Minister for Lands, give notice pursuant to section 45(5) of the *Land Administration Act 1997*, that it is intended to act as follows in relation to Class 'A' Reserve 27004 (Kalbarri National Park) in the following manner.

The Kalbarri National Park is located in the Mid West region surrounding the Kalbarri townsite and is approximately 95 kilometres north of Geraldton.

Class 'A' Reserve 27004 is set aside for the purpose of 'National Park' comprising an area of 182,962 hectares. Lot 6865 on Deposited Plan 241722 and unsurveyed land parcels within the reserve are proposed to be redescribed, under section 45(2)(d) of the LAA, as:

- Lots 440 and 441 on Deposited Plan 423689;
- Lots 442 and 443 on Deposited Plan 423690;
- Lot 445 on Deposited Plan 423691; and
- Lots 405 and 406 on Deposited Plan 426752.

The total area of Class 'A' Reserve 27004 will remain unchanged.

Prior to proceeding with this action, you have the opportunity to provide comments on the proposal within 30 days of the publication of this notice. To enable your comments to be taken into account or to arrange a viewing of the relevant plans, please contact Matthew Rule at the Department of Planning, Lands and Heritage by email to matthew.rule@dplh.wa.gov.au, by letter to Locked Bag 2506 Perth WA 6001, or by telephone on (08) 6552 4435, quoting the following reference numbers:

File No. 03139-1954

Case No. 2202581

**DIRECTOR GENERAL
DEPARTMENT OF PLANNING, LANDS AND HERITAGE**

DOPLH 22356



Government of Western Australia
Department of Water and Environmental Regulation

NOTIFICATION OF APPLICATIONS RECEIVED FOR WORKS APPROVALS, LICENCES, CLEARING PERMITS AND AMENDMENTS AND AVAILABLE FOR PUBLIC SUBMISSIONS AND/OR REGISTRATIONS OF INTEREST

In addition to this advertisement, the Department of Water and Environmental Regulation maintains a register of current applications which are open for comment on the Department's website (www.dwer.wa.gov.au). The register contains information on applications and the submission closing date for all comments. To receive notification of updates to the register, please subscribe at www.dwer.wa.gov.au/about-us/40-email-alert.

APPLICATIONS FOR WORKS APPROVALS AND NEW LICENCES

Bulk Material Loading or Unloading (Other Than Salt): Fulton Hogan Construction Pty Ltd (Rumah Baru Port Precinct (Rumah Baru)), HOME ISLAND COCOS (KEELING) IS (W6943/2024/1)

Solid waste facility: Community Resources Limited (Soft landing Limited), WANGARA (L9442/2024/1)

Sewage Facility: Studio Schools Australia Ltd (Manjali Studio School - Boarding School Wastewater Treatment System), KING LEOPOLD RANGES (W6944/2024/1)

Electric Power Generation: Mt Magnet Gold Pty Ltd (Mt Magnet Operations Hybrid Power Project), MOUNT MAGNET (W6945/2024/1)

Screening of Material: Perdaman Chemicals and Fertilisers Pty Ltd (Perdaman Chemicals & Fertiliser), BURRUP (W6946/2024/1)

Submissions may be forwarded to the Department of Water and Environmental Regulation, Locked Bag 10, Joondalup DC WA 6850 or by email info@dwer.wa.gov.au.

NOTIFICATION OF WORKS APPROVALS, LICENCES, CLEARING PERMITS AND NOTICES GRANTED, AMENDED OR GIVEN AND AVAILABLE FOR PUBLIC APPEAL

The Department of Water and Environmental Regulation updates a register of current decisions which are open to appeal on the Department's website (www.dwer.wa.gov.au). The register provides the decision dates of all works approvals, licences, and notices which are granted, amended or given and information on lodging appeals. To receive notification of updates to the register, please subscribe at www.dwer.wa.gov.au/about-us/40-email-alert.

Your views are welcome on any licensing matters.

Internet: www.dwer.wa.gov.au Email: info@dwer.wa.gov.au

Date 22 JULY 2024

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You may be a relevant person if the monitoring and decommissioning of the Petrel wells may affect:

- your spiritual or cultural connection to the land and sea country
- your business and recreational activities, such as fishing and tourism
- the functions or responsibilities of your organisation

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Diego's century celebration

ERNIE MANNING

Perth harness racing warrior Diego celebrated his 100th race in grand style by winning Friday night's \$31,000 Rotary Club Of Fremantle Pace (2536m) at Gloucester Park.

The Gary Hall Sr-trained \$2.70 favourite, driven by Maddison Brown, set a solid pace and rated 1:56.7 when beating stablemate Wildwest (\$11.70) to second by 2m.

The Miki Taker (\$4.20) charged from sixth position and finished a close third.

Eight-year-old Diego has rec-

orded 27 wins and 24 places, earning \$898,517 in his century of starts.

The bay continues to thrive and was frisking in lively fashion as Brown, 28, paraded him after Friday night's feature event success.

"The win has taken very little out of him and he's being naughty," Brown said.

"Diego was extremely keen in running, before going to the line super well."

Brown, a winner of more than 300 races, says Diego is her favourite horse.

Hall has high hopes Diego can

win his second WA Pacing Cup when tackling the \$450,000 race at Gloucester Park in November.

Brown is booked to retain the drive behind Diego and aims for a belated cup triumph.

The reinswoman was on a compulsory break from driving after being concussed in a race fall when Diego won the WA Pacing Cup early last year.

She was replaced in the sulky on cup night by her partner, Gary Hall Jr, reinsman son of the horse's trainer.

Diego was the second leg of a Friday night double for Brown,

who had earlier won a 2130m race with \$3.30 favourite October Reign, trained by Michael Young.

"October Reign scored well, despite losing concentration when his tongue tie came loose near the finish," Brown said.

Substantial bets were collected after Soho Skyfall, backed from \$8.50 to \$4.00 in fixed odds wagering, led and won Friday night's first race.

The Kim Prentice-trained three-year-old started at \$6.50 on the TAB.

"He impressed when winning

early in his career and is now back to peak form, with a good campaign ahead," reinsman Mitchell Miller said.

Reinsman Stuart McDonald rated Captain Bligh highly after he led and won the second race at \$1.40 favouritism.

"He's become more tractable and has the ability to reach open company," McDonald said.

A bright future was predicted for State Of Heaven (\$4.40), who won the third event.

"He rolled along strongly and definitely has more wins in store," reinsman Lindsay Harper said.

Summary

Bowls

Doubleview: Thursday Drawn Pairs W T Mainstone & R Smith 19/R/U L Thorn & H Wines 18 Rd 1 G Papadopoulos & J McNaie 12 Rd 2 S Potter & K Seeds 10.

Melville: Thursday Social 1 P Curren G Parker L Preedy T Crabtree 2 R Madison J Foster G Thomas J Marciano 3 S Smith B Glendinning M Sevens 4 I Munachen K Bennett P Youngman.

Cricket

2nd Test, Nottingham, England v West Indies, day two, lunch

England	West Indies
1st innings	1st innings
Z CRAWLEY c Athanaze b A Joseph 0 3	B DUCKETT c Holder b S Joseph 71 59
O POPE c Hodge b A Joseph 121 167	J ROOT c A Joseph b Seales 14 29
H BROOK c Mc Kenzie b Sinclair 36 34	B STOKES c sub (Louis) b Hodge 69 104
B STOKES c sub (Louis) b Hodge 69 104	J SMITH c Holder b Hodge 36 54
C WOAKES c Holder b Seales 37 48	G ATKINSON c Hodge b Sinclair 2 5
G ATKINSON c Hodge b Sinclair 2 5	M WOOD not out 13 29
M WOOD not out 13 29	S BASHIR c Holder b A Joseph 5 4
S BASHIR c Holder b A Joseph 5 4	SUNDRIES (lb 2, nb 1, w 2) 12
SUNDRIES (lb 2, nb 1, w 2) 12	TOTAL 416

Fall: 1-0 (Zak Crawley, 0.3 ov), 2-105 (Ben Duckett, 18.6 ov), 3-142 (Joe Root, 29.3 ov), 4-201 (Harry Brook, 41.2 ov), 5-281 (Ollie Pope, 57.1 ov), 6-342 (Ben Stokes, 71.2 ov), 7-367 (Jamie Smith, 77.4 ov), 8-370 (Gus Atkinson, 78.4 ov), 9-408 (Chris Woakes, 87.2 ov), 10-416 (Shoaib Bashir, 88.3 ov).

Bowling: A Joseph 15.3-1-98-3, J Seales 15-1-90-2, J Holder 14-0-60-0, S Joseph 11.3-2-44-1, K Sinclair 22-0-73-2, K Brathwaite 0.3-0-2-0, K Hodge 10-0-44-2.

Overs: 88.3

West Indies

Ist innings	Runs	Balls
K BRATHWAITE c Pope b Atkinson 48 72		
M LOUIS c Brook b Bashir 21 41		
M MCKENZIE c Stokes b Bashir 11 27		
A ATHANAZE not out 45 58		
K HODGE not out 25 61		
SUNDRIES (lb 2, nb 1, w 1) 4		
TOTAL, for 3 wickets 154		

Fall: 1-53 (Mikyle Louis, 14.6 ov), 2-78 (Kraig Brathwaite, 21.3 ov), 3-84 (Kirk McKenzie, 24.3 ov).

Bowling: C Woakes 11-0-40-0, G Atkinson 9-2-27-1, M Wood 6-1-24-0, S Bashir 17-0-61-2.

Overs: 43.

Golf

ARMY at Collier: Lake/Island: J Oakes 40; M Salmon c/b R Jones 38; S Greenfield, B Richards, D Jones, J Rolfe Snr 37; C C Brown 36; D Whitehead, W Howard 35; K Davies, R Airey 34; T Hartmann 33; G Haywood, B McDonald, A Oakes 32; D Wilkie, B Temple, S Paterson 31; J Rolfe Jnr 30; A Walker 29; R Spraggon 25; L Riccardone c/b M Maxwell 24.

Augusta: Friday Scroungers Stableford-C. Robertson 18 points G Matthews 16 J Eddy 15 Zoran 14 P Cunningham 14 Golf Ball T Hadley.

Bayswater Social: S & P. S. Mead, 28. E. Lindebrings, 30. P.

Stanton, F. Kuan, 31. Longest Drive: Men: S. Meade. Ladies: M. Hickling. Longest Putt: J. Lindebrings. N.T.P.: Ladies: E. Lindebrings. Men: N. Kirkby. Least Putts: F. Kuan. Birdies: S. Meade. Ferret: S. Meade. Best Gross: S. Meade, 37.

Coastal Ladies GC: 18 Hole Stoke, Trophy Day: Winner: A grade: A.Dinsdale 72; R/Up: T.McNamara 77. B Grade: J.Devchand 73, R/Up: S.Abrahams 77. C Grade: P.McEntyre 78 c/b from R/Up J.Carrott 78. Novelty: Hole 2: Longest 1st Putt: B Grade: C.Rundle. Hole 8: NTL: P.Bartle. Hole 11: Longest Drive 2nd Shot: A Grade: S.Hogan. B Grade: S.Abrahams. C Grade: J.Carrott

Collie: J Crowther 39, C Giblett 38, D Nickless 35, T Reeves 35, M Whipp 35, J Simmonds 34.

Cottesloe: Men - Stableford: A Grade: P Folland 39, B Grade: C Pedersen 37. Good Scores: I Shepherd 36; G Hazell, D Constantine, F McMurray, N McKenzie, M Mitchell 35; W Bosisto, T Hey, R Sedgwick, R Johnson, D Roxby, A Lenagan 34. Nearest Pins: S England 2nd. T Rompotis 5th. G Lewis 11th. R Pethick 13th. Eagle: G Hazel 8th. Gross: G Lewis 32. Women - Stableford: A Steele, P Anderson, J Healy 37; S Dwyer 36; C Tomassello, B Nicholls 35; M Smith, Y Fukawa 34. Nearest Pins: J Yardley 2nd. C MacIver 11th. L Cooke 13th. E Robinson 19th. Front 9: S Prentice 21; M Stewart 17; J Kelsall, T Murie, L Atkinson 16; K Mahon, N Banfield 15. Back 9: SE McKay 22; H Lyons 21; C MacIver, R Adcock 18.

Dale: 19 July 9-hole Stableford competition - B Commons ("A" winner) 23pts, R McAttee ("A" runner-up) 17 on a c/b from J Cook 17, G Goring, C Felstead & D McEwan all 16; B Carlson ("B" winner) 20pts, A Craven ("B" runner-up) 17, S Thomson & G

Peters both 16; L/D (No.1) "A" G Goring; NTP (No.7) C Bradley; L/P (No.9) S Thomson & A Clark; Birdies G Goring & J Browne (No.3). 20 players in attendance.

Mandurah: Nett: D Hill 66, E Curley 67, G Harrison 67, I Heales 69, A Payrits 69, G Coles 69, K Bouchier 70, S Johnson 70, W Mansell 70, W Davies 70, R Winkles 71, G Wood 71, K Brandis 71, Z Schneider 71, N Thomson 71, N Francis 72, R Bell 72, T Rasmussen 72, W Chatfield 72, P Price 72, S Wiseman 72, D Tunnicliffe 72, D Wilson 73, A Ibbotson 73, F Brown 73, R McBride 73, R Nurse 73, R Dillon 73, S Davis 73, D Shannon 74, P Kershaw 74.

Maylands Veterans: Stableford B Abbott 19; R Taylor 18; M Te J Dunn 17; A Mijacka 15; R McLroy, R Chambers, D Mason 14; D Moon 12; J Trute, S Heller 11; S Read 10; D Howard 9; L James 8; NTP 11th 2nd shot - T Dunn NTP 13th - T Dunn.

Par Pursuers: Carramar-Stroke: J Ward 20 c/b, T Fisher 20, T Botley 16 c/b, A Mackey 16, D Thomson 14 c/b, I Hudson 14, T Pointing 13.

Pinjara: Ladies Stableford: M. Collins 37, A. Li 36, S. Dhu 35, M. Muller 28. Men's Stableford, Overall Winners: J. Lee 38, K. Butler 37, T. Hansen 37, F. Eggert 36, A. Butterly 35, M. Jones 35, D. Lawler 35. Gross Stableford Winner, D. Lawler 32.

Rockingham: Thursday Stableford Don Hall Memorial R Harrison 40, A Ingham 39, R Johns, F Pine, P Byrne, T Cowled 38, R Williamson, P Kirk, L Francis 36, Cliff Smith, T Hancock, A Capra, J Abraham, D Bell, J Catlin, R Robertson, P Dupreez 35, Clayton Smith, M Hannah, F Gibson, P Epis 34. NTPs: 3rd T Cowled, 8th S Fielding, 12th S Miller, 15th L Korn.

Royal Fremantle: 18 Hole Stableford: A Maker 37, H Choi 36, R Kaur 36, S Park 35, D Parsons 35, J Martin 34, D Stein 34, L Vivian 34, G Lightfoot 33, P Collins 33, V Lam 33, L Scott 33, J Causar 33 NTP: L Vivian (3rd) NTP: J Causar (8th) NTP: J Causar (12th) NTP: A Burton (17th), 9 Hole Stableford: J Micale 19, H Cross 18 NTP: M Brock (12th).

Sanctuary: Stableford: C Arundel 23, D Ramsay 22, K Lavrick 22, R Randall 21, D Randall 20, C King 20, J Francis 20. NTPs: M Trafford, C Cook.

Surfside Ladies: Foursomes Stroke pairs Gross winners J Landy, L Olsen 93 R/up M Aylmore, C Considine 94. Nett winners B Jones, J Healey 71.5 R/up J Landy, J Olsen 72 Good scores M Aylmore, C Considine 72.5, P Curtin, N Petersen 75.5. Nine-hole winner J Johnson 19 points R/up A Greeve 16. Novelty winners B Jones, J Landy, J Vincent, T Walker, L Olsen, E Ferguson.

WA Blind and Vision Impaired Golf: Stableford 9 holes, Wembley: R Nosedá (K Williamson, S Gayle) 17 R Anderson (S Gayle) 14 P Drury (G Berryman) 14 L Manera (K Williamson) 13 D Minciullo (D Wilkinson) 12. 18 holes, Wembley: P Heinrich (P Waters) 33 G Nicijewski (P Gardner) 28.

Westavia: Scroungers: Stableford: G Wright 38; D Holden P Bowditch 37; R Cargeeg G Fanning 35; G Cooper T Geraghty 32; K Wasley R Pease 31; A Pease K Whyte L Lane 28.

West Coast GC: Wembley Old Course: Friday Stableford: Alan Smith 39, S Huckle 37, C Colli c/b G Saunders & T McClain 35, best gross T McClain 83.

Westemers Blind Golf Club: Results - Stableford D. Ste-

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FOUNDATION PARTNER **BHP**

SATURDAY

Football West State League Round 16, Joondalup United v Rockingham City @ 3pm

WAFI Colts Round 16, West Perth v East Fremantle @ 9:15am

PSA AFL Round 11, Aquinas College v Trinity College @ 10:45am

NPL WA Women Round 15, Hyundai NTC v UWA Nedlands @ 1pm

NPL Men Round 17, Inglewood United v Balcatta Etna @ 3pm

SUNDAY

Perth Football League Round 15 B-Grade Men, Collegians v Bullcreek Leeming @ 3:15pm

WABL Championship Men's Grand Final, Willetton Tigers v Perry Lakes Hawks @ 1pm

Hockey WA Premier League Women Round 17, Reds Hockey Club v Suburban Lions Hockey @ 2:30pm



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vens/D Paterson 28; Glenda Bunter/Graham Bunter 18; G. Semini/F. Wong 18; J. Henderson/C. Portinha 15; A. Karnasuta/R. Coles 13; G. Reagan/B. King 5.

Whaleback Seniors: Friday Stableford. Winner G Treacy, M Tapscott 35; B Tully, N Porter 33; J Anderson 32; J Gordon, T Jennings, V McGrath, R Pike, L Shryock 30; F Buemi, G Kilburn, E Nell 29; P Crothers, S Prickett, A Whitehead, T Whitten 28; D Cooper, C Turnbull 27.

Tennis

Men ITF: M25 Nottingham - Nottingham, Great Britain (Hard) R16 [1] James McCabe (NSW) d [Q] Marcus Walters (GBR) 6-4 7-6(2) R16 [3] Blake Mott (NSW) d Mark Whitehouse (GBR) 6-1 6-3 R16 [WC] Hugo Coquelin (GBR) d [4] Blake Ellis (Qld) 6-3 7-5.

M25 Telfs - Telfs, Austria (Clay) R16 [8] Matthew Dellavedova (Vic) d [WC] Nico Hipfl (AUT) 7-6(6) 3-6 6-4 M15 Rochester - Rochester, USA (Clay) R16 Tyler Zink (USA) d Corey Gaal (NSW) 6-3 6-3. M15 Nakhon Si Thammarat, Thailand (Hard) R16 Pawit Somraksup (THA) d [Q] Sam Ryan Ziegann (Qld) 6-2 6-3 R16 [7] Amit Vales (ISR) d Jesse Delaney (NSW) 6-1 6-0.

Challenger Les Championnats Banque Nationale de Granby - Granby, Canada (Hard) R16 [6] Yunchaokete Bu (CHN) d Philip Sekulic (Qld) 6-4 6-0.

Women ITF: W100 Vitoria - Gasteiz - Vitoria - Gasteiz, Spain (Hard) R16 Melisa Ercan (Qld) d [6] Natalija Stevanovic (SRB) 6-3 6-3 W75 Porto - Porto, Portugal (Hard) R16 [Q] Tessa Andrianjafitrimo (FRA) d [Q] Alexandra Bozovic (NSW) 4-6 6-3 6-2 R16 [5] Lanlana Taranudet (THA) d [Q] Elena Micic (Vic) 7-6(2) 6-2 R16 [4] Maya Joint (ACT) d Lina Gjorcheska (MKD) 6-2 6-7(6) 6-3.

W35 Darmstadt - Darmstadt, Germany (Clay) R16 Victoria Mboko (CAN) d Petra Hule (SA) 6-4 6-4 R16 [Q] Jaimee Fourlis (Vic) d Carolina Kuhl (GER) 1-6 6-2 6-2.

W15 Nakhon Si Thammarat - Nakhon Si Thammarat, Thailand (Hard) R16 [2] Punnin Kovapitukted (THA) d [Q] Sara Nayar (Qld) 6-1 6-1 R16 [7] BoYoung Jeong (KOR) d Laquisa Khan (WA) 6-3 6-4.

W15 Casablanca - Casablanca, Morocco (Clay) R16 [1] Tina Nadine Smith (Qld) d [Q] Polina Kaibekova 6-3 6-3.

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PO Box 6862 East Perth Western Australia 6892
Eni House, 226 Adelaide Terrace Perth WA 6000
Tel: +61 8 6205 3902

Public notice - relevant persons for Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Eni is an international energy company committed to sustainable and responsible energy transition.

Eni is the operator of the Petrel Field in the Bonaparte Basin in North Western Australia.

The Petrel gas field is approximately 260km WSW of Darwin, and ~170km offshore of the WA coast within the Joseph Bonaparte Gulf.

Eni plans to decommission suspended wells, Petrel-3 and Petrel-4, within the Petrel Field. The wells have been suspended since the 1980s and will not flow in their current condition. Loss of well control is not a credible risk.

The activities for monitoring and decommissioning will include surveys to confirm that the condition of the seabed equipment on the wells remains unchanged during this suspended phase. The actual timing of the activities will depend on a number of factors, including vessel and rig availability and weather conditions.

Am I a 'relevant person' in relation to this work? You may be a relevant person if you or your organisation have functions, interests, or activities that may be affected by an offshore petroleum activity proposed under an environment plan.

You may be a relevant person if the monitoring and decommissioning of the Petrel wells may affect:

- your spiritual or cultural connection to the land and sea country
- your business and recreational activities, such as fishing and tourism
- the functions or responsibilities of your organisation

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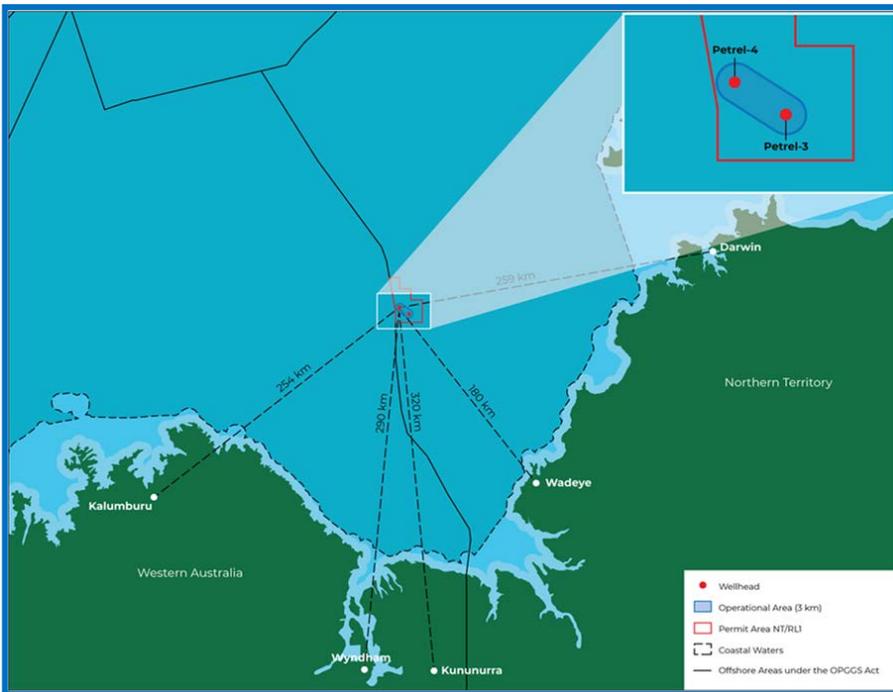
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You may be a relevant person if the monitoring & decommissioning of the Petrel wells may affect you or your organisation's functions, interests, or activities.

[Please scan the QR code for detailed information](#)

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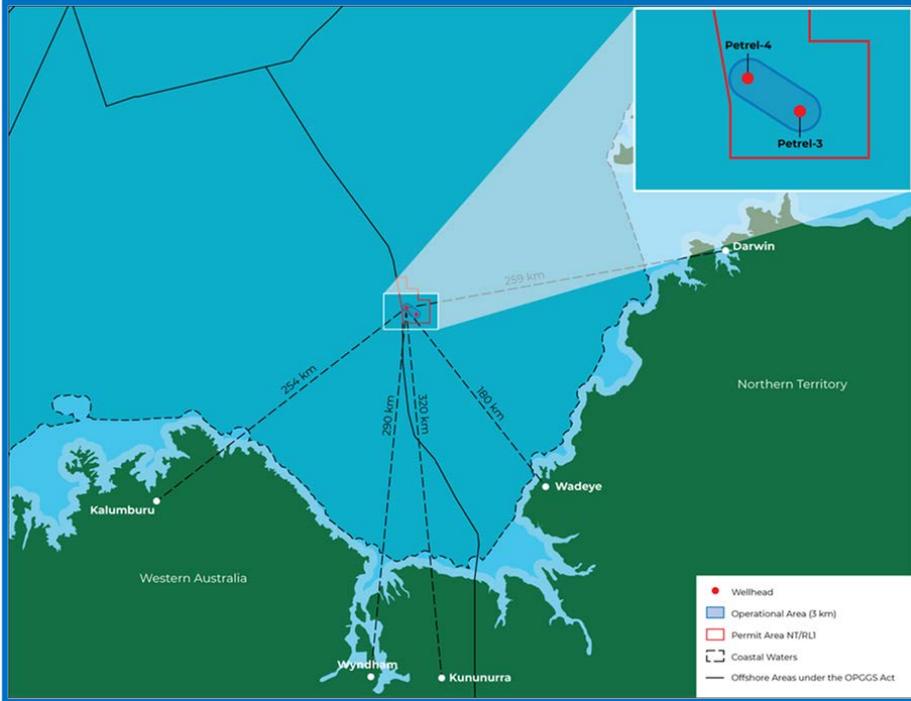
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By phone 1300 155 616





PUBLIC NOTICE FOR BALANGGARRA PEOPLE

Petrel 3&4 Monitoring & Decommissioning Environment Plan



Eni is an international energy company committed to sustainable & responsible energy transition.

Eni is the operator of the Petrel gas field in the Joseph Bonaparte Gulf which is about 290km north of Wyndham and about 254km north-west of Kalumburu.

As we continue to work in areas near Balanggarra country, Eni are interested in building relationships with people from Wyndham to Kalumburu.

Specifically, Eni would like to consult with you about their upcoming Petrel 3 and Petrel 4 Monitoring and Decommissioning Project Environment Plan.

Eni is plans to decommission the already suspended wells, Petrel 3 & Petrel 4, within the Petrel field. The wells have been suspended since the 1980s and will NOT flow in the current condition. Loss of well control is not a credible risk.

MEETING AT WYNDHAM SHIRE OFFICES

Monday 2 September 2024

Starting 11am

People from Eni will be in Wyndham to talk to you about the Project, what's involved, and how they manage all their pre-planning to, safely and successfully, carry out the Petrel monitoring and decommissioning activities.



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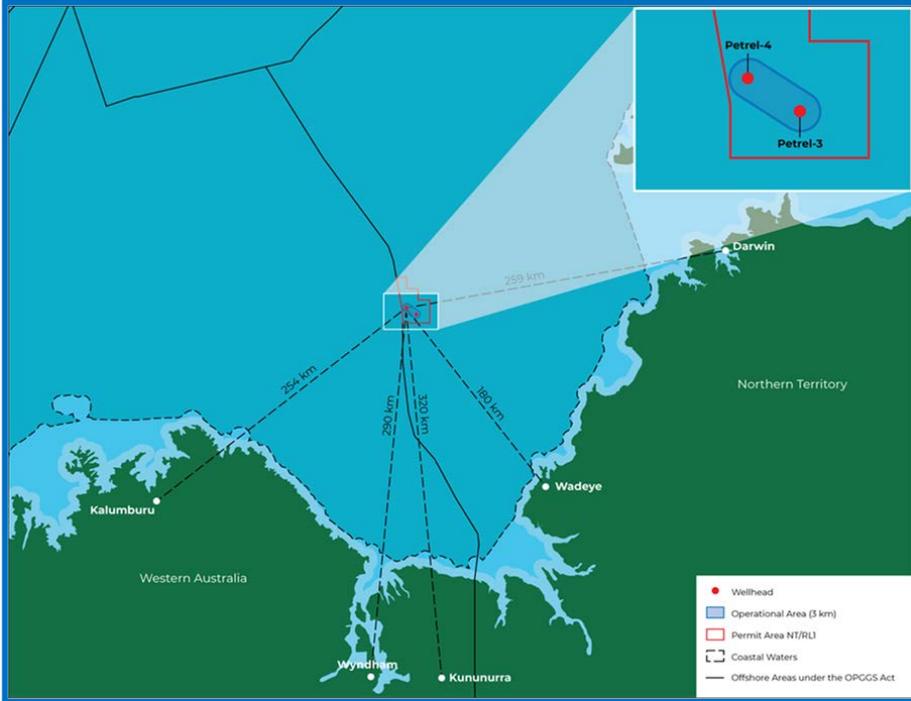
... *in person*
... *by email*
... *by phone*

... *at the meeting and afterwards*
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KALUMBURU PUBLIC NOTICE

Petrel 3&4 Monitoring & Decommissioning Environment Plan



Eni is an international energy company committed to sustainable & responsible energy transition.

Eni is the operator of the Petrel gas field in the Joseph Bonaparte Gulf which is about 290km north of Wyndham and about 254km north-west of Kalumburu.

As Eni continues to work in areas near Kalumburu, Eni are interested in developing and growing relationships in the area.

Specifically, Eni would like to consult with you about their upcoming Petrel 3 and Petrel 4 Monitoring and Decommissioning Project Environment Plan.

Eni is plans to decommission the already suspended wells, Petrel 3 & Petrel 4, within the Petrel field. The wells have been suspended since the 1980s and will NOT flow in the current condition. Loss of well control is not a credible risk.

MEETING AT KALUMBURU H.A.C.C. CENTRE

Wednesday 28 August 2024

Starting between 9am and 10am

People from Eni will be in Kalumburu to talk to you about the Project, what's involved, and how they manage all their pre-planning to, safely and successfully, carry out the Petrel monitoring and decommissioning activities.



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LOCAL GOVERNMENT EXTRAORDINARY POSTAL ELECTION
NOTICE OF RESULTS
Shire of Wyndham-East Kimberley

Result of the Extraordinary Election conducted as a postal vote on Friday, 12 April 2024 is as follows:

District Councillors	Candidates	First Preferences	Final Votes	Expiry of Term
TAYLOR, Glenn	TAYLOR, Glenn	133	Excluded	18 October 2025
	GOODING, Jeff	143	260	
HUDSON, Leanne	HUDSON, Leanne	53	Excluded	18 October 2025
	TIMMS, Scott	144	322	
HOPKINS, Kylie	HOPKINS, Kylie	101	Excluded	18 October 2025
	GALLO, Denise	21	Excluded	
LEWIS, Joshua	LEWIS, Joshua	151	51	18 October 2025
	TAYLOR, Glenn	9	Excluded	
Total Formal Votes		756		
Total Informal Ballot Papers		6		

Scott Ormonde TIMMS is elected as Councillor for the Shire of Wyndham-East Kimberley and will hold office until 18 October 2025.
Jeffery Craig GOODING is elected as Councillor for the Shire of Wyndham-East Kimberley and will hold office until 18 October 2025.
Notice is further given that the following person JOSHUA LEWIS is the first unselected candidate and the following person GLENN TAYLOR is the second unselected candidate for the purposes of Schedule 4.1A of the Local Government Act 1995.

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Shire of Wyndham-East Kimberley Extraordinary Election - 12 April 2024
Shire of Wyndham-East Kimberley (Councillor)
Calculation Steps Report
2 Candidates to be Elected

	TAYLOR, Glenn	GOODING, Jeff	HUDSON, Leanne	TIMMS, Scott	HOPKINS, Kylie	GALLO, Denise	LEWIS, Joshua	Last Preferences	TOTAL	Excluded
Quota = 756(2+1) = 252										
First Preferences	133	143	53	144	101	21	151	0	756	
GALLO, Denise	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion	0	0	0
HUDSON, Leanne	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion	0	0	0
HOPKINS, Kylie	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion	0	0	0
TAYLOR, Glenn	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion	0	0	0
LEWIS, Joshua	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion	Exclusion	0	0	0
Total Informal Ballot Papers	6	6	6	6	6	6	6	6	6	6

Government of Western Australia
Department of Water, Veterinary Regulation and Survey

Government of Western Australia
Department of Building and Energy

Rules for Pools and Spas - a simple checklist

Checklist 111

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Eni Energy Bonaparte

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PUBLIC NOTICE

Petrel 3 & 4 Monitoring & Decommissioning Environment Plan

Eni is an international energy company committed to sustainable & responsible energy transition.

Eni is the operator of the Petrel field in the Bonaparte Basin in Northwestern Australia.

The Petrel gas field is approximately 260km WSW of Darwin and ~170km offshore of the WA coast within the Joseph Bonaparte Gulf.

Eni plans to decommission suspended wells, Petrel 3 & Petrel 4, within the Petrel field. The wells have been suspended since the 1980s and will NOT flow in the current condition. Loss of well control is not a credible risk.

The activities for monitoring and decommissioning will include surveys to confirm that suspended phases. The actual timing of the activities will depend on a number of factors, including vessel and rig availability and weather conditions.

You may be a relevant person if the monitoring & decommissioning of the Petrel wells may affect you or your organisation's functions, interests, or activities.

Please scan the QR code for detailed information

WE WELCOME YOUR FEEDBACK:

By email: eni@bonaparte.com.au
By phone: 8300 133 616

1. Safe communities - Encouraging active living
 - 1.1 Community Awareness - Community are aware and understand and prevent crime
 - 1.2 Safe Physical Environment - People feel safe on the streets and can engage in healthy vibrant active lives
 - 1.3 Families, Children, Young People - Families are supported and young people make better choices
 - 1.4 Alcohol and Other Drugs - Less alcohol and drug related harm
2. Healthy communities - Encouraging active living
 - 2.1 Access to healthcare - Improve access to quality health and services
 - 2.2 Access to recreation - Sport and recreation facilities and services are well maintained
 - 2.3 Access to social inclusion - Access to strong supportive community clubs
3. Access to housing - There are housing opportunities
 - 3.1 Housing Supply - The supply of housing meets current and future needs
 - 3.2 Housing Design - Homes are designed for current and future climates, incomes and circumstances
 - 3.3 Access and housing affordability - The local community has the skills to access affordable housing
4. Access to education - Education and training
 - 4.1 Childcare and preschool programs - Increase participation in early educational development including quality childcare
 - 4.2 Inclusive education pathways - Residents can access a broad range of educational opportunities, including alternative education pathways
5. Access to employment - Inspiring meaningful work
 - 5.1 Attract businesses that create local employment - The Shire is business and the Shire of choice for inward investment in the Kimberley
 - 5.2 Residents actively participate in the local economy - All residents who participate in the workforce and undertake business ventures

Strategic Community Plan 2023 - 2028
Shire of Wyndham East Kimberley

ADVERTISING

e. Radio

vi. 60 Second Production

File embedded - click on next page to play production example, file may need to be downloaded

vii. First Nations Radio FM94.5

viii. First Nations Radio AR913

ix. Mix 104.9 Darwin

x. Palmerston FM 88





Eni S.p.A.
ENI Italy package July 2024

Contract	Station	Spot Class	Daypart	Start Time	End Time	Aired Date	Aired Time	Dur	Aired Dur	Key #
20/07/2024										
204964	Mix 104.9	Commercial	Morning	9:00:00 AM	10:00:00 AM	20/07/2024	9:59:53 AM	60	60	DARENIDPRC15072430A
204964	Mix 104.9	Commercial	Morning	9:00:00 AM	10:00:00 AM	20/07/2024	9:18:14 AM	60	60	DARENIDPRC15072430A
21/07/2024										
204964	Mix 104.9	Commercial	Morning	9:00:00 AM	10:00:00 AM	21/07/2024	9:47:01 AM	60	60	DARENIDPRC15072430A
22/07/2024										
204964	Mix 104.9	Commercial	Morning	9:00:00 AM	10:00:00 AM	22/07/2024	10:01:21 AM	60	60	DARENIDPRC15072430A
23/07/2024										
204964	Mix 104.9	Commercial	Morning	9:00:00 AM	10:00:00 AM	23/07/2024	9:49:01 AM	60	60	DARENIDPRC15072430A
24/07/2024										
204964	Mix 104.9	Commercial	Morning	9:00:00 AM	10:00:00 AM	24/07/2024	9:14:19 AM	60	60	DARENIDPRC15072430A

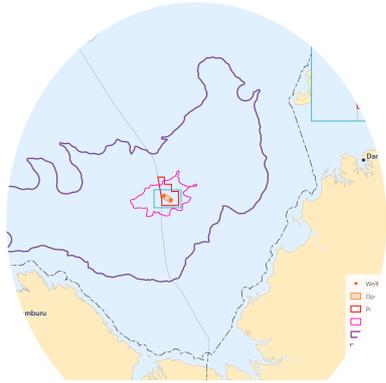
End of Report

ENI PETREL-3 AND PETREL-4 MONITORING AND DECOMMISSIONING

LANDING PAGE

The following content represents the online landing page for the activity and the Frequently Asked Questions document.

A page can also be access through this live link: <https://petreleni.com.au/>



ABOUT

Petrel gas field

Eni is the titleholder of the Petrel gas field in the Bonaparte Basin in North West Australia through its subsidiary, Eni Energy Bonaparte Pty Ltd. The Petrel field is located in permits NT/RL1 and WA-6-R. Eni became the joint titleholder in Q1 2024 after acquiring previous operator, Neptune Energy.

The Petrel field lies approximately 260km WSW of Darwin (NT), about 170km offshore off the WA coast. Discovered in 1969, the Petrel-3 and Petrel-4 wells were drilled in the 1980s. The wells were suspended in accordance with the regulations at the time, with barriers across and above the reservoir, including the testing of the barriers.

ACTIVITY

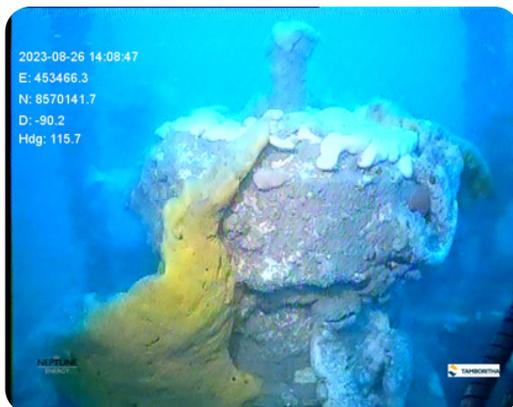
Petrel-3 and Petrel-4 monitoring and decommissioning

Eni plans to decommission these wells according to *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth) (Environment Regulations)* and are preparing the Environment Plan for Monitoring and Decommissioning to submit to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

A new five-year EP is in development for submission to the regulator addressing the required activities for the monitoring and decommissioning of Petrel-3 and Petrel-4.

These activities include:

- ✓ General Video Inspection – annual visual survey of the two suspended wells
- ✓ Geotechnical Survey
- ✓ Geophysical Survey
- ✓ Pre-abandonment Vessel Campaign
- ✓ Decommissioning (plug and abandonment) of Petrel-3 and Petrel-4
- ✓ As-left Survey



(<https://petreleni.com.au/wp-content/uploads/2024/06/Petrel-3.jpg>)



(<https://petreleni.com.au/wp-content/uploads/2024/06/Petrel-4.jpg>)

The Monitoring and Decommissioning Environment Plan (EP) will cover a period of five years from the date of regulator approval.

The first activity – General Video Inspection (GVI) – is anticipated to be conducted in Q4 2024 and may be included in the geophysical and geotechnical surveys.

Planning for the GVI and subsequent activities will be subject to vessel and rig availability and weather conditions.

Consultation opened on 19 June 2024 and will conclude on 28 August 2024.

Activity Resources

[\(/wp-content/uploads/2024/07/Eni-Activity-Flyer-Petrel-Decommissioning-July-2024.pdf\)](/wp-content/uploads/2024/07/Eni-Activity-Flyer-Petrel-Decommissioning-July-2024.pdf) **Activity Flyer**

PDF / 766 KB

[\(/wp-content/uploads/2024/07/Eni-Activity-Flyer-Petrel-Decommissioning-July-2024.pdf\)](/wp-content/uploads/2024/07/Eni-Activity-Flyer-Petrel-Decommissioning-July-2024.pdf)



[\(/wp-content/uploads/2024/07/Eni-Petrel-3-4-Mon-Decom-FAQs-150724.pdf\)](/wp-content/uploads/2024/07/Eni-Petrel-3-4-Mon-Decom-FAQs-150724.pdf) **FAQs**

PDF / 185 KB

[\(/wp-content/uploads/2024/07/Eni-Petrel-3-4-Mon-Decom-FAQs-150724.pdf\)](/wp-content/uploads/2024/07/Eni-Petrel-3-4-Mon-Decom-FAQs-150724.pdf)



ENVIRONMENT

What is an environment plan?

The *Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGs Act)* and associated regulations provides the legal framework for the exploration and recovery of petroleum and greenhouse gas activities in Commonwealth waters which are administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

The purpose of an Environment Plan (EP) is for the titleholder of an offshore petroleum or greenhouse gas permit, to document their case for why their Petroleum Activity or Greenhouse Gas Activity meets the objects of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (OPGGs Environment Regulations)*.

An EP is a document submitted to NOPSEMA for assessment prior to the commencement of an activity, which contains information on:

- description of the activity
- description of the existing environment (natural, cultural and social)
- environmental risk assessment
- environmental management measures and commitments
- details of the titleholder and other information specified the *OPGGs Environment Regulations*.

The *OPGGs Environment Regulations*

(<https://www.legislation.gov.au/F2023L00998/latest/text>) require a titleholder to have an accepted EP in place prior to undertaking any offshore Petroleum Activity or Greenhouse Gas Activity, and require that the titleholder undertakes the activity in accordance with the EP.

Should I be consulted?

The activity will be assessed under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGG Act)* and associated Regulations for the management of potential risks and impacts of the activity.

This process includes Eni's assessment of stakeholders and [relevant persons](#) that have an interest in the activity.

Eni treats all information provided by you as confidential, with the exception of providing information to NOPSEMA. Eni is required to provide NOPSEMA with details of all correspondence with relevant persons, including copies of written correspondence.

Personal information (other than name and contact details) is sensitive information and will not be published in the EP. You can request that any material provided to Eni, including your name and contact details, be treated as sensitive information not to be published in the Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA in order for this information to remain confidential to NOPSEMA.

CONTACT US

Contact Eni

Email

info@petreleni.com.au (mailto:info@petreleni.com.au)

Address

Eni House 226 Adelaide Terrace Perth WA 6000
PO Box 6862 East Perth WA 6892

Phone

1300 155 616(tel:1300-155-616)

Register your interest in engagement for the Petrel-3 and Petrel-4 Monitoring and Decommissioning and a representative will contact you accordingly.

First Name *

Last Name

Email Address *

Phone

Interest in the project *

Max. 500 words

REGISTER INTEREST

PETREL-3 AND PETREL-4 MONITORING AND DECOMMISSIONING

Frequently Asked Questions

Q. Who is conducting the monitoring and decommissioning and why?

A. Eni is an international energy company with a history of operating in Australia for over 20 years. In Q1 2024, Eni acquired the Petrel field through its acquisition of Neptune Energy.

Eni’s acquisition transferred responsibility for the suspended subsea wells, Petrel-3 and Petrel-4 to its subsidiary Eni Energy Bonaparte. This responsibility includes visual inspections and the planned decommissioning activities.

Q. What does decommissioning mean?

A. For the energy industry, decommissioning is the end-of-life stage in the project development cycle. In general terms, it involves the isolation of the reservoir and the removal of associated infrastructure to leave the area in a safe and environmentally acceptable condition.

In the case of Petrel-3 and Petrel-4, these wells were not considered commercially viable gas wells when they were drilled in the 1980’s. The wells were sealed with barriers and tested to the industry standards at the time.

Q. What is involved in monitoring and decommissioning Petrel-3 and Petrel-4?

A. The decommissioning of Petrel-3 and Petrel-4 will cover the following activities and durations.

Activity	Duration
Annual general visual inspections (GVI)	Up to two (2) weeks
Geophysical survey campaign	Up to 40 days
Geotechnical survey campaign	Up to 20 days
Pre-abandonment vessel campaign to prepare the wells to be abandoned including high-pressure cleaning of the wellhead to allow detailed inspection and preparation for decommissioning.	Up to 20 days
Abandonment campaign, to permanently seal and abandon the Petrel-3 and Petrel-4 wells	Up to 60 days (~30 days per well)
As-left survey, to demonstrate that the decommissioning activities proposed have been completed and requirements have been met	2 days per well

Q. When will these activities take place?

A. Timing of the first activity in the decommissioning process is currently scheduled to commence in Q4 2024. The confirmed timing of the remainder of the campaign will be dependent on various factors including regulatory approvals, vessel configuration and availability, and weather conditions.

Q. How big is the operational area and where is it?

A. The activity operational area includes the extent of all planned decommissioning activities and is defined as a 3km radius around the two wellheads with a 3 km-wide corridor between them. A map of the area can be found at the project landing page petreleni.com.au.

Q. How far is the activity from shore?

A. The Petrel-3 and Petrel-4 wells are in offshore permit NT/RL1, approximately 260 km WSW of Darwin and ~170 km offshore of the WA coast. The Petrel-3 and Petrel-4 wells are located in Commonwealth waters, in approximately 95 m water depth.

Q. Have potential impacts on the environment by the monitoring and decommissioning activities been assessed?

ENI PETREL-3 AND PETREL-4 MONITORING AND DECOMMISSIONING PRESENTATIONS

CUSTOMISED COVERS

The following cover slides were customized for the purposes of presenting to individual groups and where the remainder of the slides match the generic presentation.

Presentations that have been altered from the original generic presentation are provided in full.

Full presentation with customized slides:

- CGL (Cambridge Gulf Ltd) Wyndham Port – 1 August 2024
- Department of Biodiversity, Conservation and Attractions Broome – 5 August 2024
- Department of Biodiversity, Conservation and Attractions Kununurra – 31 July 2024
- Department of Industry, Trade & Tourism Fisheries – 24 July 2024
- Department of Primary Industries and Regional Development Fisheries Kununurra – 31 July 2024
- Department of Primary Industries and Regional Development Fisheries Perth – 5 September 2024
- East Kimberley Chamber of Commerce & Industry – 13 August 2024 (Customised set for EKCCI Business After Hours Event attached in full)
- Larrakia Development Corporation – 22 July 2024
- Larrakia National Aboriginal Corporation – 23 July 2024
- National Indigenous Australians Agency – 30 July 2024
- Northern Land Council – 25 July 2024
- Northern Territory Seafood Council – 22 July 2024
- Shire of Wyndham and East Kimberley – 2 August 2024
- Wunambal Gaambera Aboriginal Corporation – 19 July 2024
- Wyndham Wildcatch – 1 August 2024

Full Presentation Example

- Larrakia Development Corporation

Customised presentation

- Balangarra Wyndham – 2 September 2024
- East Kimberley Chamber of Commerce and Industry Business After Hours Event – 31 July 2024
- Kalumburu Community – 28 August 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

CGL (Cambridge Gulf Ltd) Wyndham Port
Harbour Road, Wyndham, Western Australia

1 August 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

Department Biodiversity, Conservation and Attractions (DBCA)
DBCA Kimberley Regional Office - 111 Herbert St, Broome

5 August 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

Department of Biodiversity, Conservation and Attractions (DBCA)
Parks & Wildlife Kununurra
Lot 248 Ivanhoe Rd, Kununurra, Western Australia

31 July 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

Department of Industry, Tourism and Trade - Fisheries Division
33 Vaughan St, Berrimah, Darwin, NT

24 July 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

Fisheries Kununurra // Department of Primary Industries and Regional Development
Kununurra Agriculture Research Centre
Durack Drive Kununurra Western Australia

31 July 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

Linda Wiberg & Mark Pagano, DPIRD Environment
1 Nash Street, Perth, Western Australia

5 September 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

East Kimberley Chamber of Commerce and Industry
FULL SLIDE SET

August 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

Larrakia Development Corporation
675 Berrimah Rd, East Arm, Darwin, NT

22 July 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

Larrakia Nation
76 Dick Ward Drive, Coconut Grove, Darwin, NT

23 July 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

National Indigenous Australians Association (NIAA) – Kununurra
4/16 Riverfig Ave Kununurra, Western Australia

30 July 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

Northern Land Council
45 Mitchell Street, (NLC CEO Conference Room), Darwin, NT

25 July 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

Northern Territory Seafood Council
L1, Darwin Shipstores Building, Fisherman's Wharf, Darwin, NT

25 July 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

Shire of Wyndham and East Kimberley
20 Coolibah Drive, Kununurra

02 August 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

Wunambal Gaambera Aboriginal Corporation – CEO Bevan Stott
At Eni Australia 221 Adelaide Tce, Perth, WA

19 July 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

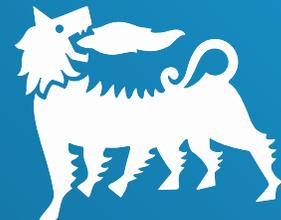
Relevant Person Consultation

Wyndham Wildcatch
2 Ord Street Road, Wyndham, Western Australia

1 August 2024

Generic Presentation Content

1. Larrakia Development Corporation



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

Larrakia Development Corporation
675 Berrimah Rd, East Arm, Darwin, NT

22 July 2024

Introduction to the Eni team



Angelina Branco

Stakeholder Engagement & CSR Manager

Dan Mahney

Completions and Interventions Supervisor

Mike Prime

Stakeholder Engagement Adviser



Why are we meeting with you?

Reasons for this consultation

Why are we here?

(Reason for this consultation)



- ❑ **Meeting people in our footprint is a part of how we like to work**
 - It's good corporate social responsibility
 - We can learn about and respond to community interests and requests
 - It helps identify those interested in our activities
 - It sometimes creates partnership opportunities

- ❑ **We're specifically here to consult on the preparation of the Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan**
 - This includes relevant and interested individuals, groups and communities (relevant persons)
 - We want to provide relevant persons with face-to-face opportunities to give us feedback directly
 - We want to understand the impacts, risks and opportunities linked to our activities in our footprint

What is a relevant person?



An individual, organisation, department or agency that may have functions, interests or activities that overlap the area where the Petrel Operations may affect

- 25.1.a each Commonwealth, State or Northern Territory agency or authority to which the activities to be carried out under the Environment Plan may be relevant,
- 25.1.b if the plan relates to activities in the offshore area of a State - the Department of the responsible State Minister,
- 25.1.c if the plan relates to activities in the Principal Northern Territory offshore area - the Department of the responsible Northern Territory Minister,
- 25.1.d a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the Environmental Plan,
- 25.1.e any other person or organisation that the titleholder considers relevant.



About Eni

Eni in Australia & Timor-Leste

Introducing Eni SpA



An integrated energy company and moving towards energy transition



61 countries - 32,000+ employees globally (21K+ Italy; 10K+ abroad)



Australian and Timor-Leste - only 101 employees



Eni believes in contributing to community in places it operates
("Dual Flag" model) <https://www.eni.com/en-IT/sustainability/our-commitment.html>



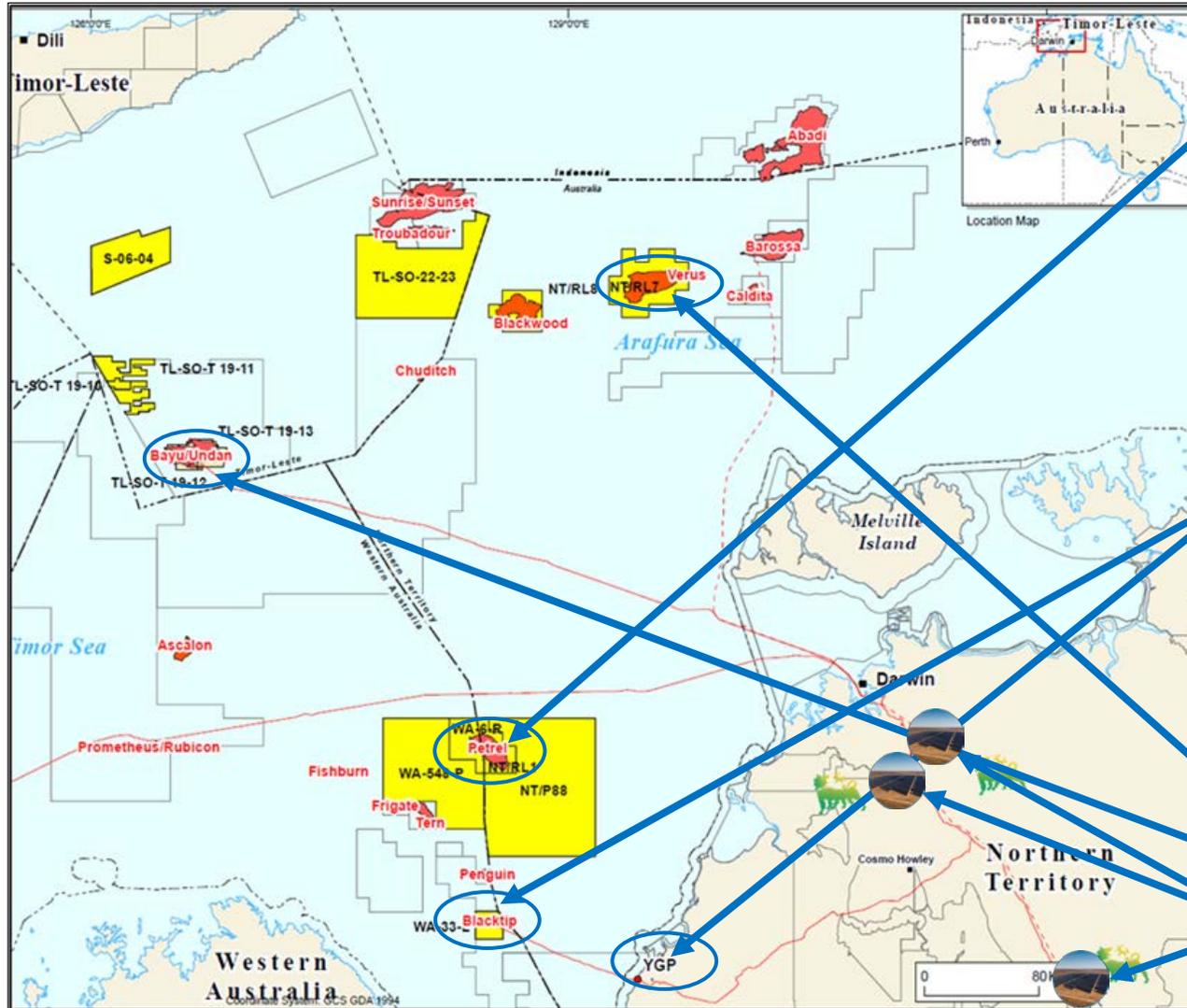
Offices in Perth, Darwin, Yelcher Gas Plant (Wadeye) and Dili (Timor-Leste)



Where we Work

Australia and Timor-Leste

Eni in Australia and Timor Leste



Petrel Monitoring & Decommissioning

- Permit acquired by Eni Feb. 2024 - contains two subsea wells
- A need to decommission (plug and abandon) existing Petrel-3 and Petrel -4 subsea wells

Blacktip and YGP Gas Production

- Providing almost all the Territory's gas needs to generate electricity for homes, industry and business
- Providing 100% of gas supply to Wadeye for power generation (since 2021)
- New drilling activity to occur in Q4 2024

Other Projects

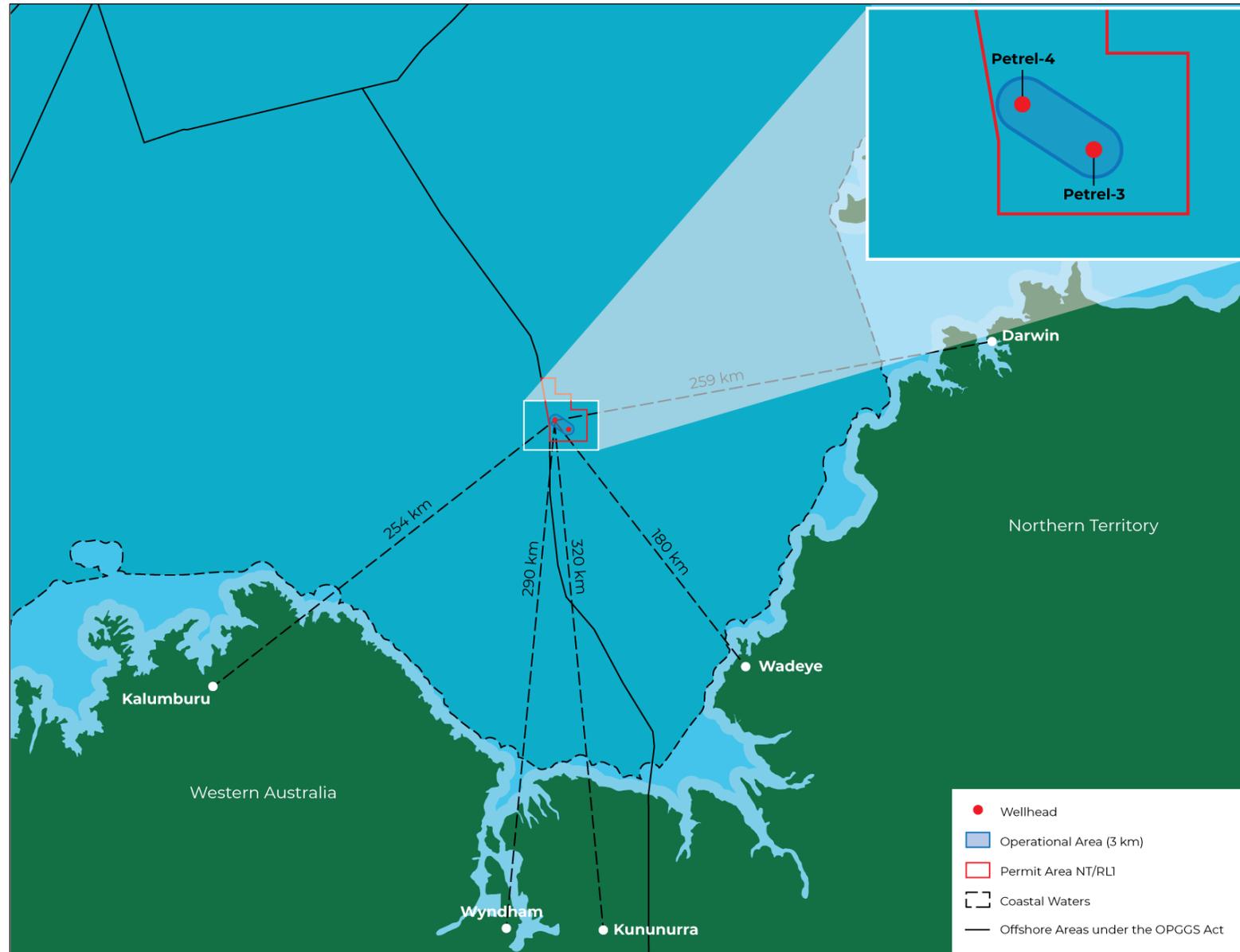
- Verus (Offshore)
- Bayu-Undan Gas Field and DLNG (11% Eni)
- Renewables – 3x Solar Plants with total capacity 59 Megawatts (Katherine, Batchelor, Manton Dam)



Petrel

Petrel-3 and Petrel-4 Monitoring and Decommissioning Activities

Petrel-3 and Petrel-4 location

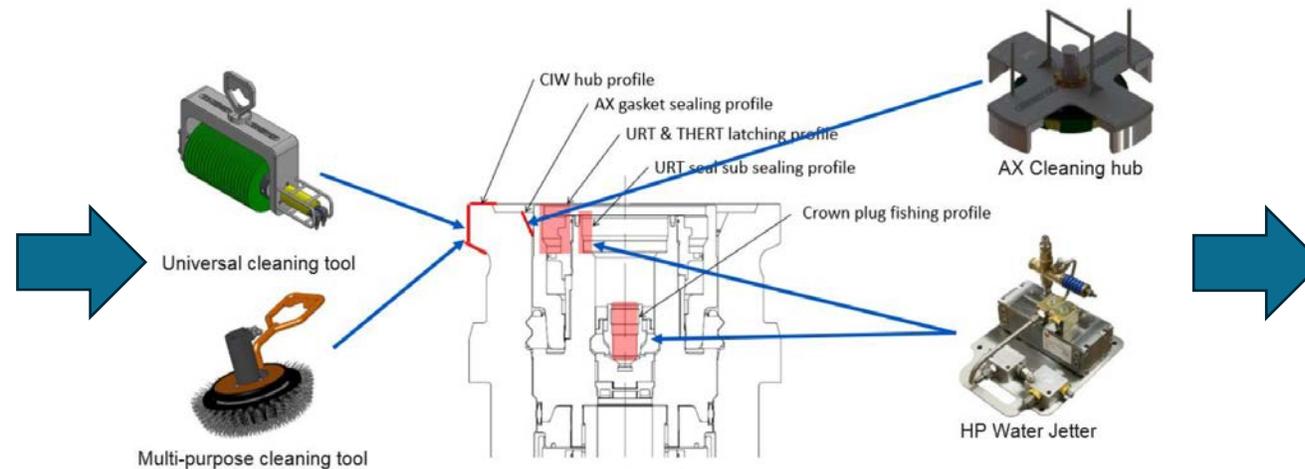
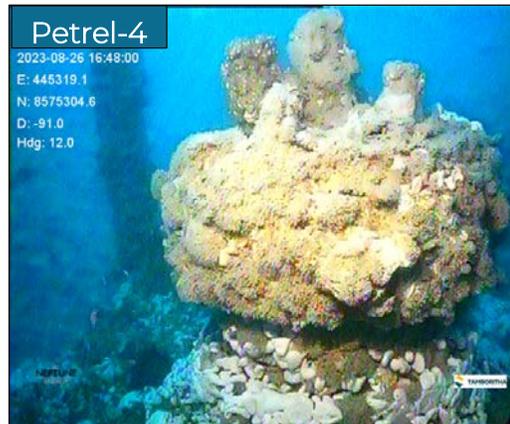


Monitoring and Decommissioning - Summary



Activities for Decommissioning of Petrel-3 and Petrel-4 subsea wells include:

- ❑ General Video Inspection
– visual survey of suspended wells and surrounds
- ❑ Geotechnical Survey
- ❑ Geophysical Survey
- ❑ Pre-abandonment Vessel Campaign
- ❑ Decommissioning (plug and abandonment) of Petrel-3 and Petrel-4
- ❑ Post Decommissioning 'as-left' Survey

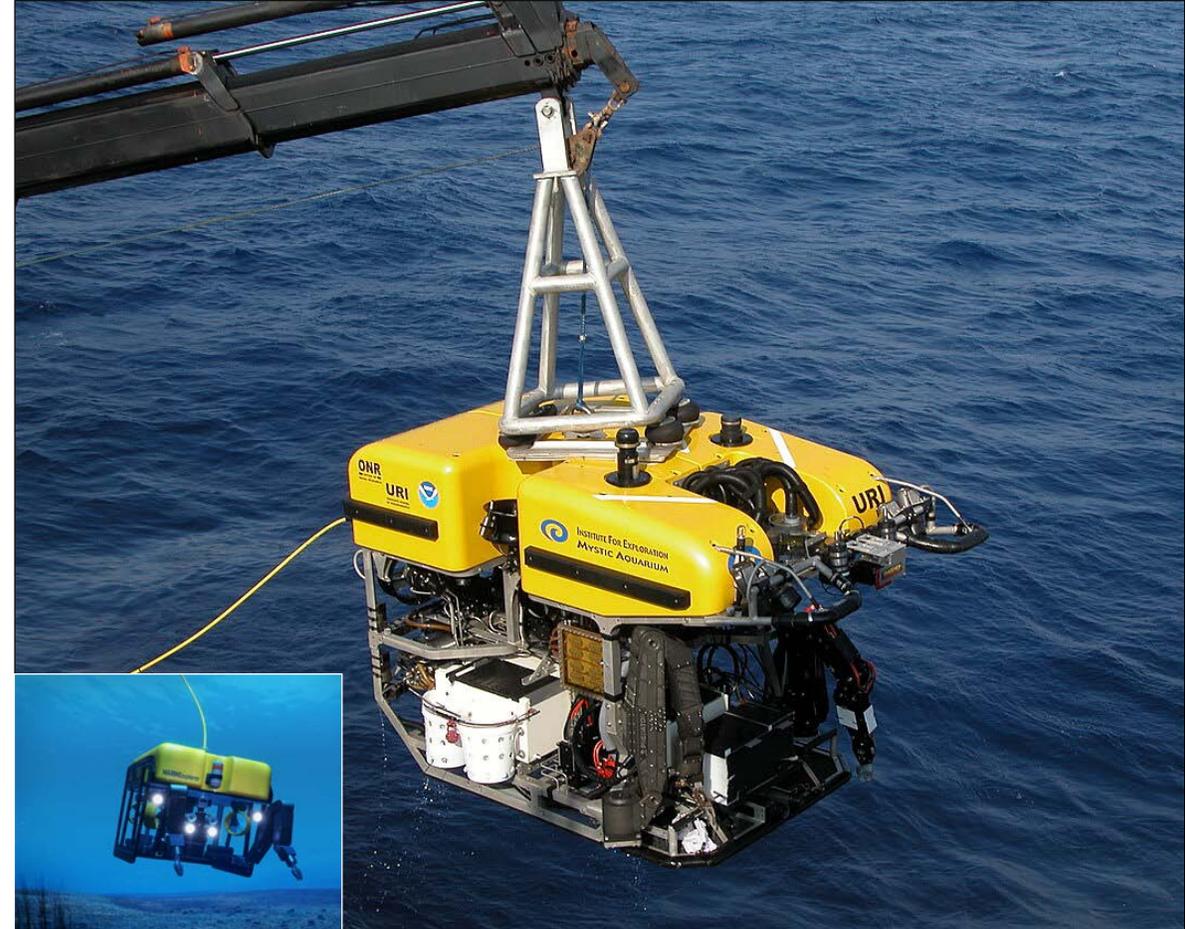


Visual Inspection



Preparation for decommissioning requires a visual inspection of subsea wells

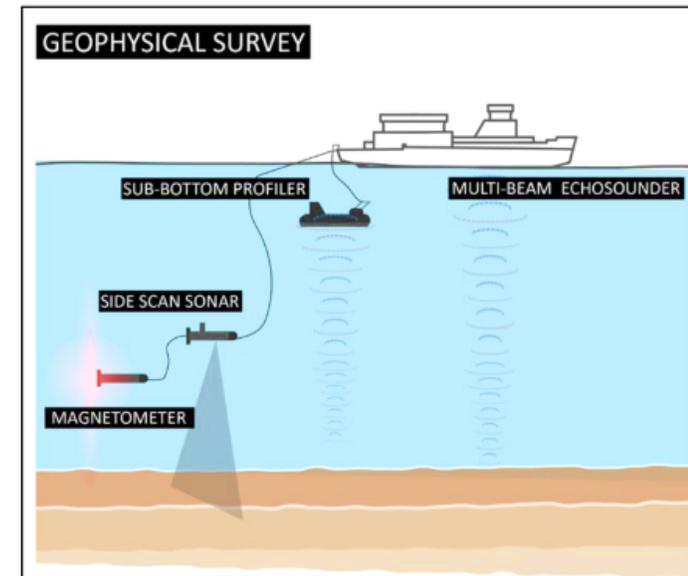
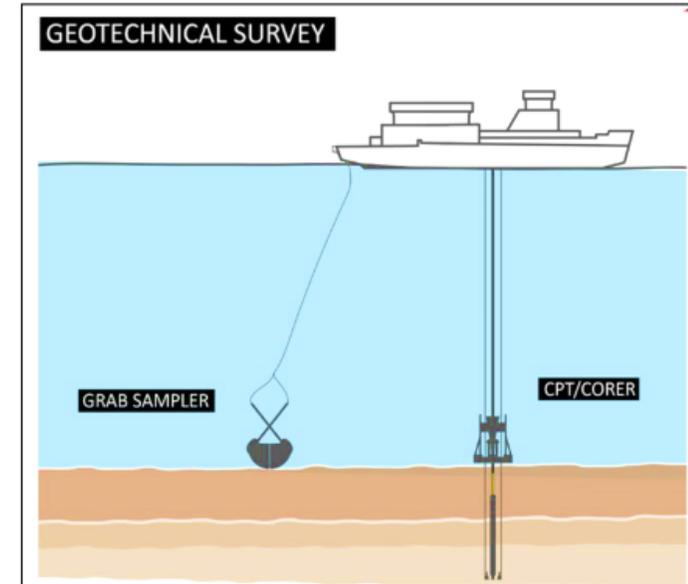
- ❑ Anticipated to be conducted Q4 2024 (then annually)
- ❑ Final timing subject to vessel/rig availability and weather
- ❑ Inspection surveys performed using Remote Operated Vehicles (ROV) that are deployed from contracted vessels
- ❑ Marine growth removal may be done to adequately assess condition of wellheads (high-pressure hose in-situ saltwater)
- ❑ Potential removal and replacement of the corrosion cap (with 3D camera/laser scanning)
- ❑ May also include the geophysical and geotechnical surveys



Geotechnical and Geophysical Surveys

... to assess below the seabed

- ❑ Undertaken so that we can understand the seafloor surface,
 - to identify features and hazards
 - to allow for seabed stability testing
 - to best position the mobile offshore drilling unit (MODU)
- ❑ Approximately 60 days to complete surveys for both wells
 - geophysical survey 20 days / well
 - geotechnical survey 10 days / well
- ❑ Various acoustic and magnetic techniques may be used (e.g. side-scan sonar, multi-beam echo sounder)
- ❑ This is not the same as 3D seismic surveys
- ❑ Core hole sampling (2.4m² per well) also completed to inform engineering designs



Pre-abandonment Vessel Campaign



... to inspect internal condition of the wellhead prior to abandonment activities

- ❑ Only if required (if we do a comprehensive visual, cleaning and inspection survey then we may not need this)
- ❑ Removal of corrosion cap, (may require marine growth removal first using mechanical cleaning (brushes/scrapper) or cleaning chemicals)
- ❑ A small volume (less than 1m³) of seawater and biocide (trapped under the cap) may be released when removing the corrosion cap
- ❑ 3D external scan of the wellheads by a camera or laser
- ❑ Scanning will be two hours duration per well

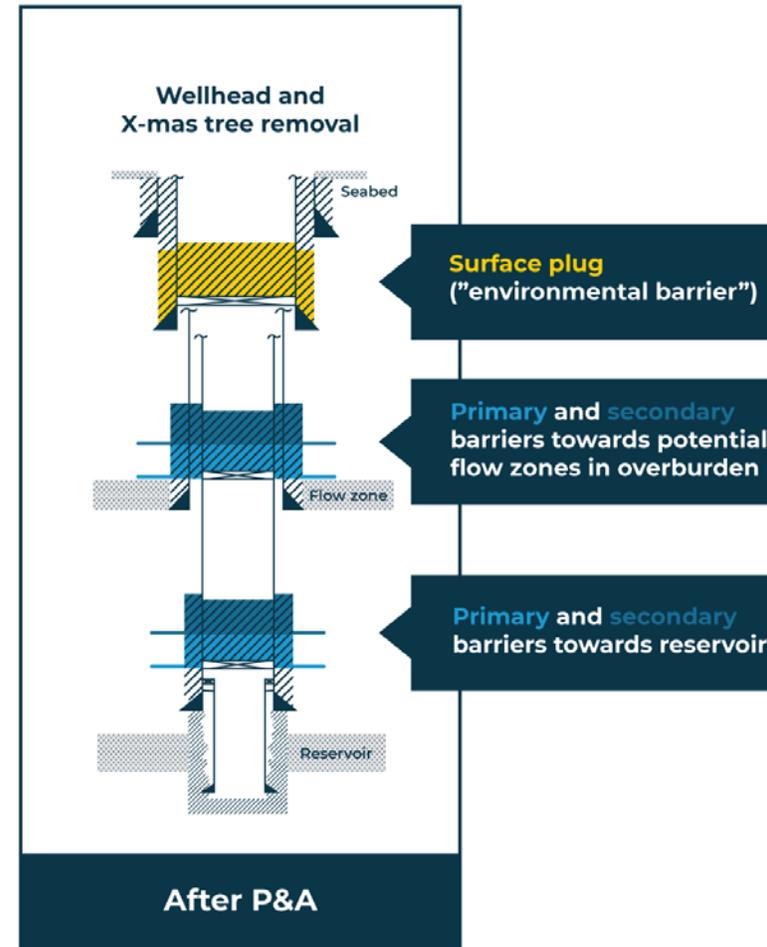


Decommissioning - Plug and Abandonment (P&A)

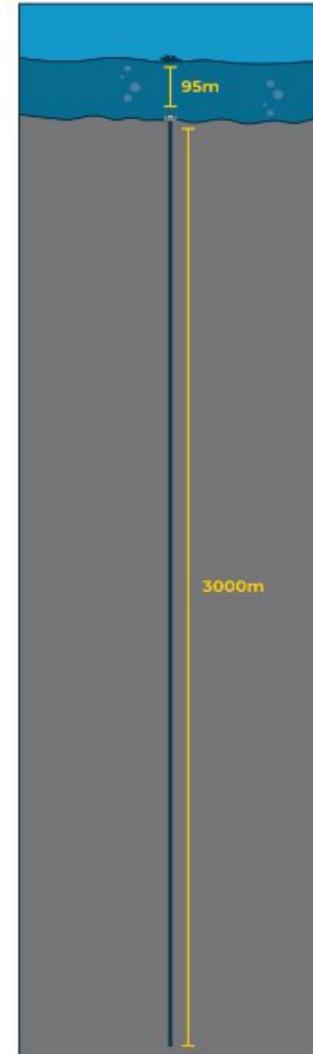


Permanent isolation of the reservoir and removal of infrastructure

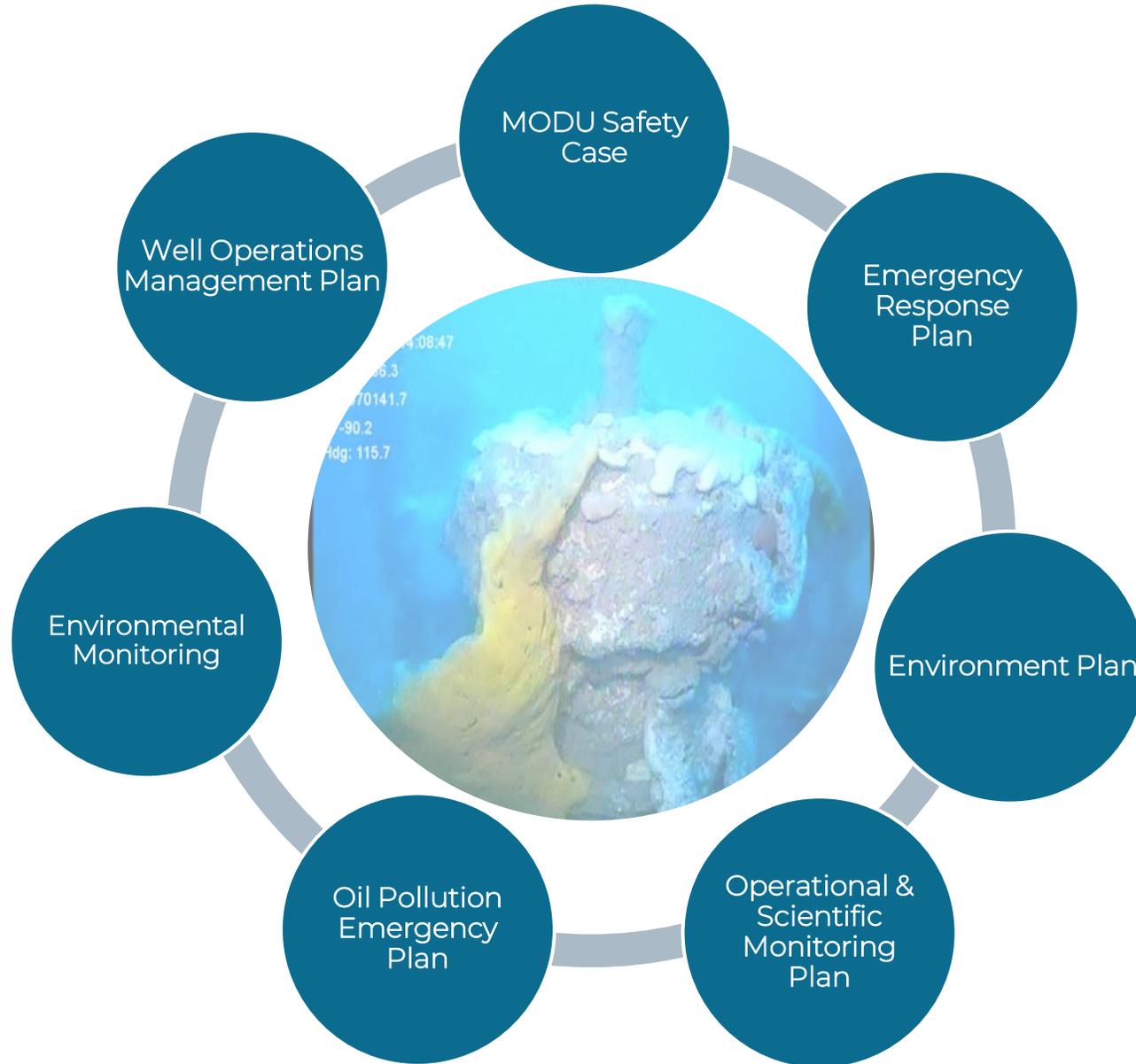
- ❑ Wells previously suspended in 1980s
- ❑ Single campaign with contingency for second campaign if required
- ❑ Rig configuration to be determined – based on feasibility, availability and weather
- ❑ Reservoir will not flow unaided, loss of well control is not considered possible
- ❑ A small volume of trapped gas (1m^3) and small volumes of cement and/or milling fluids may be released during P&A
- ❑ Infrastructure removal options under consideration in consultation with Regulator



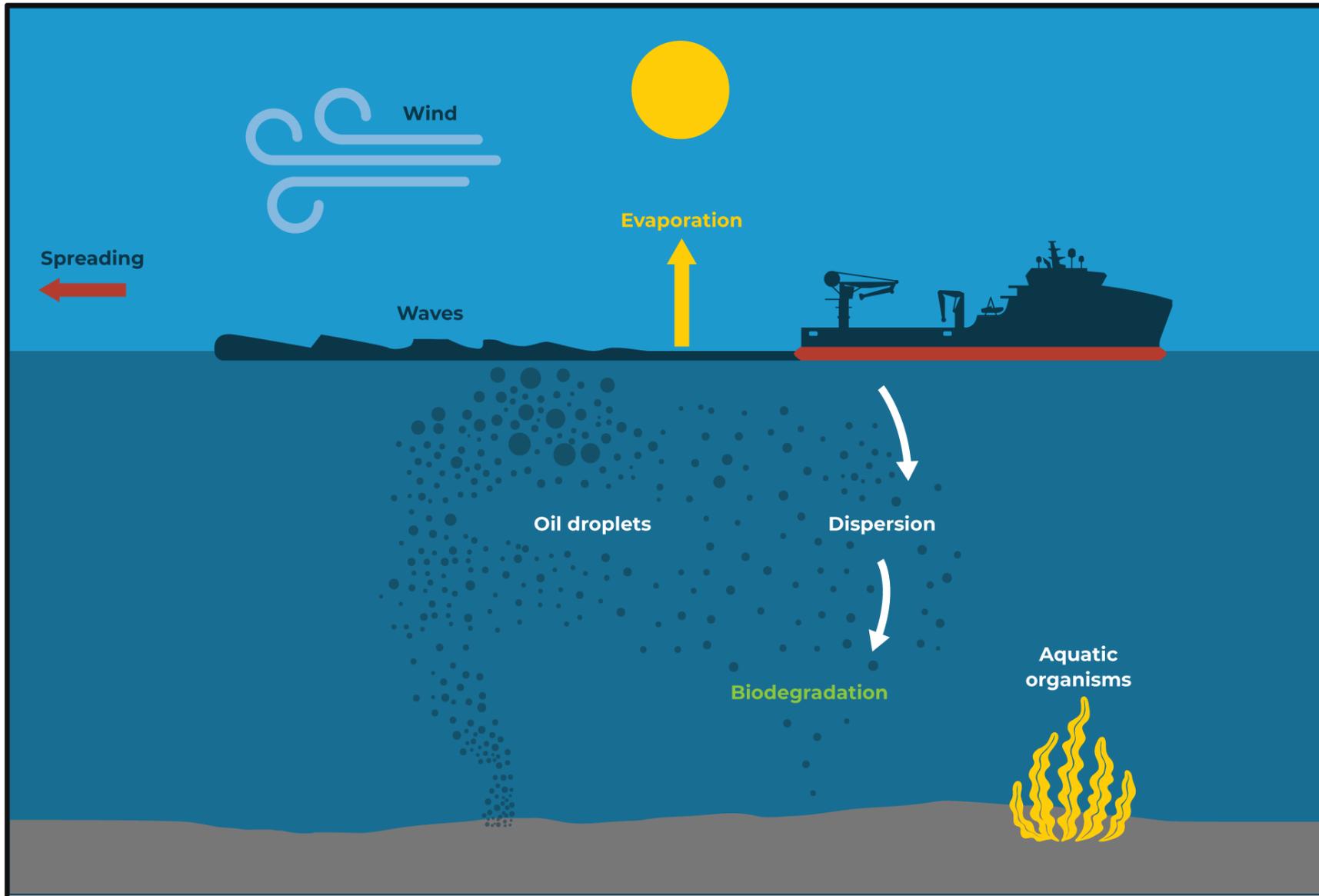
Example only



Operator Requirements



Oil Spill Modelling



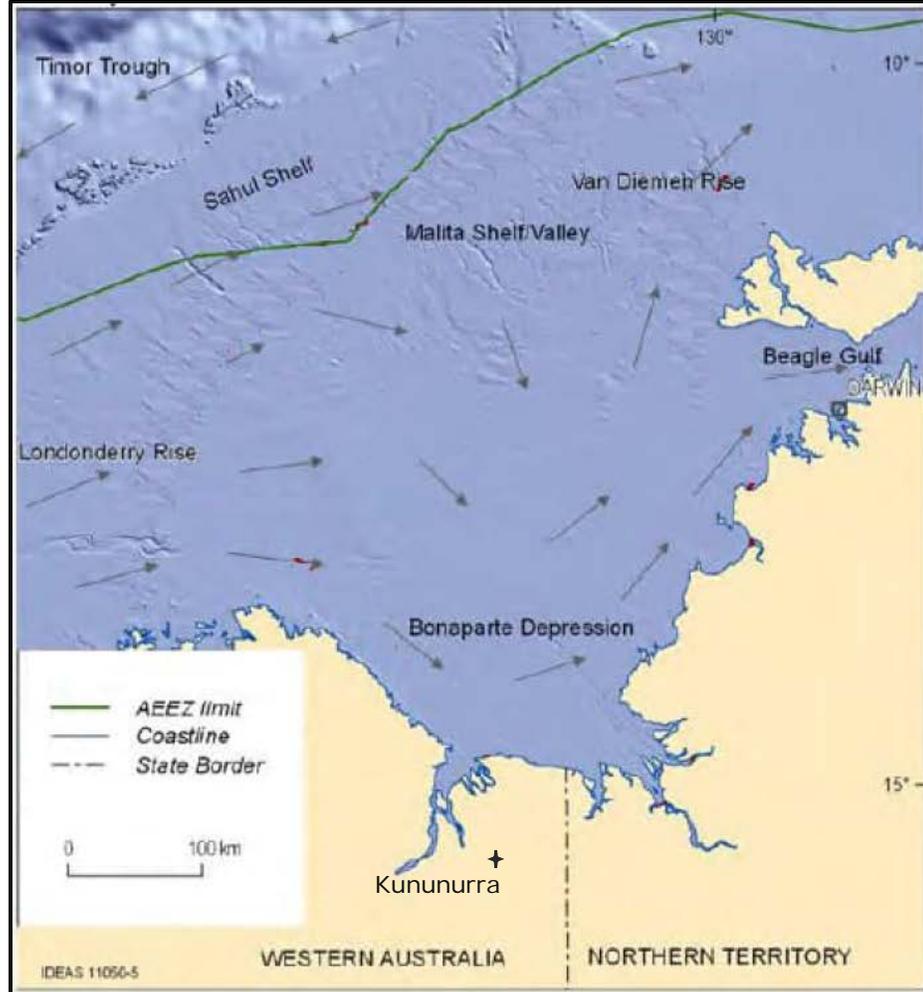
Other oil spill modelling considerations:

- Degradation
- Emulsification
- Sedimentation
- Dissolution
- Photo-oxidation

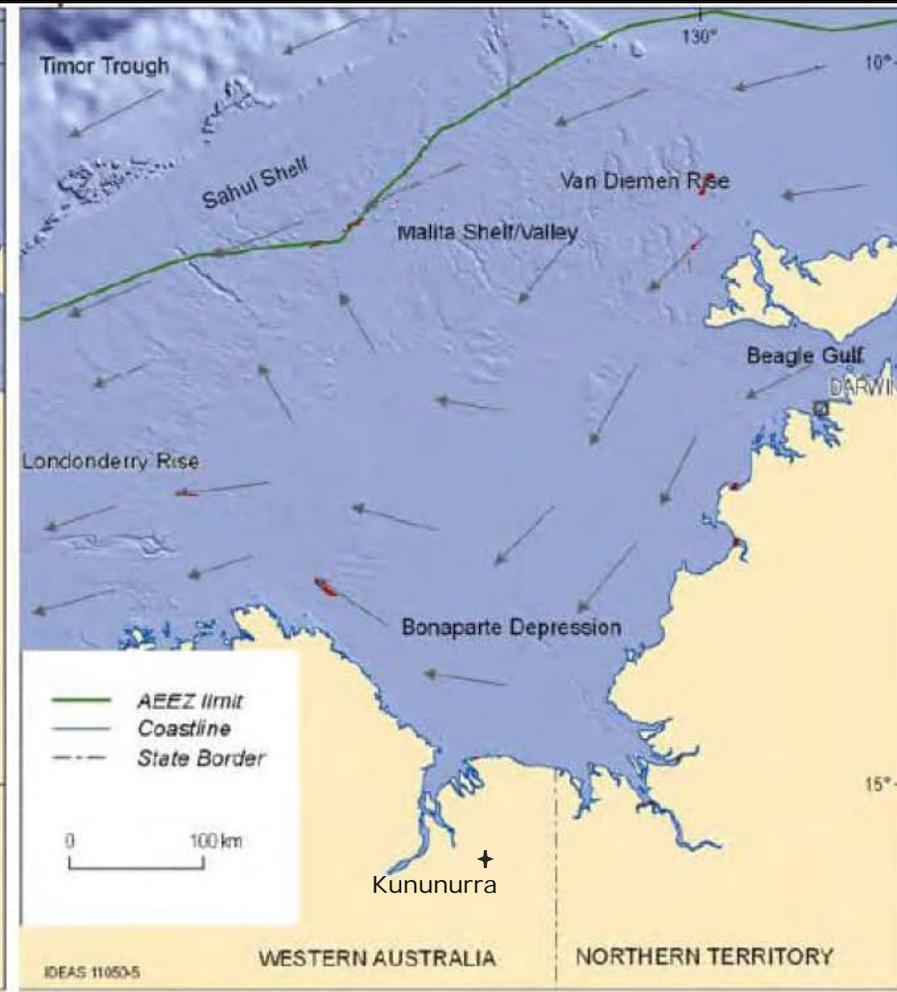
Petrel – Oceanography wind driven currents



January



July



Wind Currents

Summer – main direction towards south-east driven by monsoon winds

Winter - main direction towards north-west driven by trade winds

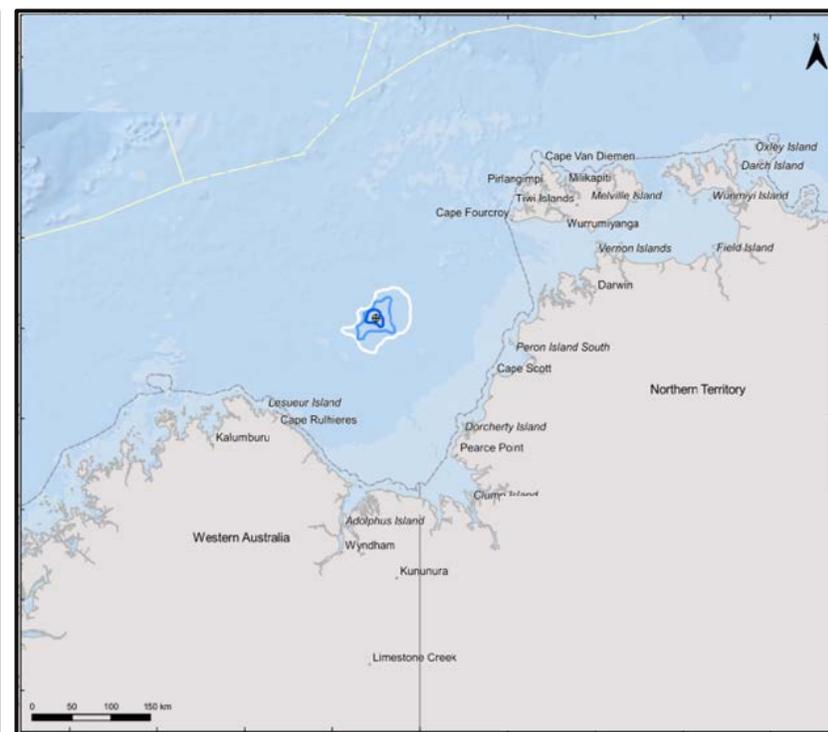
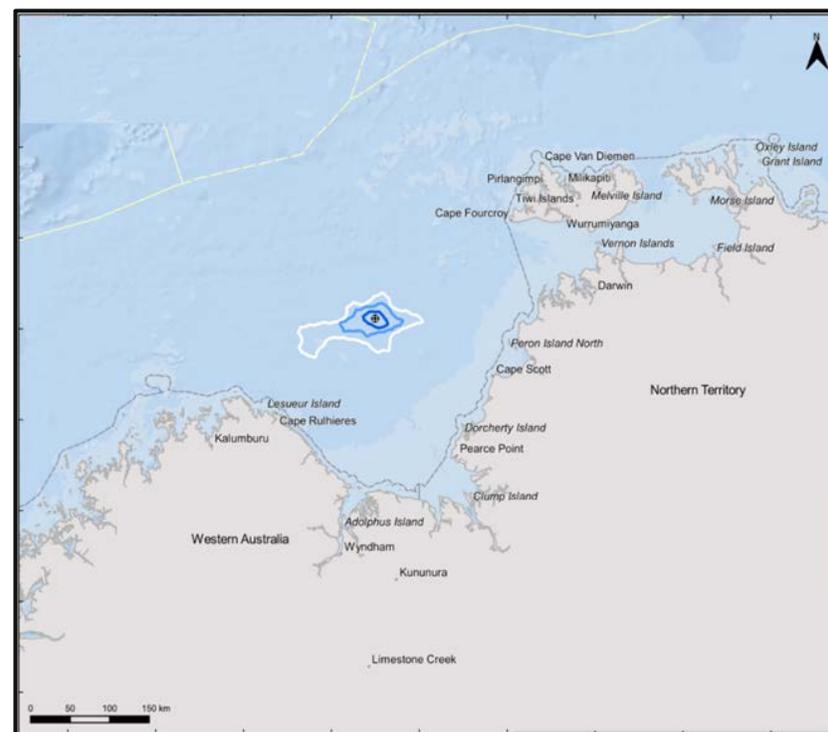
Nearshore currents become more longshore. Westerly in winter and easterly direction in summer

Very nearshore currents heavily influenced by local topography. Local clockwise and anti-clockwise on ebb and flood

Seasonal potential floating oil exposure



Zones of potential floating oil exposure from a surface vessel spill during summer and winter conditions

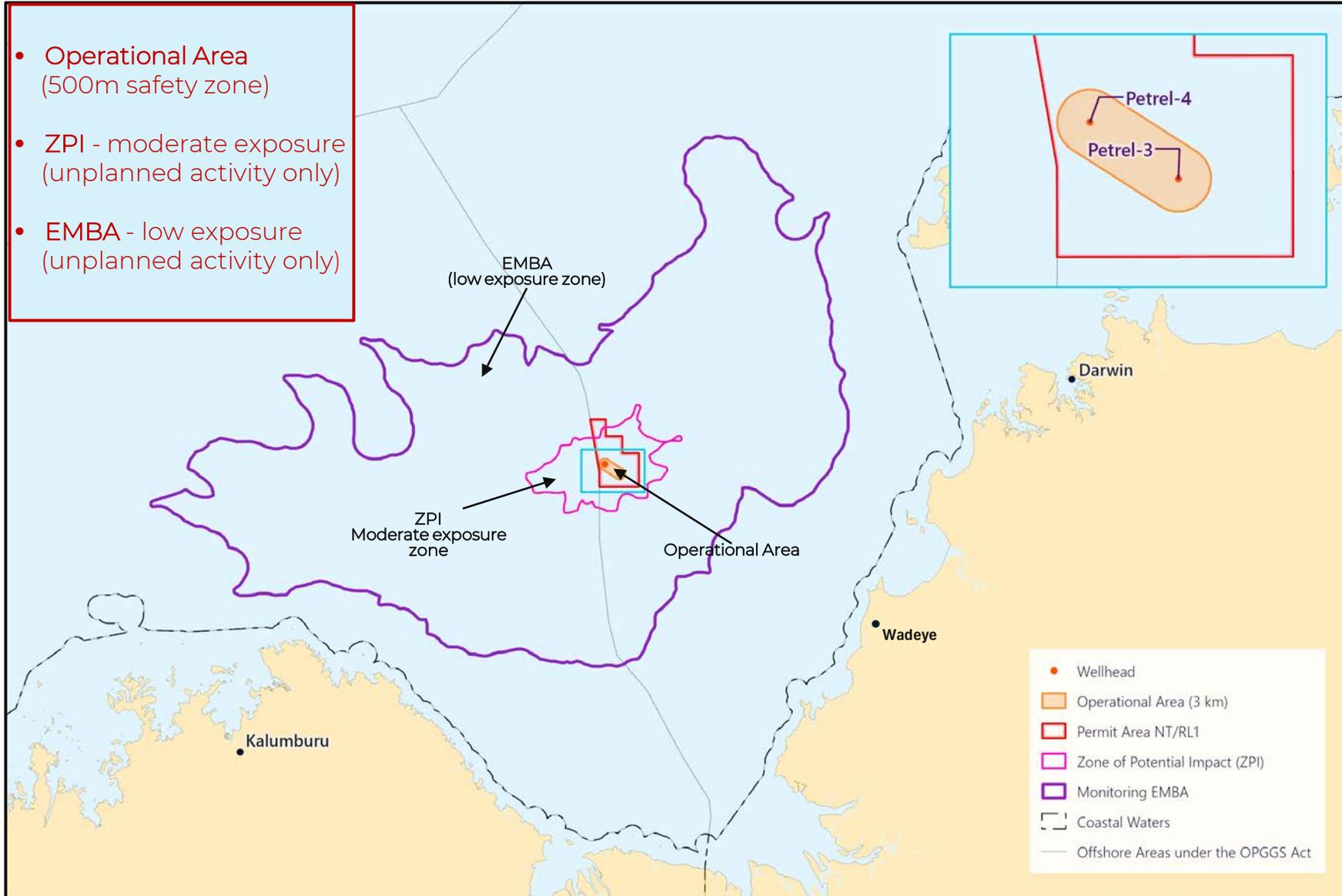


Summer Potential Floating Exposure Scenario of 300m³ surface release of MDO 100 spill simulations

Transitional Potential Floating Exposure Scenario of 300m³ surface release of MDO 100 spill simulations

Winter Potential Floating Exposure Scenario of 300m³ surface release of MDO 100 spill simulations

Activity EMBA - Marine Diesel Oil



Probability

- The likelihood of a vessel collision is considered rare

Control measures

- Navigation equipment and procedures
- Vessel emergency management plan
- Refueling transfer procedures
- Oil Pollution Emergency Plan
- Oil Spill Management Plan

Floating oil exposure

- 1g /m³ (low)
- 10g /m³ (moderate)
- 50g /m³ (high)

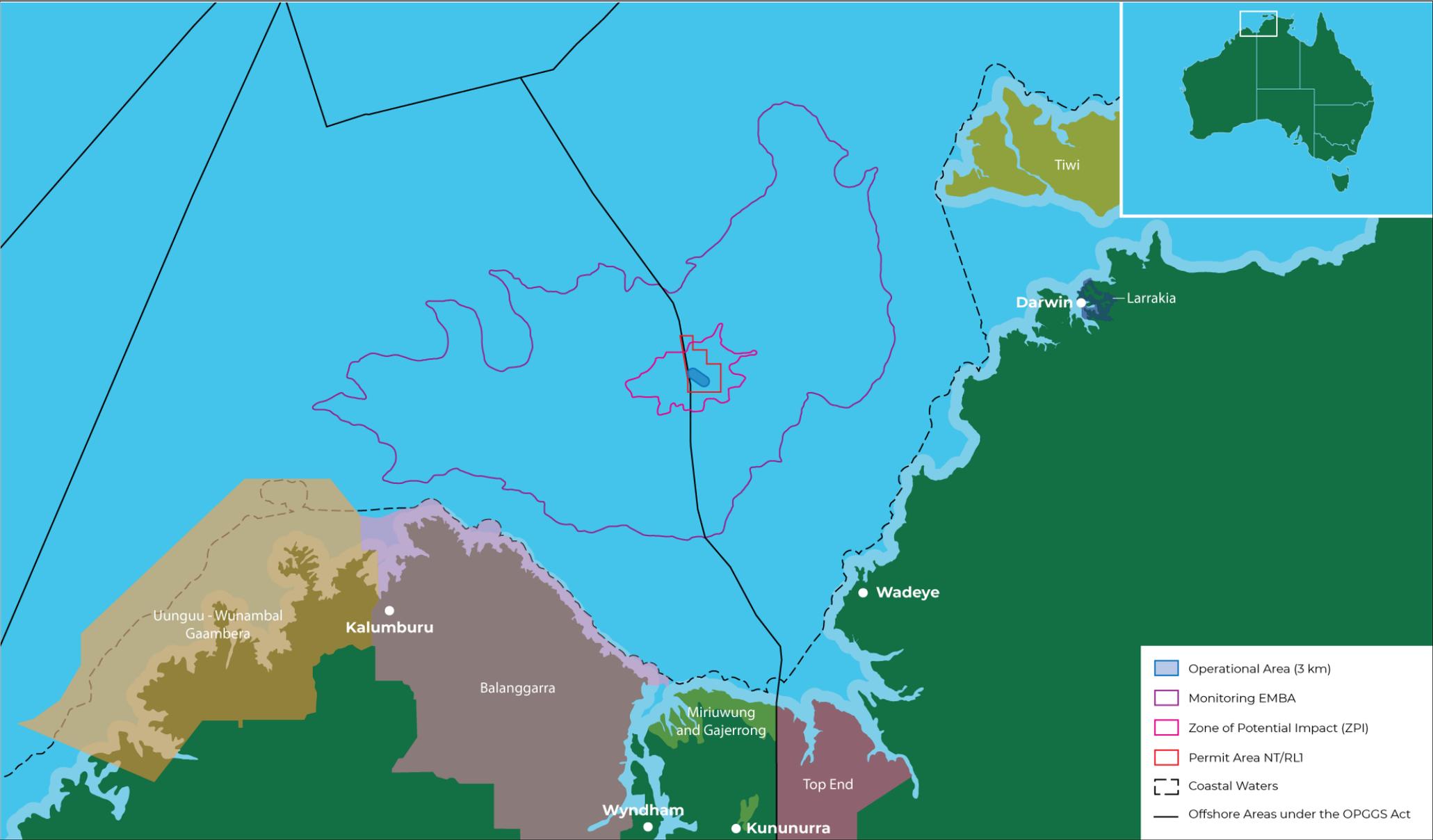
Evaporation / decay rate

- 36.1% evaporation (constant wind)
- MDO decays at a higher rate of 3% per day

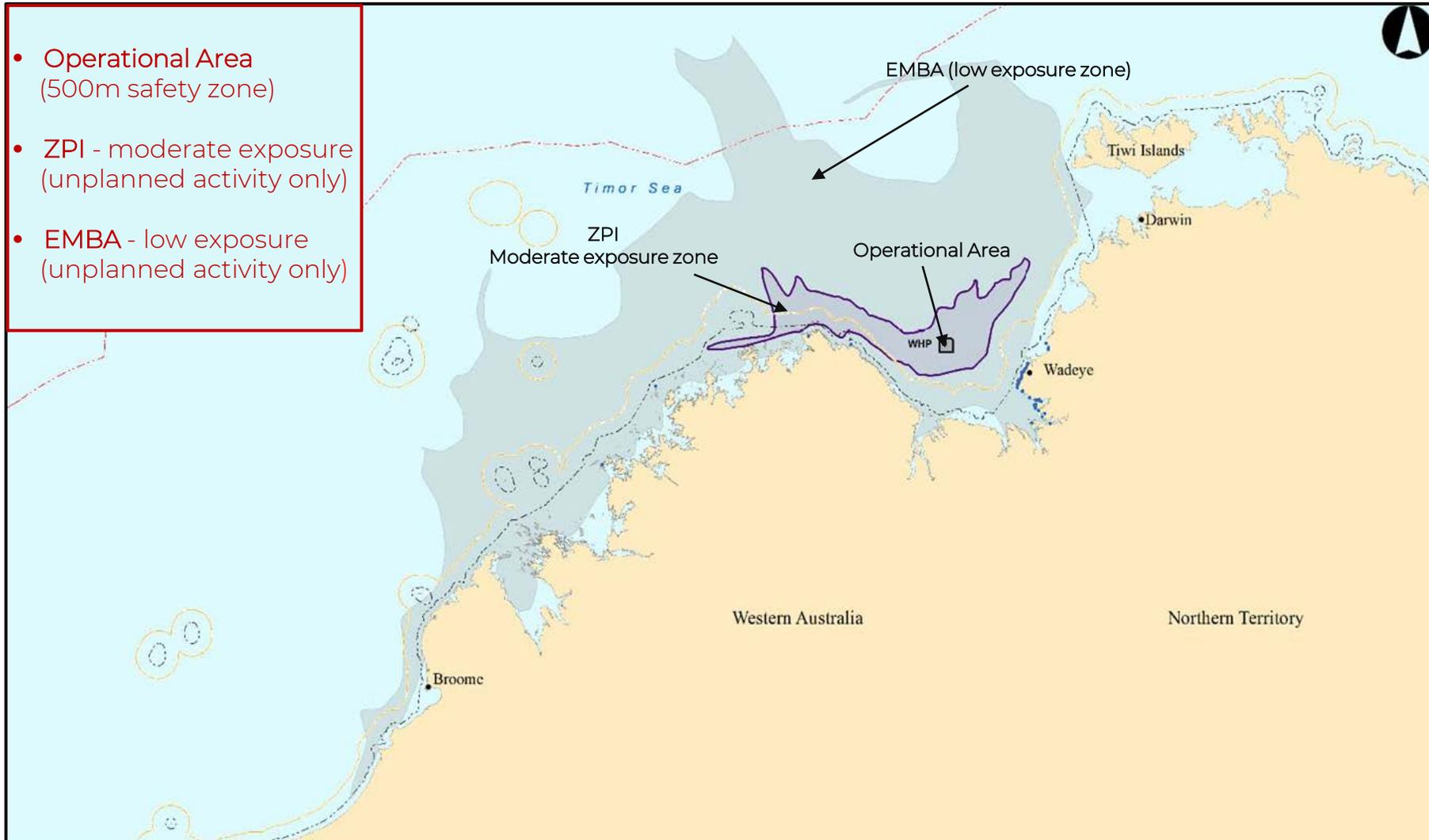
Ecological impact onshore

- No shoreline contact.

Traditional Owners



EMBA from previous Blacktip Drilling EP consultation



- Operational Area (500m safety zone)
- ZPI - moderate exposure (unplanned activity only)
- EMBA - low exposure (unplanned activity only)

- Preventative controls
- Unplanned event only if BOP fails
- ERP Activation
- High evaporation rate

Potential Environmental Impact & Mitigation Measure

Planned Impacts



Planned Event	Potential Impact	Proposed Mitigation / Control
Seabed disturbance	<ul style="list-style-type: none"> Localised, temporary reduction in water quality and benthic habitat. Maximum footprint (MODU) 1,944m² per well 	<ul style="list-style-type: none"> Low sulphur fuel Bulk transfer procedures Regulatory and GHG emissions reporting compliance Planned maintenance
Physical interaction	<ul style="list-style-type: none"> Short duration – 2 to 60 days Seven active fisheries, limited historical catch effort No tourism, recreational or defence activities expected in area 	<ul style="list-style-type: none"> Navigation equipment and procedures Maritime notices and notifications as requested Lighting for safety and navigation work
Equipment in-situ	<ul style="list-style-type: none"> Slow degradation and corrosion 	<ul style="list-style-type: none"> To leave in-situ, must demonstrate equal or better environmental outcome
Atmospheric emissions and greenhouse gas	<ul style="list-style-type: none"> Temporary, localised reduction of air quality Short duration and low fuel usage, expected to be insignificant 	<ul style="list-style-type: none"> Low sulphur fuel Bulk transfer procedures and no on board waste incineration Regulatory compliance and planned maintenance
Noise emissions Continuous	<ul style="list-style-type: none"> Change in marine fauna behaviour, mask communication Temporary or permanent hearing loss 	<ul style="list-style-type: none"> Marine assurances standard Regulatory compliance and planned maintenance
Noise emissions Impulsive	<ul style="list-style-type: none"> Geophysical survey – not seismic Sonar, side scan, echo sounder, magnetometer 	<ul style="list-style-type: none"> Regulatory compliance
Light emissions	<ul style="list-style-type: none"> Changes to marine fauna behaviour, attractant to light sensitive species 	<ul style="list-style-type: none"> Lighting for safe work and navigational purposes
Planned discharges Routine	<ul style="list-style-type: none"> Temporary and localised impact on water quality 	<ul style="list-style-type: none"> All routine marine discharges managed according to legislative requirements
Planned discharges Decommissioning	<ul style="list-style-type: none"> Water, sediment and benthic habitat quality Local marine fauna 	<ul style="list-style-type: none"> Lowest impact selection of chemicals, fluids, bulk disposal procedures

Potential Environmental Impact & Mitigation Measure

Unplanned Impacts



Unplanned Event	Potential Impact	Proposed Mitigation / Control
Interaction with other marine users – equipment in-situ	<ul style="list-style-type: none"> Fisheries – seven active, limited historical catch effort No tourism, recreational or defence activities expected in the area No known recognised shipping routes through operational area 	<ul style="list-style-type: none"> Wellheads mapped on AHO nautical charts AHO and other relevant persons notified as requested
Marine fauna interaction	<ul style="list-style-type: none"> Collision with marine fauna 	<ul style="list-style-type: none"> Observations of surroundings Reporting compliance
Introduction of marine pests	<ul style="list-style-type: none"> Invasive marine pests in operation area via vessels ballast water or biofouling on hulls 	<ul style="list-style-type: none"> All vessels assessed and managed to prevent/ Vessel compliance with biosecurity requirements
Accidental release – waste and solid objects	<ul style="list-style-type: none"> Temporary, localised reduction in water quality Marine fauna ingest accidental release Benthic habitat disturbance 	<ul style="list-style-type: none"> Waste, lifting and dropped objects procedures Retrieval where possible Chemical management procedures
Accidental release – minor loss of containment	<ul style="list-style-type: none"> Volumes expected to be >1m³ Change in water quality 	<ul style="list-style-type: none"> Use of Marine Diesel Fuel Response plans and equipment in place Chemical management procedures Planned maintenance Operational and Scientific Monitoring Plan
Accidental release – MDO (vessel collision)	<ul style="list-style-type: none"> Change in water quality, fauna behaviour, injury or mortality to marine fauna Other marine users No shoreline contact Fisheries – seven active, limited historical catch effort 	<ul style="list-style-type: none"> Pre-start notifications Regulatory compliance MDO rather than Heavy Fuel Oil Emergency procedures and response plans Regulatory compliance





Our Community Work Globally

Community Development - Sustainable Development Goals

Eni's Mission



Global Goals For Sustainable Development

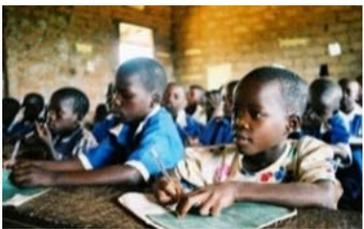
The 2030 Agenda for Sustainable Development presented in September 2015, identifies 17 Sustainable Development Goals (SDGs) which represent the common targets of sustainable development on the current complex social problems. These goals are an important reference for the international community and Eni in managing activities in those countries in which it operates.



Global Community Programs



6 SECTORS OF INTERVENTION

ACCESS TO ENERGY	LIFE ON LAND	ECONOMIC DIVERSIFICATION & GOOD FARMING	ACCESS TO WATER & SANITATION	EDUCATION & VOCATIONAL TRAINING	HEALTH
					

Promoting the Respect of Human Rights and Transparency along the business lifecycle



Supporting National Development Plans also through Public Private Partnerships



Adopting International Organizations' standards, methodologies and tools



Our Community Work On Country

Local Community Development - Thamarrur Country

(Obtained permission to use pictures)

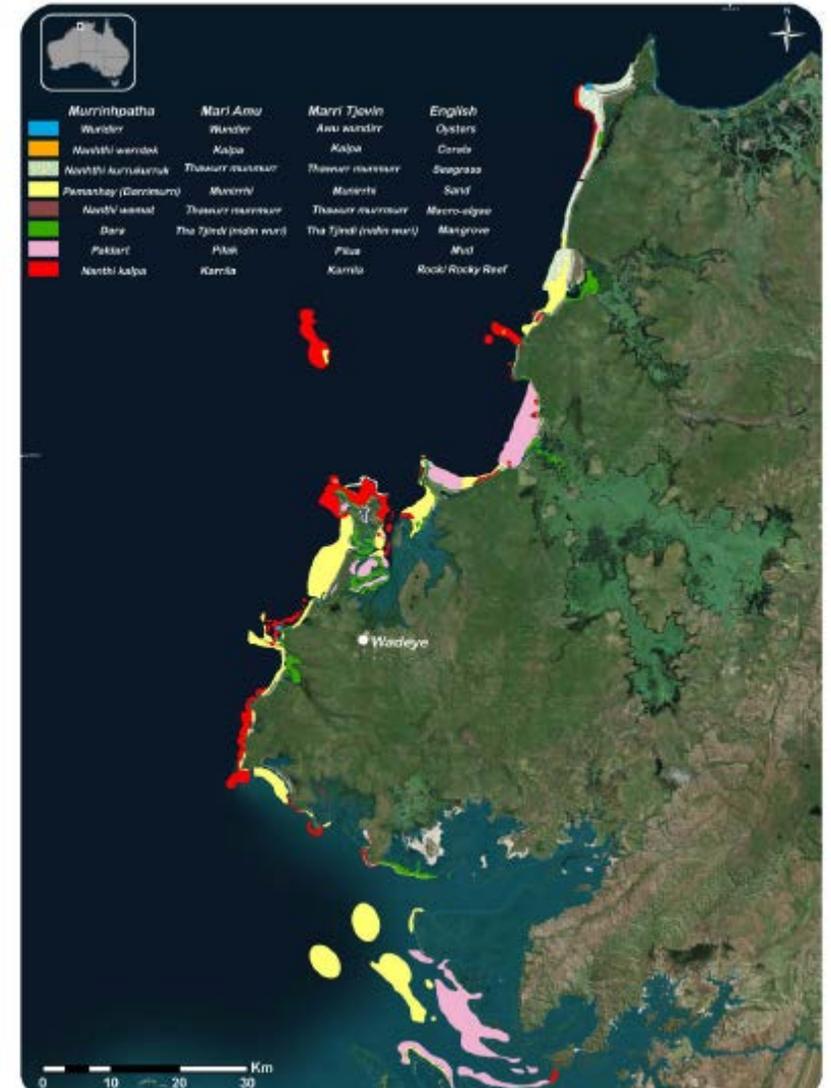
Eni's Local Contribution



Participatory Mapping with TOs & Rangers



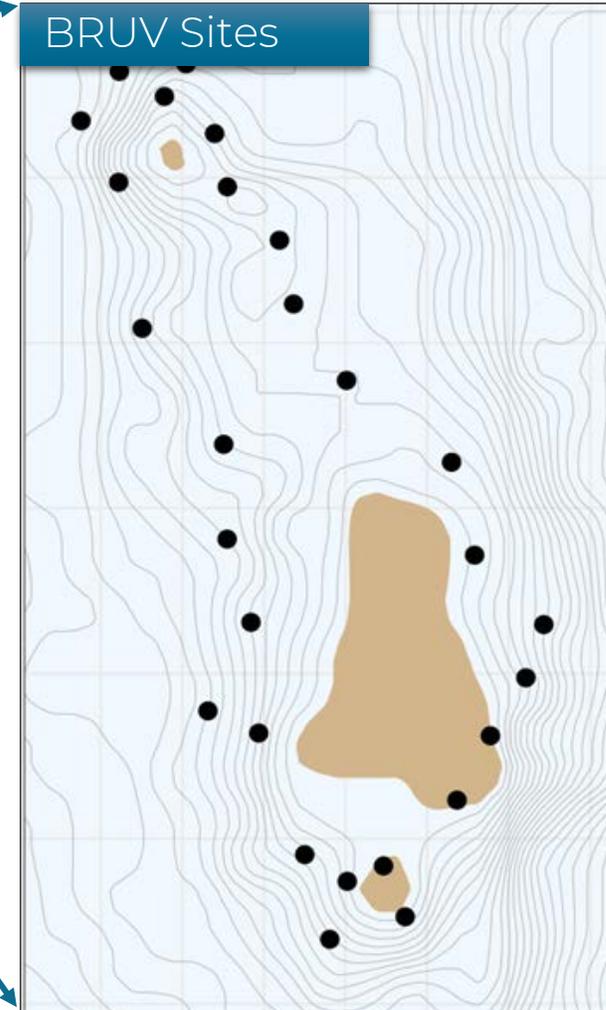
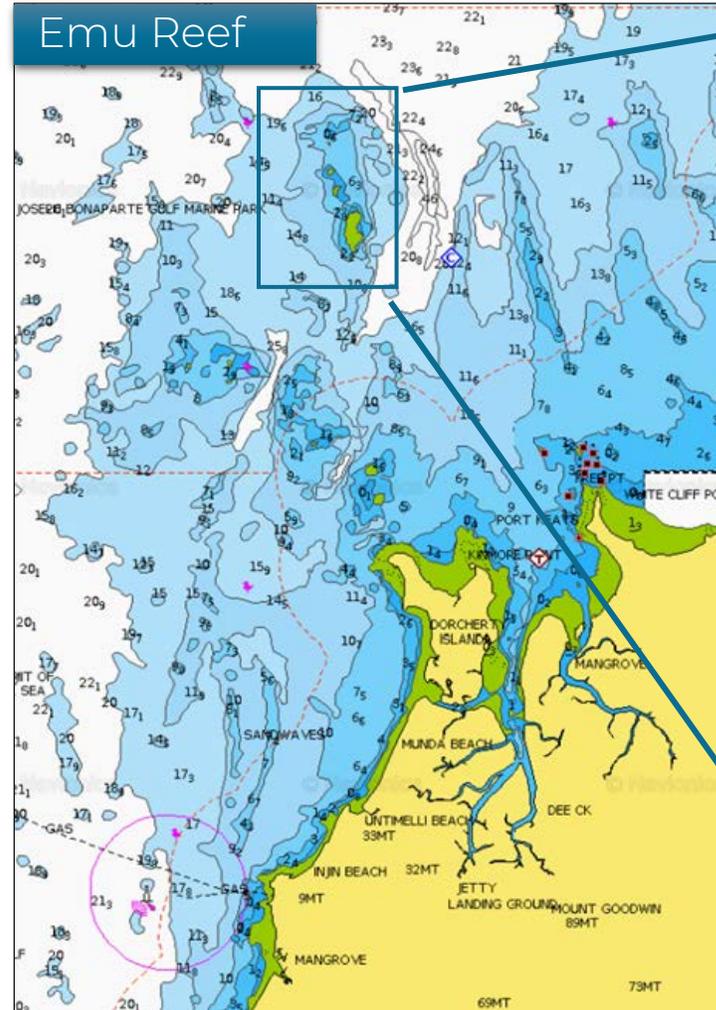
Thamarrurr Sea Country Habitat Map



Eni's Local Contribution



Baited Remote Underwater Video Training & data collection



Eni's Local Contribution



Shellfish & Sediment Monitoring with Rangers



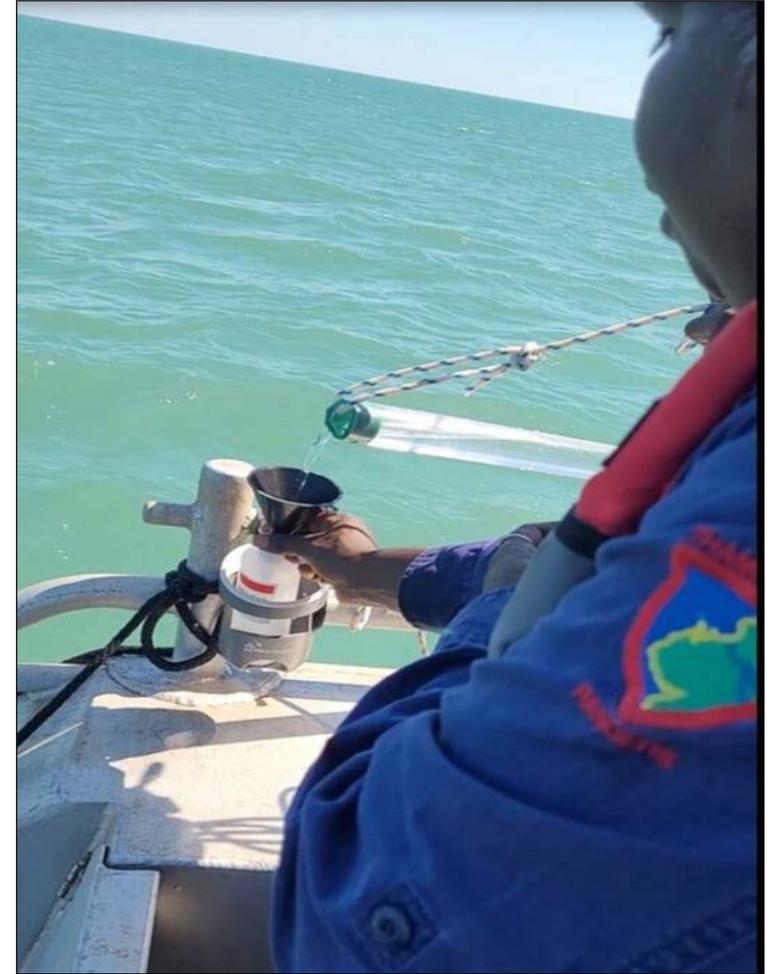
SPM Monitoring by Rangers



Eni's Local Contribution



Water Sampling Training with AIMS





Where To From Here

Consultation

Where to From Here . .

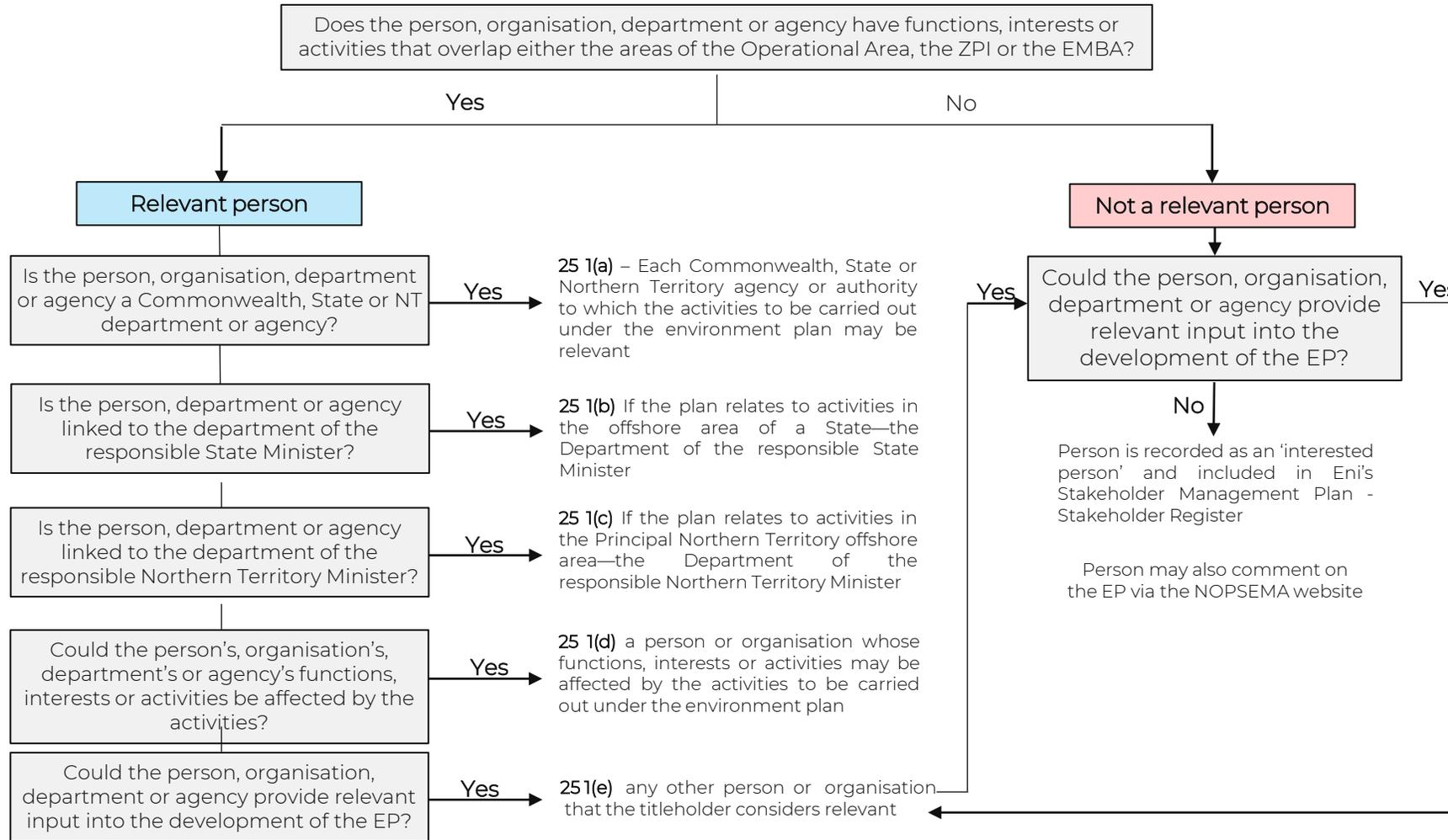


- ❑ Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan consultation commenced on 19 June 2024 and, at this stage, will be continuing until end August 2024
- ❑ If you would like to seek more information, get further clarification, or request another meeting, please contact us through info@petreleni.com.au
- ❑ The Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan is expected to be submitted to NOPSEMA by the end of August 2024
- ❑ Any other Questions?



Thank you

What is a Relevant Person?



Decommissioning - Plug and Abandonment (P&A)

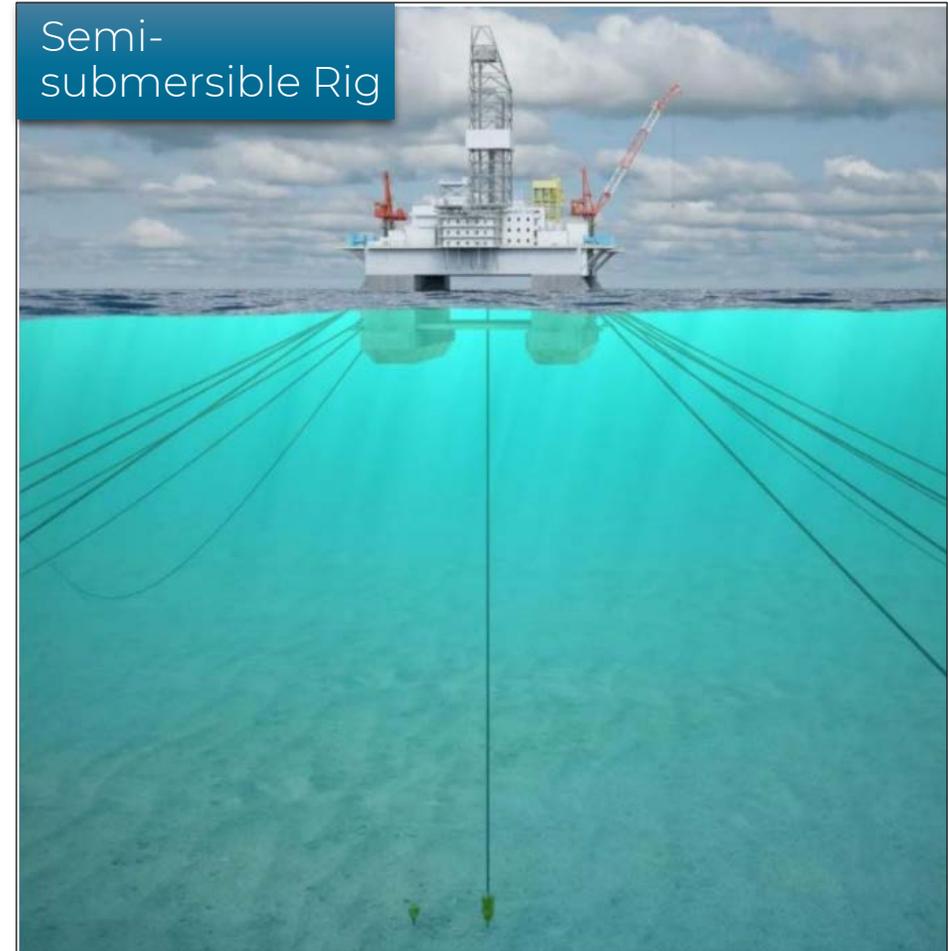


Rig examples

Jack Up Rig



Semi-submersible Rig



Potential Environmental Impact & Mitigation Measure



Planned Impact - Seabed disturbance

Seabed disturbance will be caused by:

- seabed sampling during the geotechnical survey.
- positioning of the mobile offshore drilling unit (MODU), if a moored or jack-up MODU is used.
- removal of marine growth on the wellhead. • installation of temporary winches on the seabed.
- cutting of the wellhead
- retrieval of the wellhead and guide base/s from the seabed.

Potential Impact

- Seabed disturbance will cause a localised and temporary reduction in water quality, and disturbance to benthic habitat.
- The maximum seabed disturbance footprint is from MODU positioning, if a moored MODU is used.
- In this case, up to 12 anchors and mooring lines will be laid, giving a maximum footprint of 1,944 m² per well.
- There is no sensitive benthic habitat, Marine Parks or Key Ecological Features (KEFs) in the operational area.

Proposed Management/Mitigation

- Use low sulfur fuel on the vessels and MODU, in accordance with legislative requirements (e.g. Marine Orders).
- Bulk solids transferred in accordance with bulk transfer procedures to reduce the risk of an unintentional release to sea and air.
- No waste incineration onboard.
- Ozone-depleting substances (ODS) managed in accordance with MARPOL.
- Compliance with regulatory requirements for marine air pollution and GHG missions reporting.
- MODU and vessel Planned Maintenance System (PMS) in place to maintain DP, engines and machinery.

Potential Environmental Impact & Mitigation Measure



Planned Impact - Physical interaction

The physical presence of the MODU and movement of vessels within the operational area can interfere with other marine users by causing displacement from the area during activities.

Potential Impact

The operational area is a 3 km radius around the two wells and the corridor between them. There is no formal Petroleum Safety Zone; however, exclusion and cautionary zones will be in place during activities.

Activities in the operational area are of short duration, expected to last between 2 to 60 days.

Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area.

There are no tourism or recreational fishing activities expected in the operational area due to distance from shore, and no Maritime Defence Exercise areas.

Proposed Management/Mitigation

- Navigation equipment and procedures, in accordance with legislative requirements.
- Maritime notices will be complied with.
- All activities will occur within the operational area.
- Other relevant notifications may be made, as requested by stakeholders.
- Lighting will be used as required for safe work conditions and navigational purposes.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Physical presence – equipment in-situ

If the wellhead or other equipment (e.g. the guidebase/s) are left in-situ following decommissioning, the permanent physical presence of the wellhead or other equipment will continue to:

- Provide a hard substrate resulting in the creation of a new habitat.
- Potentially interrupt natural sediment movement in the immediate vicinity of the wellhead remaining in-situ permanently.
- Introduce contaminants to the water column and sediment surrounding the wellhead as it degrades overtime.

Potential Impact

The gradual degradation and corrosion of the wellheads and equipment over time will result in trace amounts of metals to the water column and surrounding sediments. The main constituent of low-alloy steel used for this era of wellhead is iron (typically 95-98%), which is only toxic to marine organisms at extremely high concentrations – which are unlikely to be reached in this offshore location. The remaining constituents are chromium, molybdenum, manganese, and <1% of trace alloys including nickel, silicon, sulfur and phosphorous.

Corrosion of the wellhead is likely to be slow (at a rate of ~0.2 mm/year) because of exposure to strong water currents.

There are no other materials identified to be associated with the wellheads – i.e. plastic components or surface coatings.

Proposed Management/Mitigation

For wellheads and other equipment (e.g. guidebase/s) to be left in-situ following decommissioning, the EP must demonstrate an equal or better environmental outcome; and demonstration of ALARP and acceptability.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Atmospheric emissions and greenhouse gas (GHG):

- Atmospheric and GHG emissions are generated by the MODU and vessels as a result of combustion for power generation.
- Vessels may also use ozone-depleting substances (ODS) in refrigeration systems.
- No waste will be incinerated on board.

Potential Impact

- Hydrocarbon combustion may result in a temporary, localised reduction of air quality in the environment immediately surrounding the release point.
- Non-GHG emissions (such as NOx and SOx) and GHG emissions can lead to a reduction in local air quality.
- Given the short duration of the campaigns (between 2 to 60 days) and relatively low fuel usage, the contribution of atmospheric and GHG emissions to the global carbon budget is expected to be insignificant and is not evaluated further.

Proposed Management/Mitigation

- Use low sulphur fuel on the vessels and MODU, in accordance with legislative requirements (e.g. Marine Orders).
- Bulk solids transferred in accordance with bulk transfer procedures to reduce the risk of an unintentional release to sea and air.
- No waste incineration onboard.
- Ozone-depleting substances (ODS) managed in accordance with MARPOL.
- Compliance with regulatory requirements for marine air pollution and GHG emissions reporting.
- MODU and vessel Planned Maintenance System (PMS) in place to maintain DP, engines and machinery.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Noise emissions - Continuous:

Continuous noise emissions will be generated by the operation of support vessels, helicopters, operation of the MODU and cutting of the wellheads.

Potential Impact

Underwater noise emissions can cause:

- a change in marine fauna behaviour.
- mask communication.
- temporary or permanent hearing loss.

The greatest source of noise emissions is if a MODU on Dynamic Position (DP) is used (from thruster noise), and its support vessels.

The operational area does not overlap with any biologically important areas (BIAs) for marine mammals or fish/ sharks, though it does for 4 species of marine turtles – any individuals present would be transitory.

Potential impacts are likely to be restricted to localised and temporary avoidance behaviour. Given the short duration of the MODU campaign (60 days), the potential impacts are considered low.

Proposed Management/Mitigation

- Compliance with administrative controls (such as EPBC Regulations Part 8) to reduce interactions with marine fauna.
- Documented maintenance program in place for equipment on vessels that provides a status on the maintenance of equipment.
- MODU and vessel Planned Maintenance System (PMS) in place to maintain DP, engines and machinery.
- Marine assurance standard in place.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Noise emissions – Impulsive:

Impulsive noise emissions generated by acoustic survey techniques during the geophysical survey – i.e. Multibeam echo sounder, side scan sonar, sub-bottom profiling, magnetometer, ultrashort baseline positioning system.

Such equipment is designed to characterise the seabed topography, bathymetry, potential geohazards, and other seafloor features prior to MODU placement at the wellheads.

Potential Impact

The operational area does not overlap with any biologically important areas (BIAs) for marine mammals or fish/ sharks, though it does for 4 species of marine turtles – any individuals present would be transitory.

The impulsive noise emissions generated by the various acoustic survey instruments may result in localised and temporary behavioural changes to marine fauna within tens or hundreds of metres.

Proposed Management/Mitigation

Compliance with administrative controls (such as EPBC Regulations 8 (Part 8) to reduce interactions with marine fauna.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Light Emissions:

Lights on the MODU and vessels will be required on a 24-hour basis during the activities for safety and navigational purposes, in accordance with navigational requirements.

There is no proposed flaring.

Potential Impact

Light emissions have the potential to result in changes to marine fauna behaviour, by acting as an attractant to light-sensitive species, leading to possible increased predation and/or disorientation.

The closest nesting BIA for marine turtles is ~116 km from the 20 km buffer used for light impact assessment – meaning light from the MODU and vessels is not visible from shore; and there is no potential to impact nesting females or hatchlings.

The operational area does not overlap any BIAs for seabirds, and is >150 km from shore, meaning there is no potential to impact fledging behaviour.

There is the potential for a small number of adult seabirds and migratory shorebirds may be attracted to the MODU and vessels, however given the short duration of the campaigns (between 2 to 60 days), this is considered minor.

Proposed Management/Mitigation

Lighting will be used as required for safe work conditions and navigational purposes.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Planned discharges - Routine:

Operation of vessels and the MODU will routinely discharge the following to the marine environment:

- sewage
- greywater
- putrescible waste
- treated bilge
- cooling water and brine
- deck drainage.

Potential Impact

A temporary and localised impact on water quality may result in a change in water quality and changes to predator-prey dynamics.

Given the relatively low volume and intermittent nature of planned vessel discharges, the short duration of the campaigns (between 2 to 60 days), the water depth and open ocean environment of the operational area, the potential impact is expected to be localised to the immediate proximity of the release, and of short duration.

Proposed Management/Mitigation

- All routine marine discharges will be managed according to legislative requirements.
- MODU and vessel PMS in place to maintain DP, engines and machinery.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Planned discharges - Decommissioning

Decommissioning activities may result in the following discharges to the marine environment:

- inhibited seawater (chemical additives include biocide, oxygen scavenger, dyes, corrosion inhibitor).
- control (hydraulic) fluid.
- cement and cement debris.
- Water Based Mud (WBM).
- reservoir gas.
- cleaning chemicals (weak acids)

No synthetic based mud will be used.

Potential Impact

Discharges of muds and other fluids have the potential to impact to:

- Water quality.
- Sediment quality and benthic habitat.
- Local marine fauna.

The benthic fauna and seabed at the operational area is widely represented on the Joseph Bonaparte Gulf.

Given the quantities of the discharges, the low toxicity of WBM and cement and high dispersion in the open, offshore environment, any impact on the marine environment from the discharges are expected to be minor and temporary. Recovery of water quality conditions is expected within hours after the cessation of the discharges.

Cement discharge impacts to the marine environment are associated with smothering of benthic and infauna communities in the vicinity of the wellheads. Due to the localised area of disturbance, impacted benthic communities are expected to rapidly re-colonise any disturbed areas upon completion of the activities.

Proposed Management/Mitigation

- Selection of chemicals to reduce impact to as low as reasonably practicable (ALARP) and acceptable levels.
- Quality control limits for barite.
- Bulk powder, fluids and brine discharge framework, to restrict the discharge of leftover bulk products to ALARP.
- Drill cuttings returned to the MODU will be discharged below the water line to facilitate dispersion.
- Lost-circulation material procedures.
- Cement remaining at the completion of drilling is managed so as to avoid or minimise its discharge overboard.
- Chemical assessment procedure will be implemented.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Interaction with other marine users -equipment in-situ:

If the wellhead or other equipment (e.g. the guide base/s) are left in-situ following decommissioning, the permanent physical presence of the wellhead or other equipment may cause an impact to other marine users (e.g. commercial fisheries, petroleum industry, or shipping)

Potential Impact

The wellheads have been in-situ on the seabed for the past ~40 years without any reported incidents or issues. The height of the wellheads is only ~3 m above the seabed, and the guidebase/s are partially buried.

Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area.

There are no tourism or recreational fishing activities expected in the operational area due to distance from shore, and no Maritime Defence Exercise areas.

There are no known recognised major shipping routes through the operational area, and the water depth (~95 m) and height of the wellheads (~3 m) mean it is unlikely to cause any disturbance or displacement of shipping traffic.

Proposed Management/Mitigation

- Wellheads are charted on AHO nautical charts so that marine users are aware of their location.
- AHO and any other stakeholders who requested to be informed of wellhead locations (i.e fisheries) are notified.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact Marine fauna interaction

There is the potential for vessels to collide with marine fauna, including marine mammals, fish, marine reptiles and seabirds.

The main collision risk is through vessel collision with large, slow-moving cetaceans, potentially resulting in severe injury or mortality.

Potential Impact

Given the short duration of the campaigns (between 2 to 60 days), and the slow speeds at which vessels operate, collisions with marine fauna are considered highly unlikely.

Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

Compliance with administrative controls (such as EPBC Regulations Part 8) to reduce interactions with marine fauna. • Any vessel strikes with cetaceans will be reported in the National Ship Strike Database. • Observations of the surroundings will be undertaken from the vessel/s for marine fauna.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Introduction of marine pest species

There is the potential for introduction and establishment of invasive marine pests to the operational area via vessels ballast water or biofouling on vessel hulls.

Potential Impact

The risk of introducing IMS is limited by the depth of the operational area (>50 m), which is not directly adjacent to any shallow shoals or banks. The substrate in the operational area does not have any hard substrate to which IMS can attach.

Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

- All vessels will be assessed and managed as appropriate to prevent the introduction of marine pests.
- Vessels will comply with biosecurity requirements for ballast water and biofouling and comply with the Maritime Arrivals Reporting System (MARS).

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Accidental release – waste and solid objects

There is the potential for the accidental disposal of hazardous wastes (e.g. hydrocarbon contaminated materials, batteries, paint cans) and nonhazardous solid wastes (e.g. paper and cardboard, wooden pallets, scrap steel, rope, glass and plastics).

There is the potential for dropped objects during retrieval activities – i.e. the wellhead or guidebase/s (in particular if corroded) or the winches.

Potential Impact

The accidental release of wastes can cause a temporary and localised reduction in water quality, and the potential for marine fauna to ingest or become entangled with solid waste (garbage).

If equipment is dropped, this may cause disturbance or smothering of benthic habitats. The largest footprint of any item of equipment that will be lifted or retrieved during the campaigns is 30 m³ (footprint of a guidebase or basket).

This is a small area; and benthic habitats are known to rapidly recover. There are no KEFs or sensitive benthic habitat in the operational area.

Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

- Procedures to reduce the potential for loss of non-hazardous and hazardous waste and dropped objects to be followed.
- Dropped objects to be retrieved where possible.
- Lifting procedures will be implemented.
- For hazardous chemicals, including hydrocarbons, hazardous chemical management procedures will be in place to reduce the risk of an accidental release to sea.
- Chemical assessment procedure will be implemented.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Accidental release – Minor loss of containment

Minor volumes of hydrocarbon or other chemicals (e.g. hydraulic fluids, deck spills) may be accidentally released to the marine environment due to:

- Bulk product spills (e.g. cement, barite).
- Loss of primary/secondary containment.
- Incorrect handling and storage.
- ROV failure.

Potential Impact

Minor accidental releases of hydrocarbons or chemicals can cause a change in water quality. Expected volumes are small (<1 m³), and there is no potential for injury or mortality to marine fauna.

Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

- Use of MDO rather than Heavy Fuel Oil (HFO) on vessels (MDO is lighter than HFO and will evaporate faster and persist less in the marine environment).
- Response plans and equipment will be in place and maintained to manage spills to the environment (e.g. oil pollution emergency plans). • Administrative control, such as bunkering / bulk refuelling procedures.
- In the event of a minor loss of containment to sea, Oil Pollution Emergency Plan (OPEP) requirements will be implemented to mitigate environmental impacts.
- Chemical assessment procedure will be implemented.
- For hazardous chemicals, including hydrocarbons, hazardous chemical management procedures will be in place to reduce the risk of an accidental release to sea.
- Remotely operated vehicle (ROV) inspection and maintenance procedures.
- Procedures to reduce the potential for loss of non-hazardous and hazardous waste and dropped objects to be followed.
- MODU and vessel PMS in place to maintain DP, engines and machinery.
- Where required, operational and scientific monitoring undertaken in accordance with Eni's Operational and Scientific Monitoring Plan.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Accidental release – MDO (vessel collision)

A release of up to 300 m³ marine diesel oil (MDO) could occur from a collision between the activity vessels and a third-party vessel due to factors such as h

Human error, poor navigation, vessel equipment failure or poor weather. A smaller volume of MDO (~50 m³) could be released during bunkering (i.e. refuelling of the MODU).

Potential Impact

An accidental release of MDO can cause a change in water quality, a change in fauna behaviour, injury or mortality to marine fauna and an impact to other marine users.

Potential impacts include those to plankton, fish, marine turtles, marine mammals, seabirds and migratory shorebirds, commercial fisheries, and cultural heritage.

MDO is a relatively volatile, nonpersistent nature hydrocarbon with rapid evaporation on the sea-surface (typically ~36% within the first 2 hours).

Hydrocarbon spill modelling does not predict any shoreline contact; or any contact with Marine Parks or KEFs.

Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area. There are no tourism or recreational fishing activities expected, and no Maritime Defence Exercise areas.

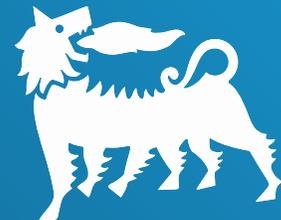
Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

- Pre-start notifications will be issued.
- Regulatory requirements for the prevention of vessel collisions and safety and emergency arrangements.
- Use of MDO rather than Heavy Fuel Oil (HFO) on vessels.
- In the event of an oil spill to sea, OPEP requirements will be implemented to mitigate environmental impacts.
- Response plans and equipment will be in place and maintained to manage spills to the environment (e.g., oil pollution emergency plans).
- Administrative control, such as bunkering / bulk refuelling procedures.
- Vessels selected and on-boarded are operated, maintained and manned in accordance with industry standards (Marine Orders) and regulatory requirements.
- Where required, operational and scientific monitoring undertaken in accordance with Eni's Operational and Scientific Monitoring Plan.

Customised Presentations

1. Balangarra Wyndham – 2 September 2024
2. East Kimberley Chamber of Commerce and Industry Business After Hours Event – 31 July 2024
3. Kalumburu Community – 28 August 2024



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Balanggarra Traditional Owners Consultation

Shire of Wyndham East Kimberley - Office Chambers
6 Koolama Street, Wyndham, WA

2 September 2024

Introduction to the Eni team



Angelina Branco

Stakeholder Engagement & CSR Manager

Mike Prime

Stakeholder Engagement Adviser



Why are we meeting with you?

Reasons for this consultation

Why are we here?

(Reason for this consultation)



- ❑ **Meeting people in our footprint is a part of how we like to work**
 - It's good corporate social responsibility
 - We can learn about and respond to community interests and requests
 - It helps identify those interested in our activities
 - It sometimes creates partnership opportunities

- ❑ **We're specifically here to consult on the preparation of the Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan**
 - This includes relevant and interested individuals, groups and communities (relevant persons)
 - We want to provide relevant persons with face-to-face opportunities to give us feedback directly
 - We want to understand the impacts, risks and opportunities linked to our activities in our footprint

Why are we here?

(Reason for this consultation)

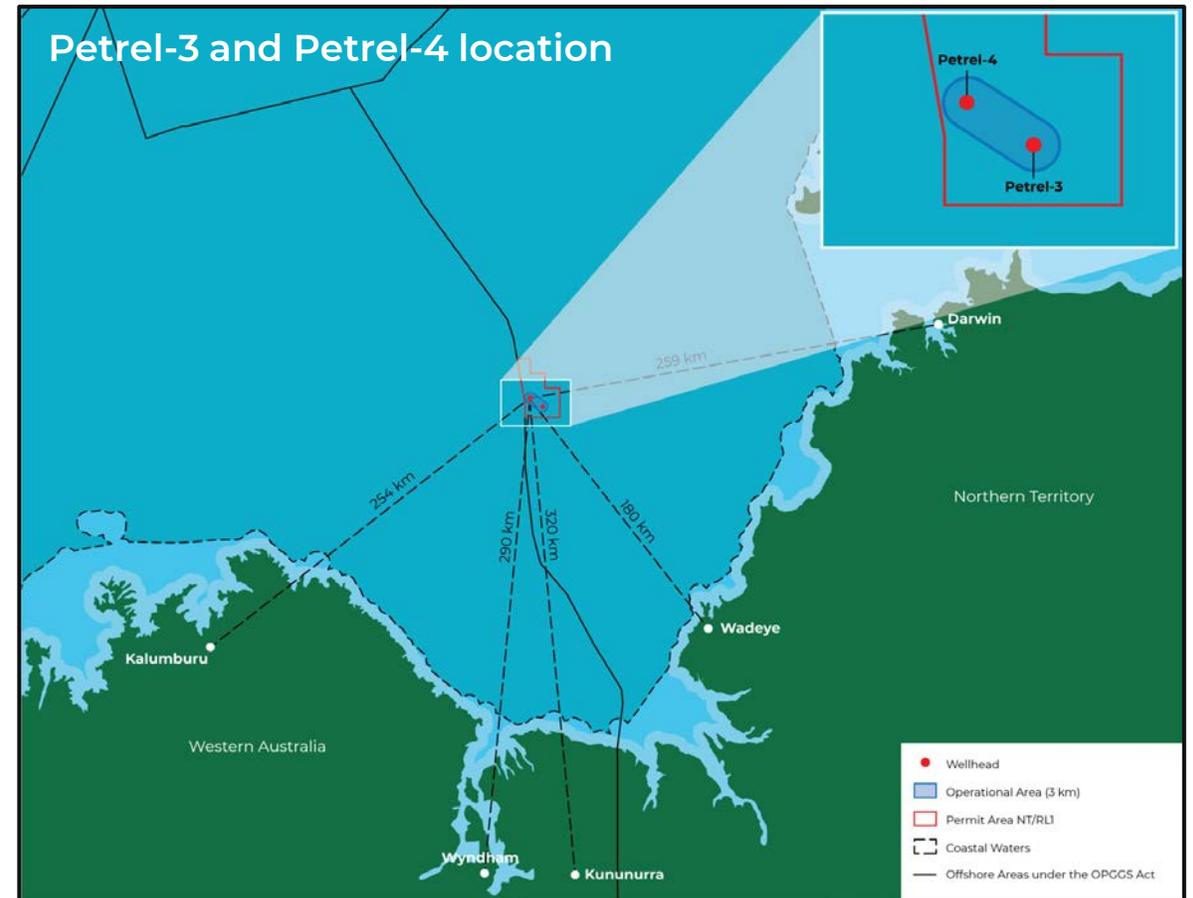
□ We work close by to you

- We want to be good neighbours
- We can learn from you
- We can tell you what we are doing
- It could be good for both of us

□ We're here to Talk about Petrel

Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

- We must talk to people linked to our activities
- We like to do it face-to-face so we can hear what you have to say
- We want to make sure what we do creates no problems for you



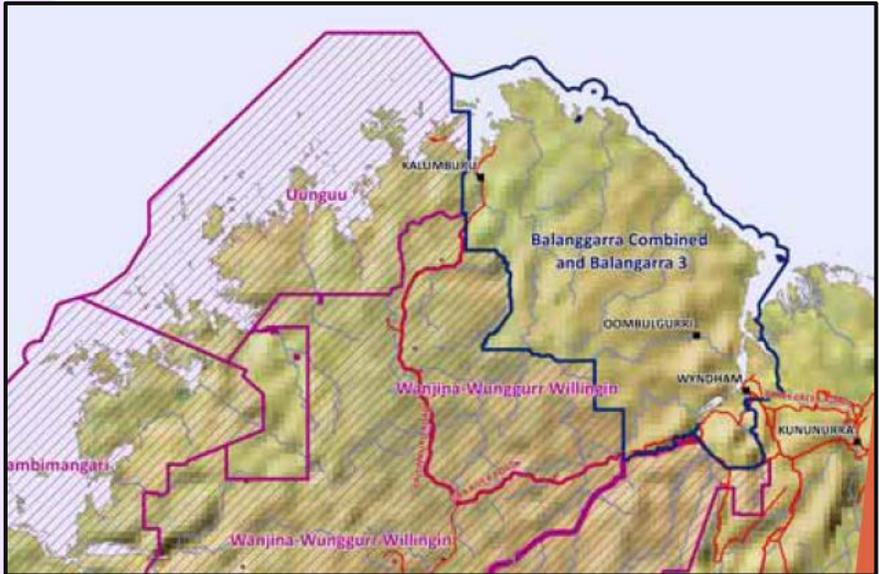
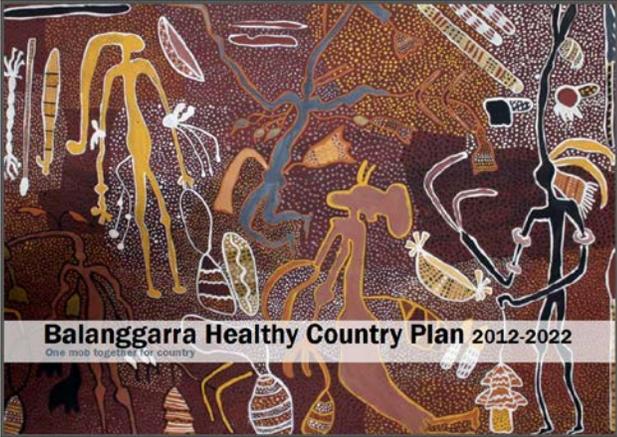
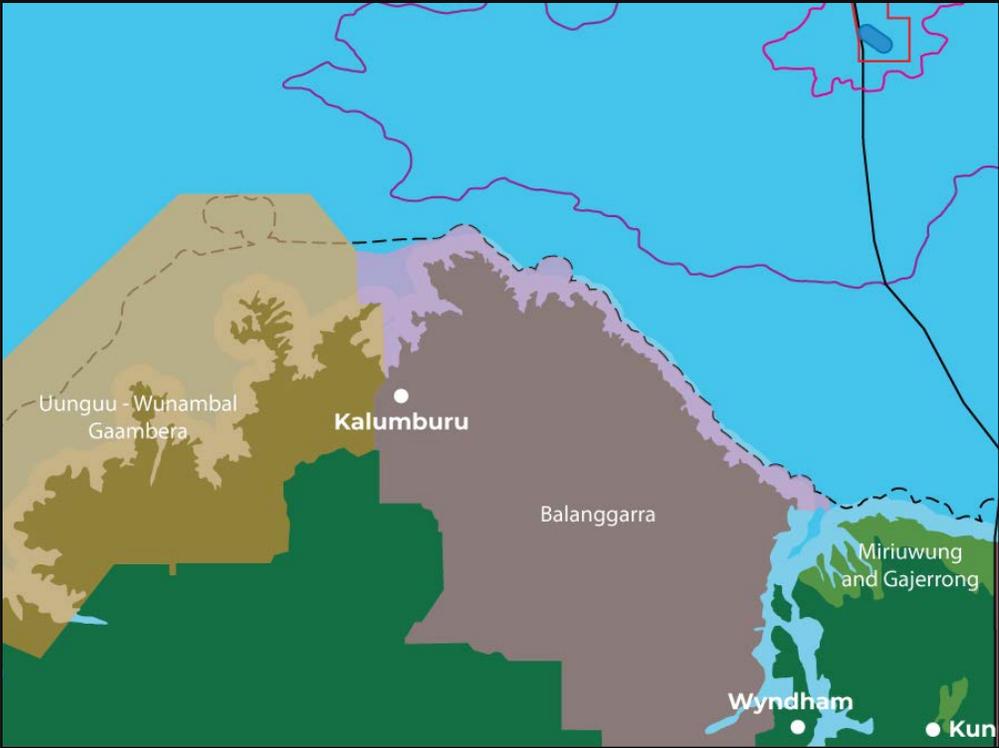
What is a relevant person?



An individual, organisation, department or agency that may have functions, interests or activities that overlap the area where the Petrel Operations may affect

- 25.1.a each Commonwealth, State or Northern Territory agency or authority to which the activities to be carried out under the Environment Plan may be relevant,
- 25.1.b if the plan relates to activities in the offshore area of a State - the Department of the responsible State Minister,
- 25.1.c if the plan relates to activities in the Principal Northern Territory offshore area - the Department of the responsible Northern Territory Minister,
- 25.1.d a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the Environmental Plan,
- 25.1.e any other person or organisation that the titleholder considers relevant.

Balanggarra People are Relevant Persons

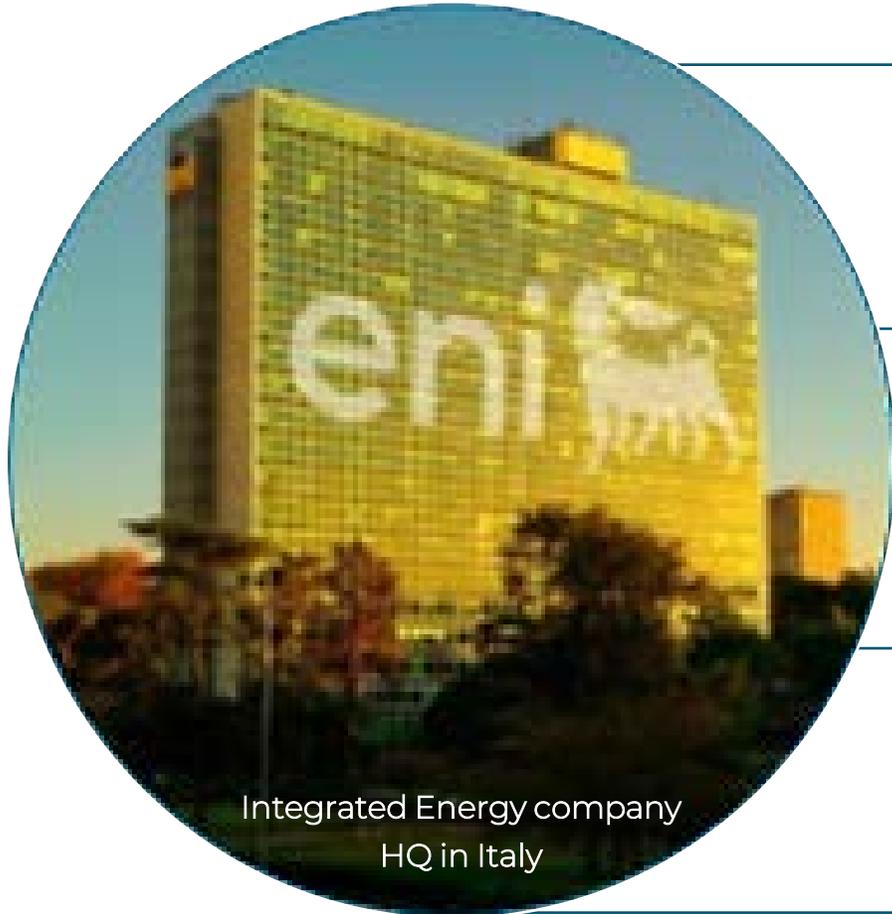




About Eni

Eni in Australia & Timor-Leste

Introducing Eni SpA



Integrated Energy company
HQ in Italy



Works in 61 countries
32K+ employees globally



101 employees in Australia & Timor-Leste



Eni believes in contributing to community
in places it operates

<https://www.eni.com/en-IT/sustainability/our-commitment.html>



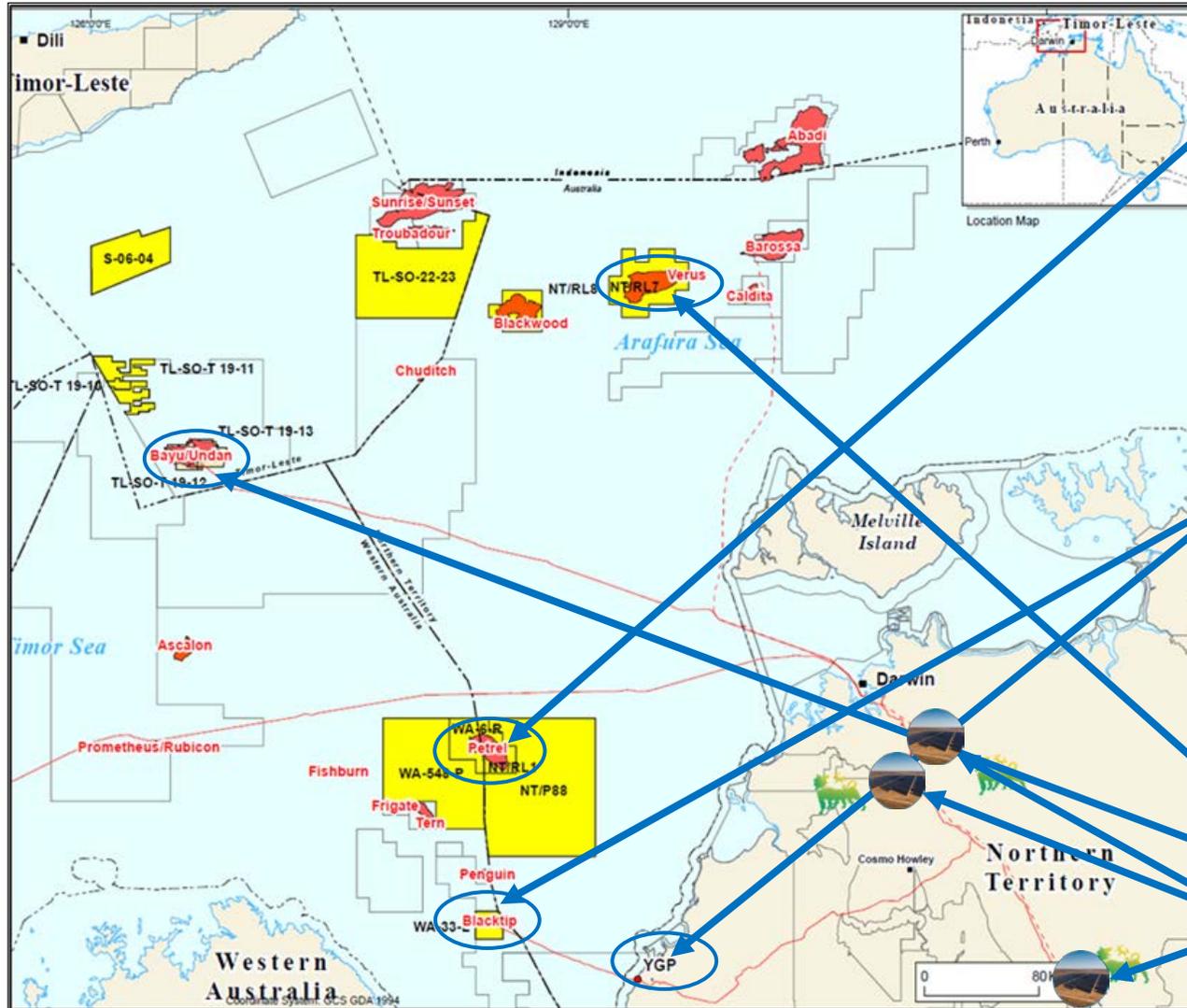
Offices:
Perth,
Darwin,
Yelcher Gas Plant (Wadeye)
Dili (Timor-Leste)



Where we Work

Australia and Timor-Leste

Eni in Australia and Timor Leste



Petrel Monitoring & Decommissioning

- Permit acquired by Eni Feb. 2024 - contains two subsea wells
- A need to decommission (plug and abandon) existing Petrel-3 and Petrel -4 subsea wells

Blacktip and YGP Gas Production

- Providing almost all the Territory's gas needs to generate electricity for homes, industry and business
- Providing 100% of gas supply to Wadeye for power generation (since 2021)
- New drilling activity to occur in Q4 2024

Other Projects

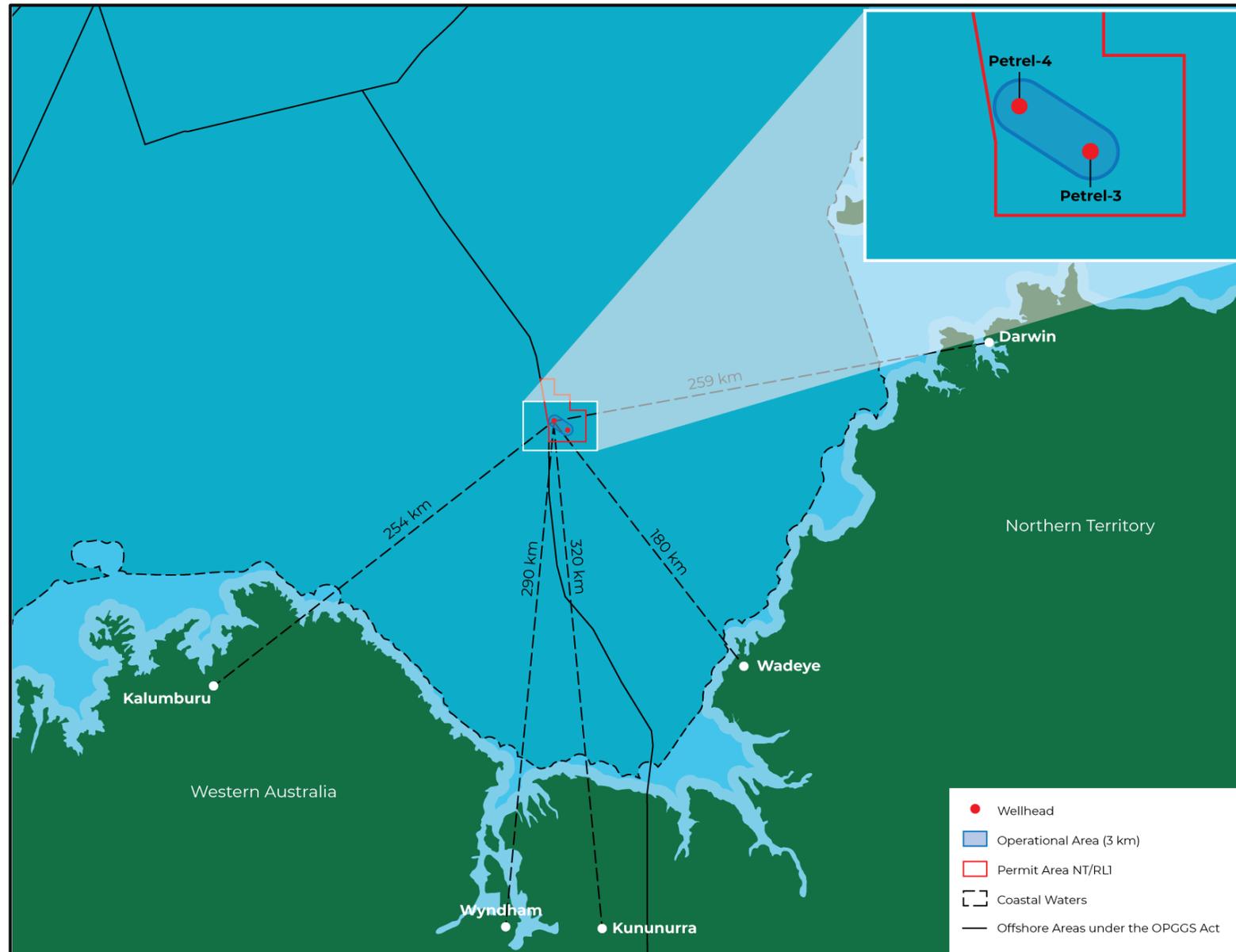
- Verus (Offshore)
- Bayu-Undan Gas Field and DLNG (11% Eni)
- Renewables – 3x Solar Plants with total capacity 59 Megawatts (Katherine, Batchelor, Manton Dam)



Petrel

Petrel-3 and Petrel-4 Monitoring and Decommissioning Activities

Petrel-3 and Petrel-4 location

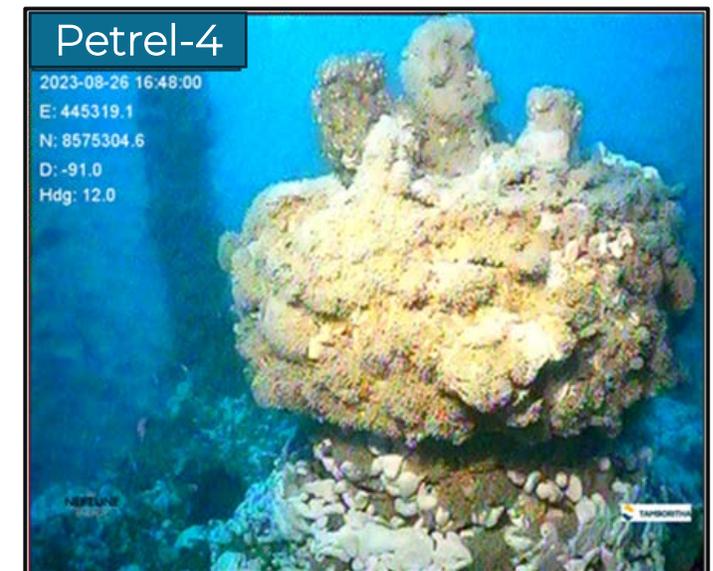
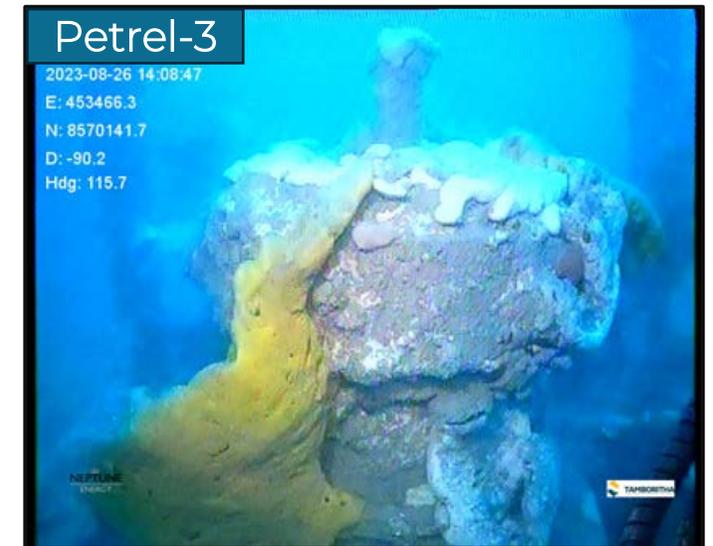


P3 and P4 Monitoring and Decommissioning Project



Summary of Project Activities

- 1) General Visual Inspection
- 2) Geotechnical and Geophysical Surveys
- 3) Pre-abandonment Vessel Campaign
- 4) Decommissioning of Petrel-3 and Petrel-4 (P&A)
- 5) Post Decommissioning 'as-left' Survey

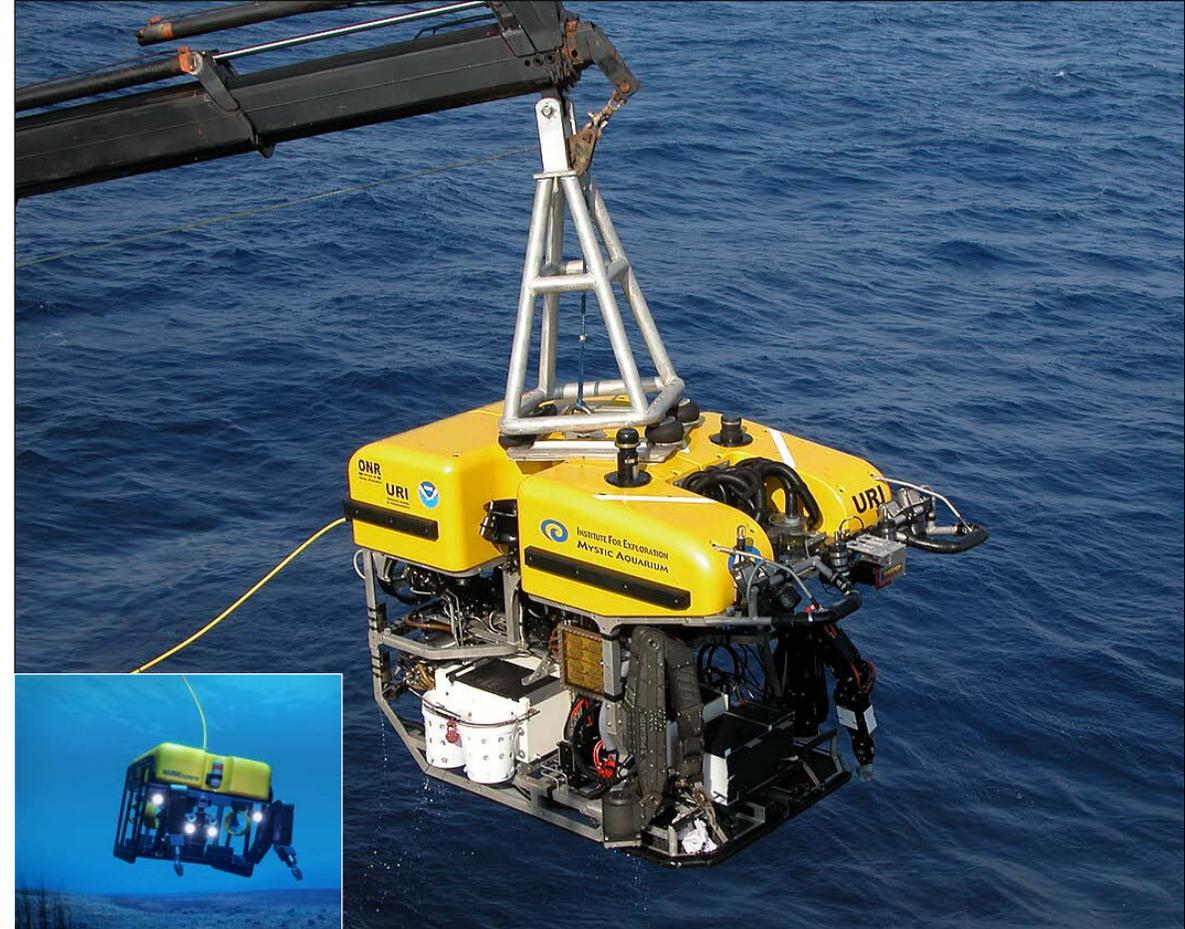


General Visual Inspection



Preparation for decommissioning requires a visual inspection of subsea wells

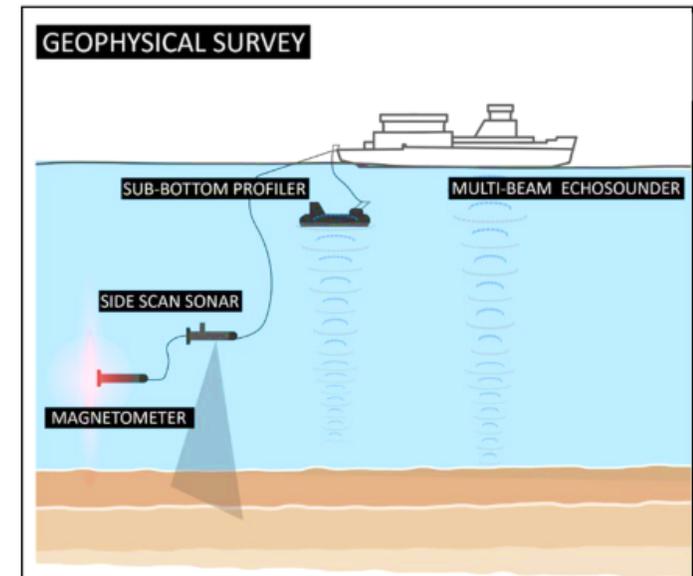
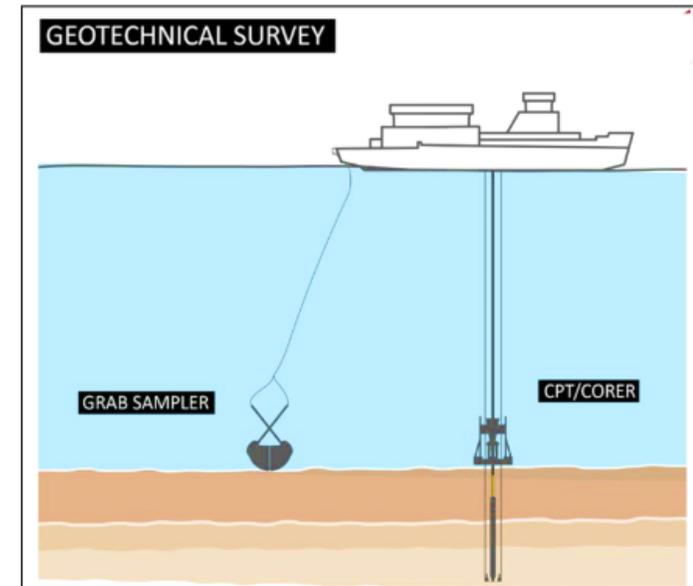
- ❑ Anticipated to be conducted Q4 2024 (then annually)
- ❑ Final timing subject to vessel/rig availability and weather
- ❑ Inspection surveys performed using Remote Operated Vehicles (ROV) that are deployed from contracted vessels
- ❑ Marine growth removal may be done to adequately assess condition of wellheads (high-pressure hose in-situ saltwater)
- ❑ Potential removal and replacement of the corrosion cap (with 3D camera/laser scanning)
- ❑ May also include the geophysical and geotechnical surveys



Geotechnical and Geophysical Surveys

... to assess below the seabed

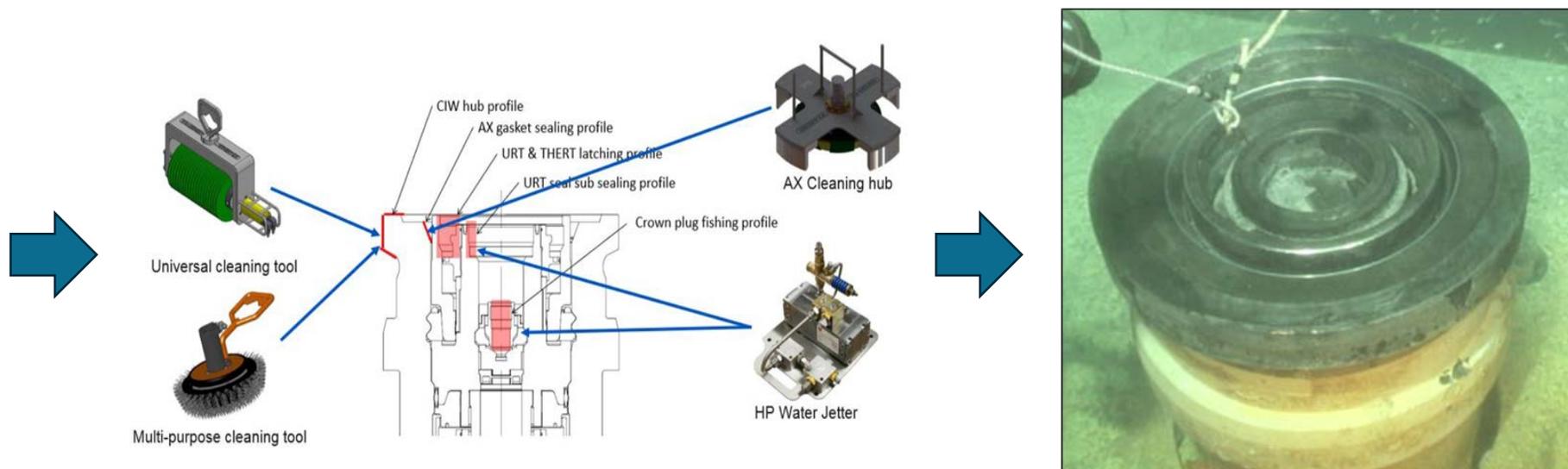
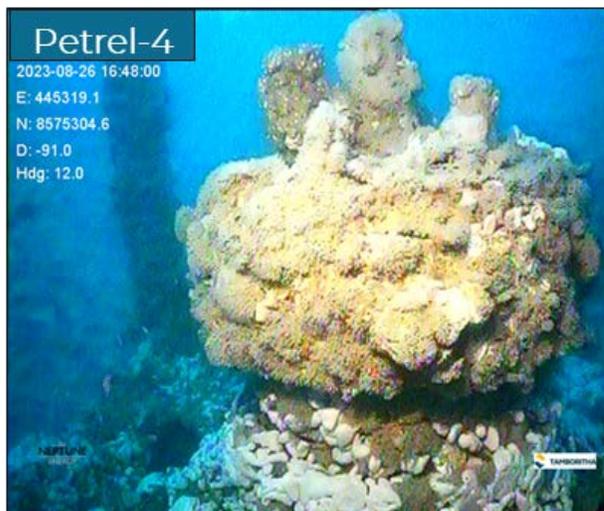
- ❑ Undertaken so that we can understand the seafloor surface,
 - to identify features and hazards
 - to allow for seabed stability testing
 - to best position the mobile offshore drilling unit (MODU)
- ❑ Approximately 60 days to complete surveys for both wells
 - geophysical survey 20 days / well
 - geotechnical survey 10 days / well
- ❑ Various acoustic and magnetic techniques may be used (e.g. side-scan sonar, multi-beam echo sounder)
- ❑ This is not the same as 3D seismic surveys
- ❑ Core hole sampling (2.4m² per well) also completed to inform engineering designs





Pre-Abandonment Campaign

- Only if required
(if we do a full visual, cleaning and inspection survey then already done)
- Removal of corrosion caps
(marine growth removal first - mechanical / chemical cleaning (brushes/scraper)
- A small volume of seawater and biocide may be released when removing the corrosion cap
(less than 1m³ - trapped under the cap)
- 3D external scan of the wellheads by a camera or laser
- Scanning will be two hours duration per well

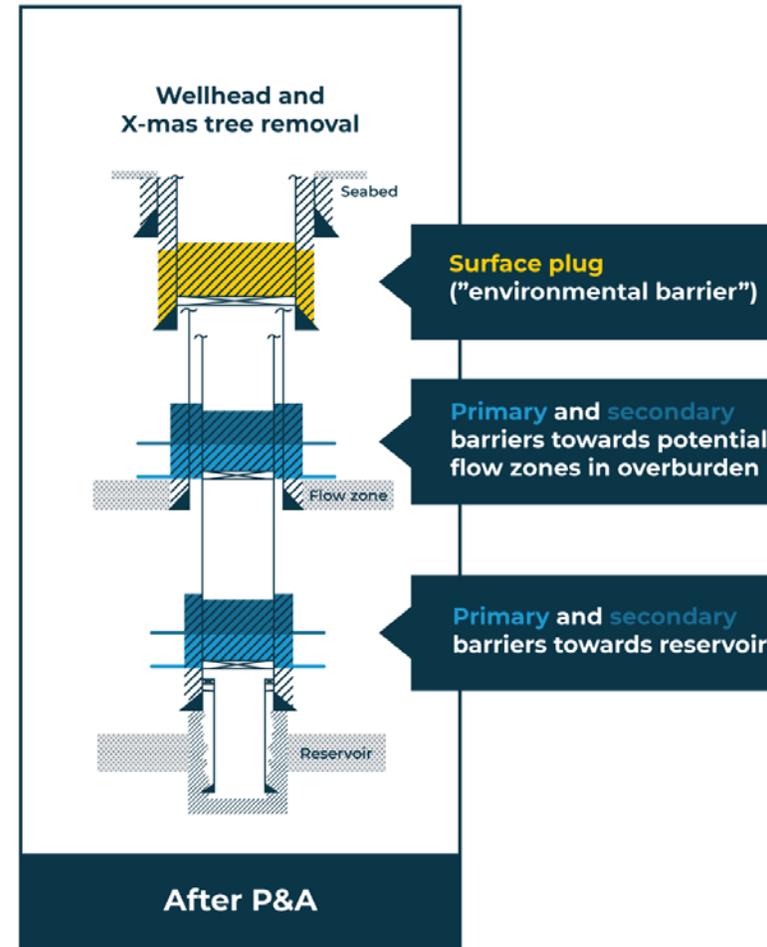


Decommissioning - Plug and Abandonment (P&A)

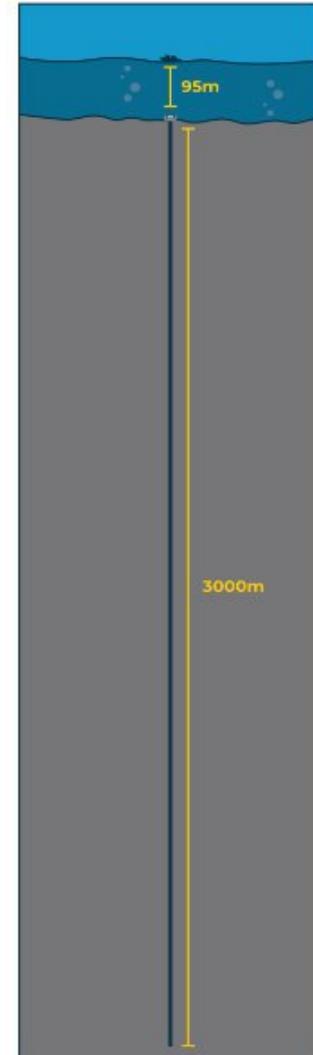


Permanent isolation of the reservoir and removal of infrastructure

- ❑ Wells previously suspended in 1980s
- ❑ Single campaign with contingency for second campaign if required
- ❑ Rig configuration to be determined – based on feasibility, availability and weather
- ❑ Reservoir will not flow unaided, loss of well control is not considered possible
- ❑ A small volume of trapped gas (1m^3) and small volumes of cement and/or milling fluids may be released during P&A
- ❑ Infrastructure removal options under consideration in consultation with Regulator



Example only

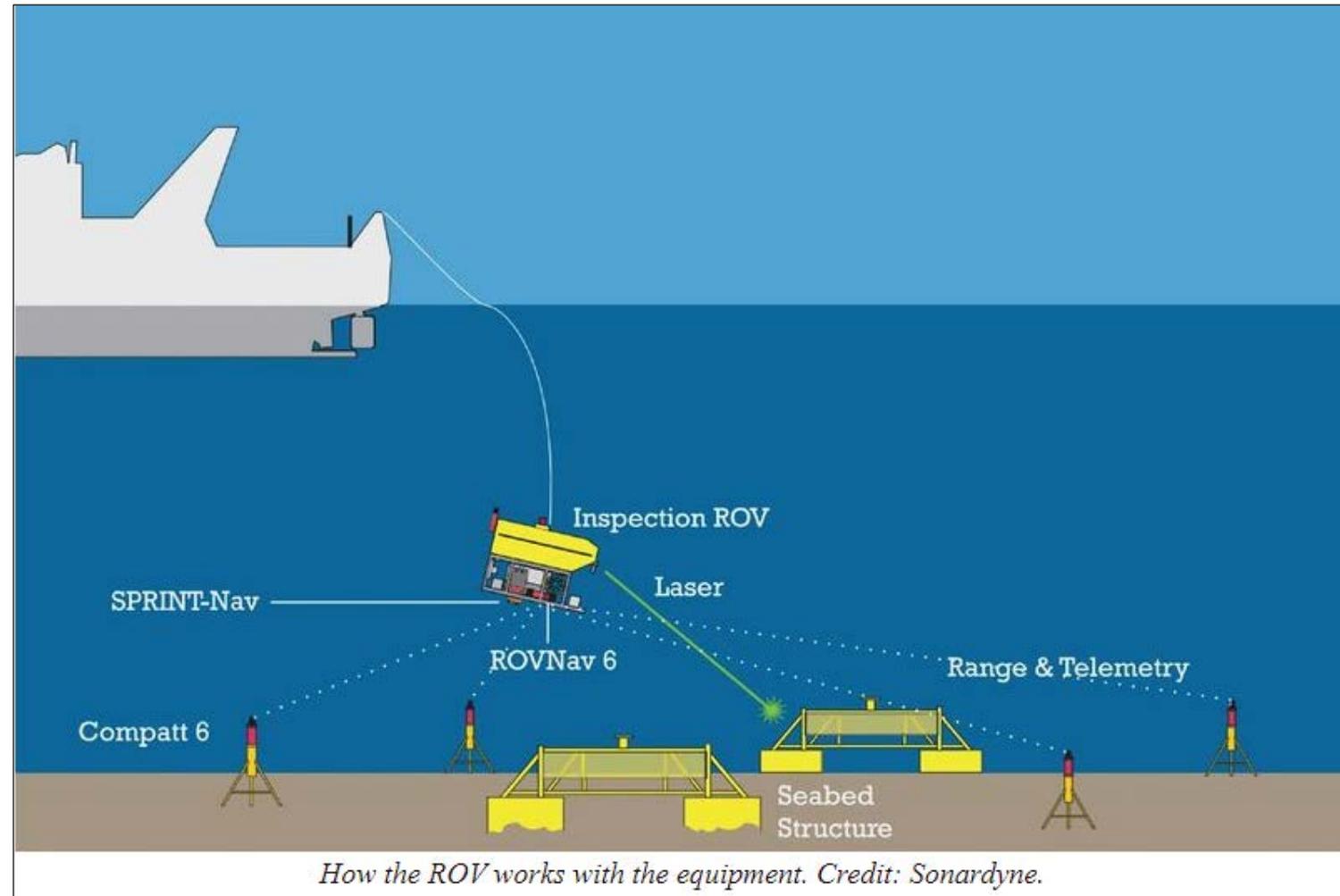


As Left Survey

Final inspection after completed works



- ❑ Visual inspection of seabed where MODU was located using an ROV
- ❑ Documentation of seabed state after the P&A campaign
- ❑ Survey occurs before MODU leaves the field



Operator Requirements



Potential Environmental Impact & Mitigation Measure

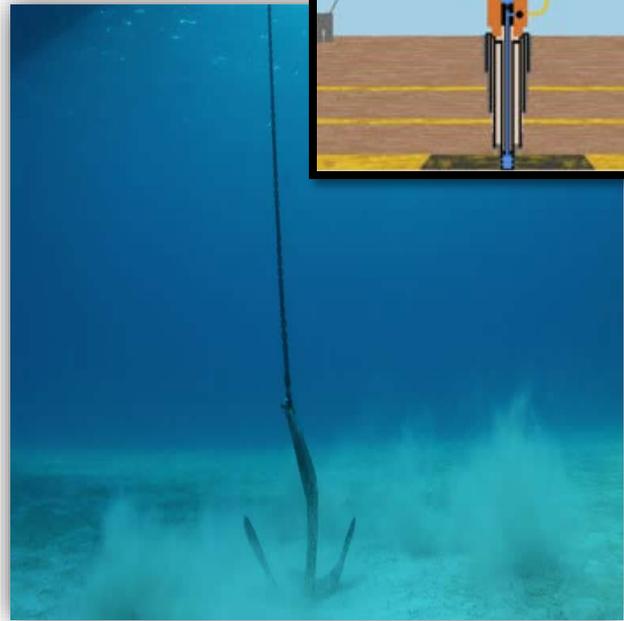
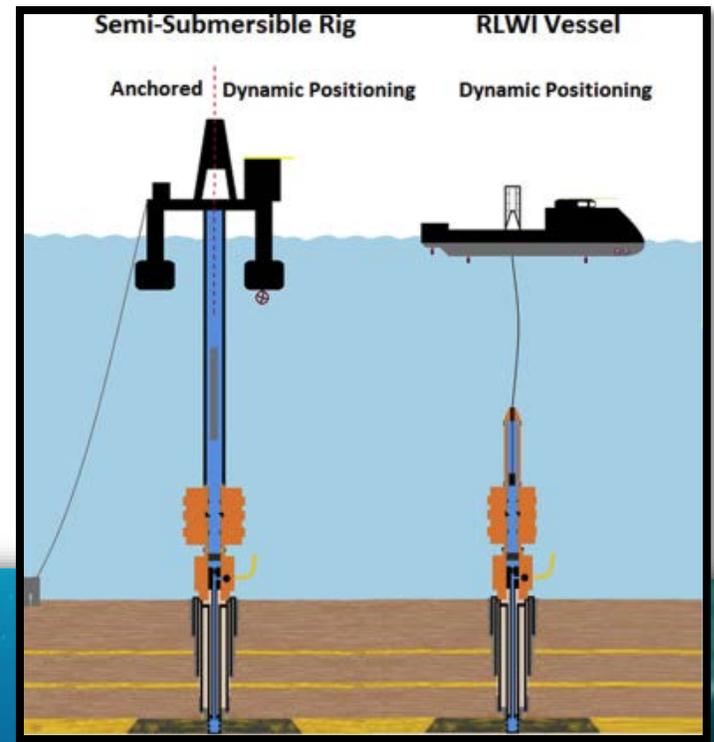
Planned Impacts



Planned Event
Seabed disturbance
Physical interaction
Equipment in-situ
Atmospheric emissions and greenhouse gas
Noise emissions Continuous
Noise emissions Impulsive
Light emissions
Planned discharges Routine
Planned discharges Decommissioning

- No waste incinerator
- Bulk transfer to avoid frequent accidental spillage
- Regular machinery maintenance
- Navigation equipment and procedures
- Maritime notices and notifications as requested

- Implement controls to reduce interactions with marine fauna.
- Lighting for safety & navigation work
- All routine marine discharges managed according to legislative requirements



Potential Environmental Impact & Mitigation Measure



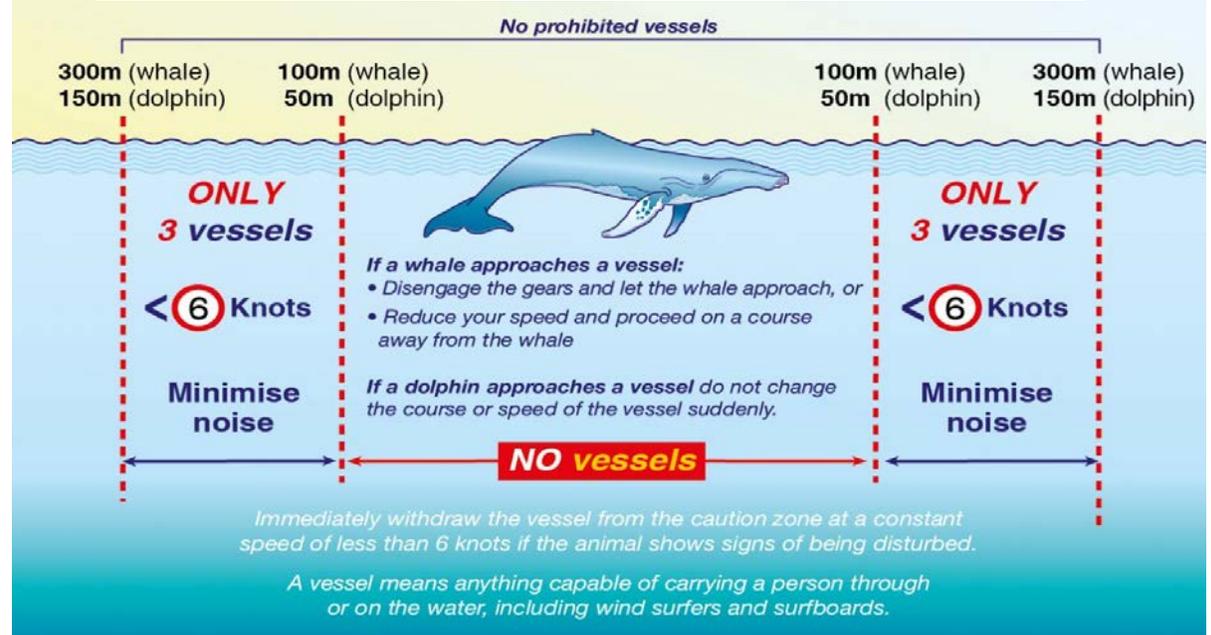
Unplanned Impacts

- Unplanned Event
- Interaction with other marine users – equipment in-situ
- Marine fauna interaction
- Introduction of marine pests
- Accidental release – waste and solid objects
- Accidental release – minor loss of containment
- Accidental release – MDO (vessel collision)

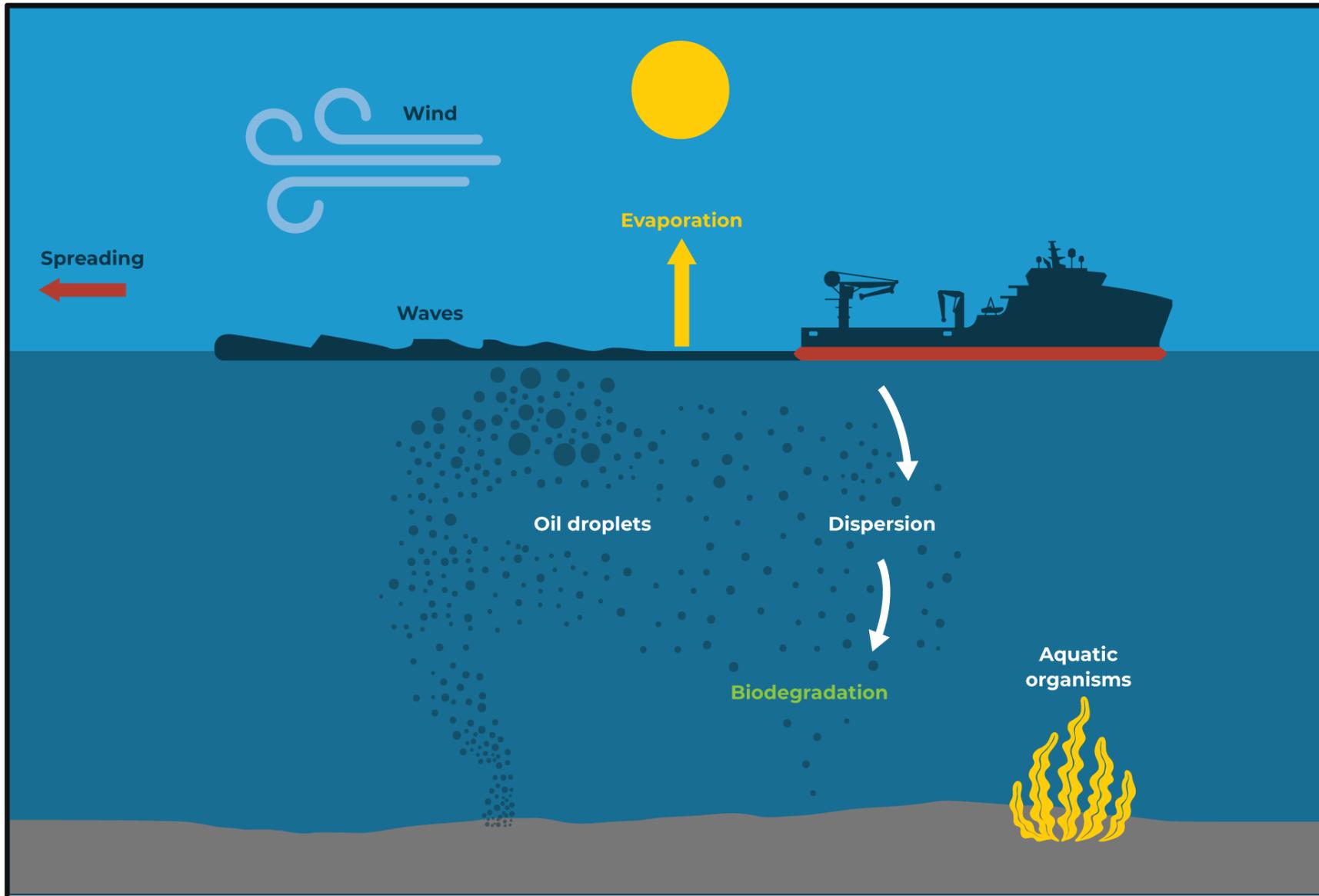
Wellheads are charted on AHO nautical charts so that marine users are aware of their location

Observations of the surroundings will be undertaken from the vessel/s for marine fauna

All vessels will be assessed and managed as appropriate to prevent the introduction of marine pests.



Accidental Release - Oil Spill Modelling



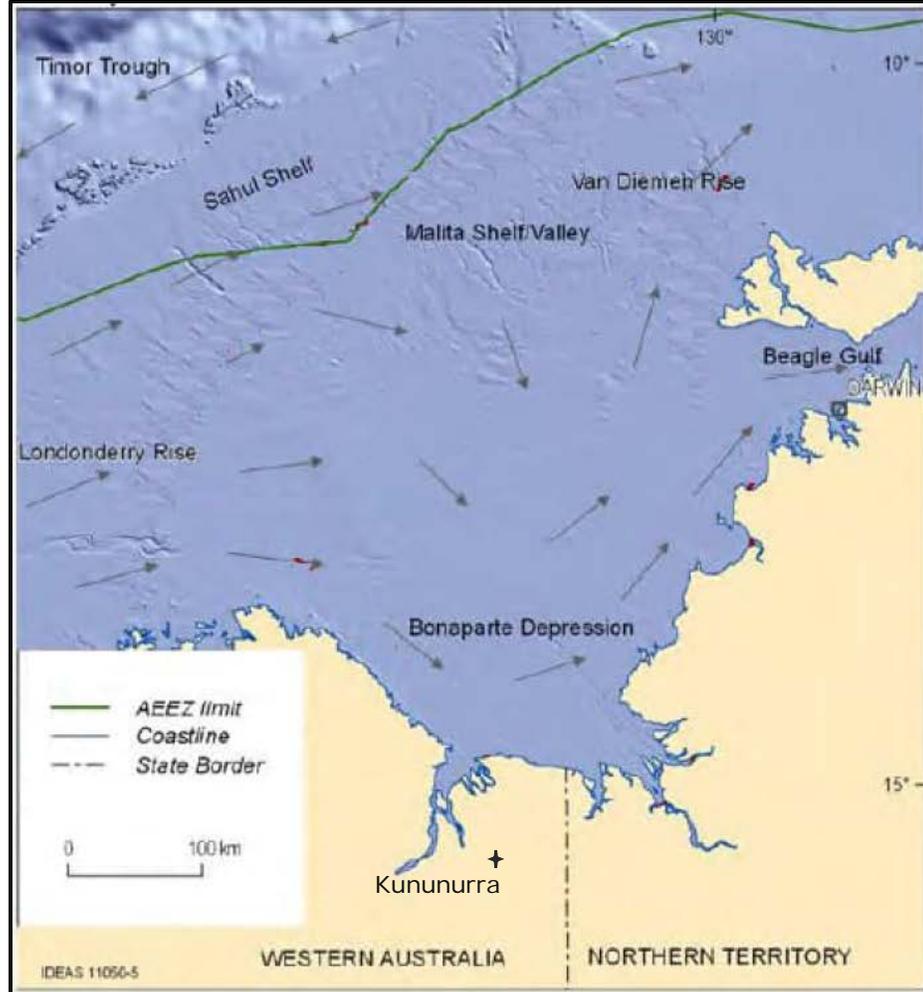
Other oil spill modelling considerations:

- Degradation
- Emulsification
- Sedimentation
- Dissolution
- Photo-oxidation

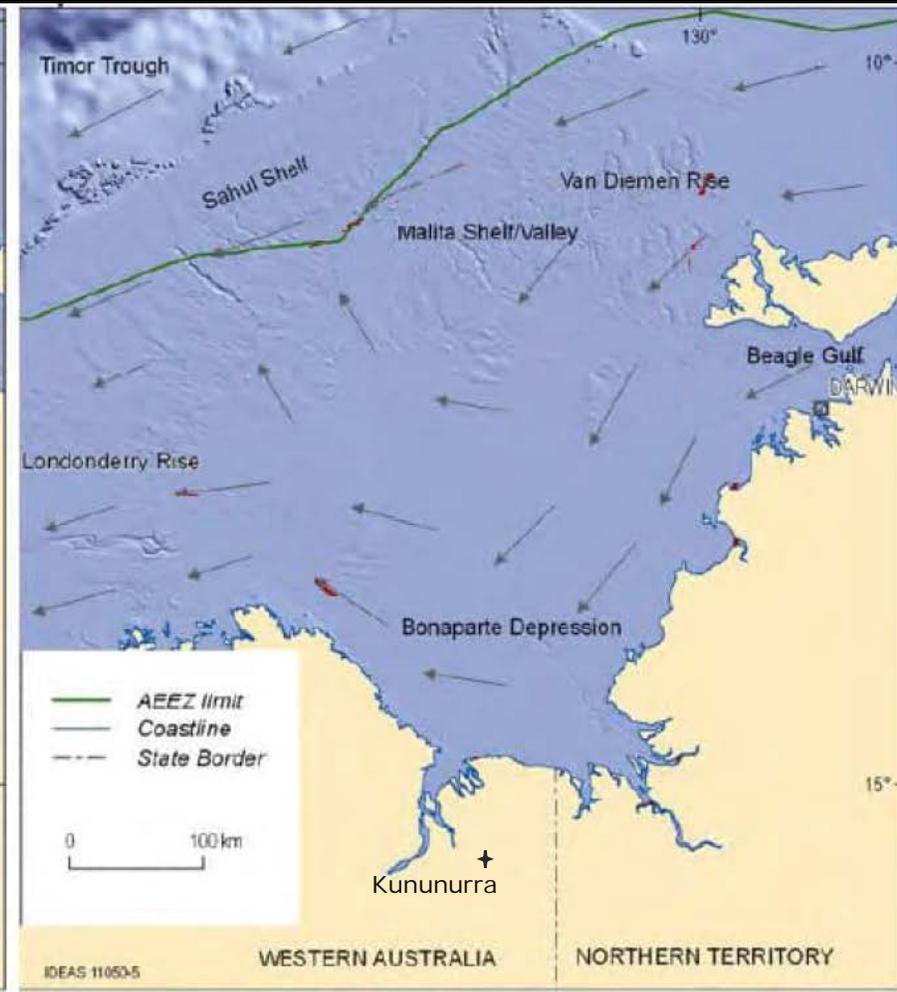
Petrel – Oceanography wind driven currents



January



July



Wind Currents

Summer – main direction towards south-east driven by monsoon winds

Winter - main direction towards north-west driven by trade winds

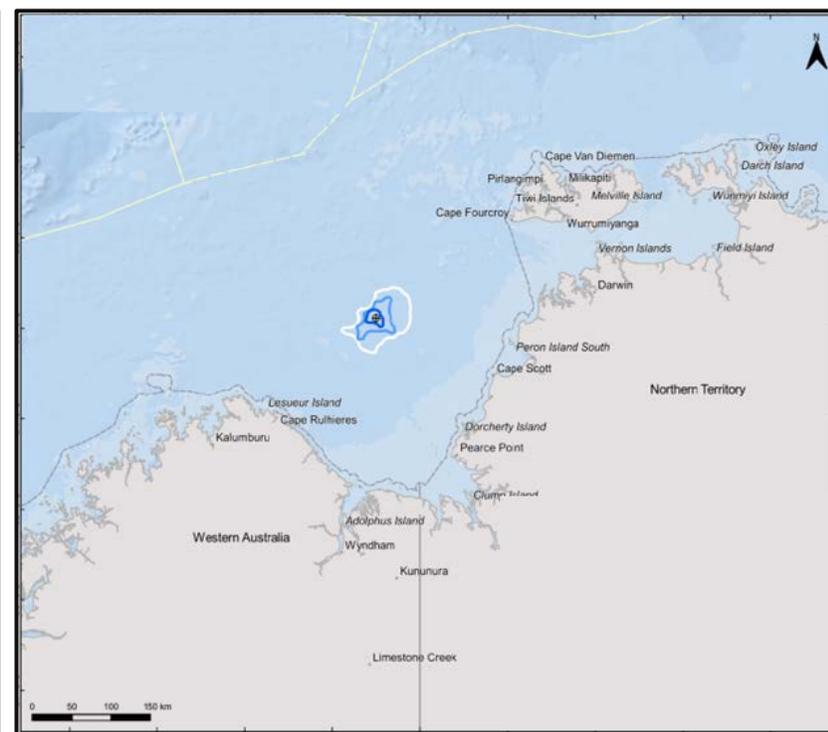
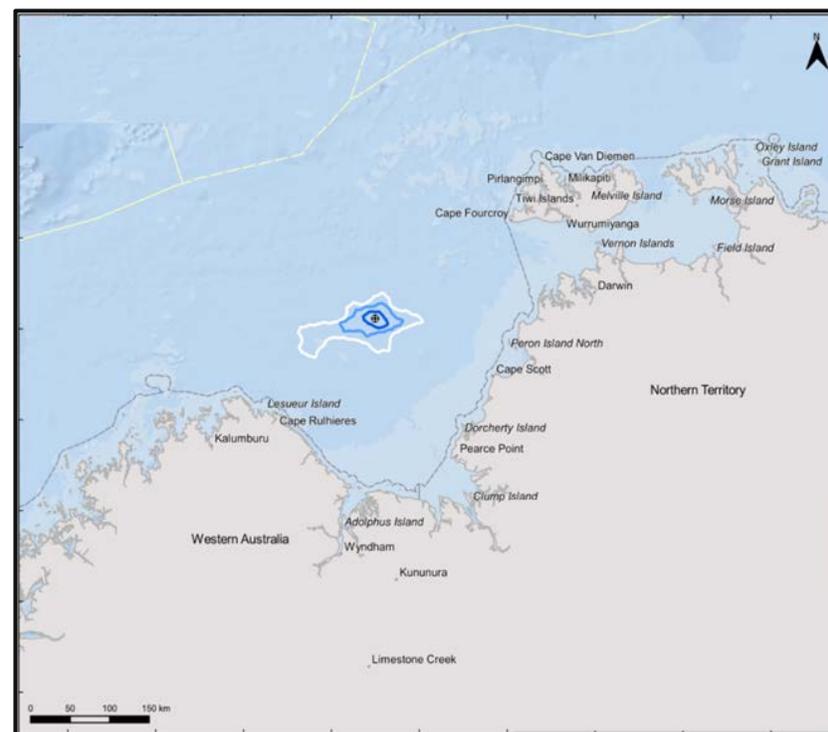
Nearshore currents become more longshore. Westerly in winter and easterly direction in summer

Very nearshore currents heavily influenced by local topography. Local clockwise and anti-clockwise on ebb and flood

Seasonal potential floating oil exposure



Zones of potential floating oil exposure from a surface vessel spill during summer and winter conditions

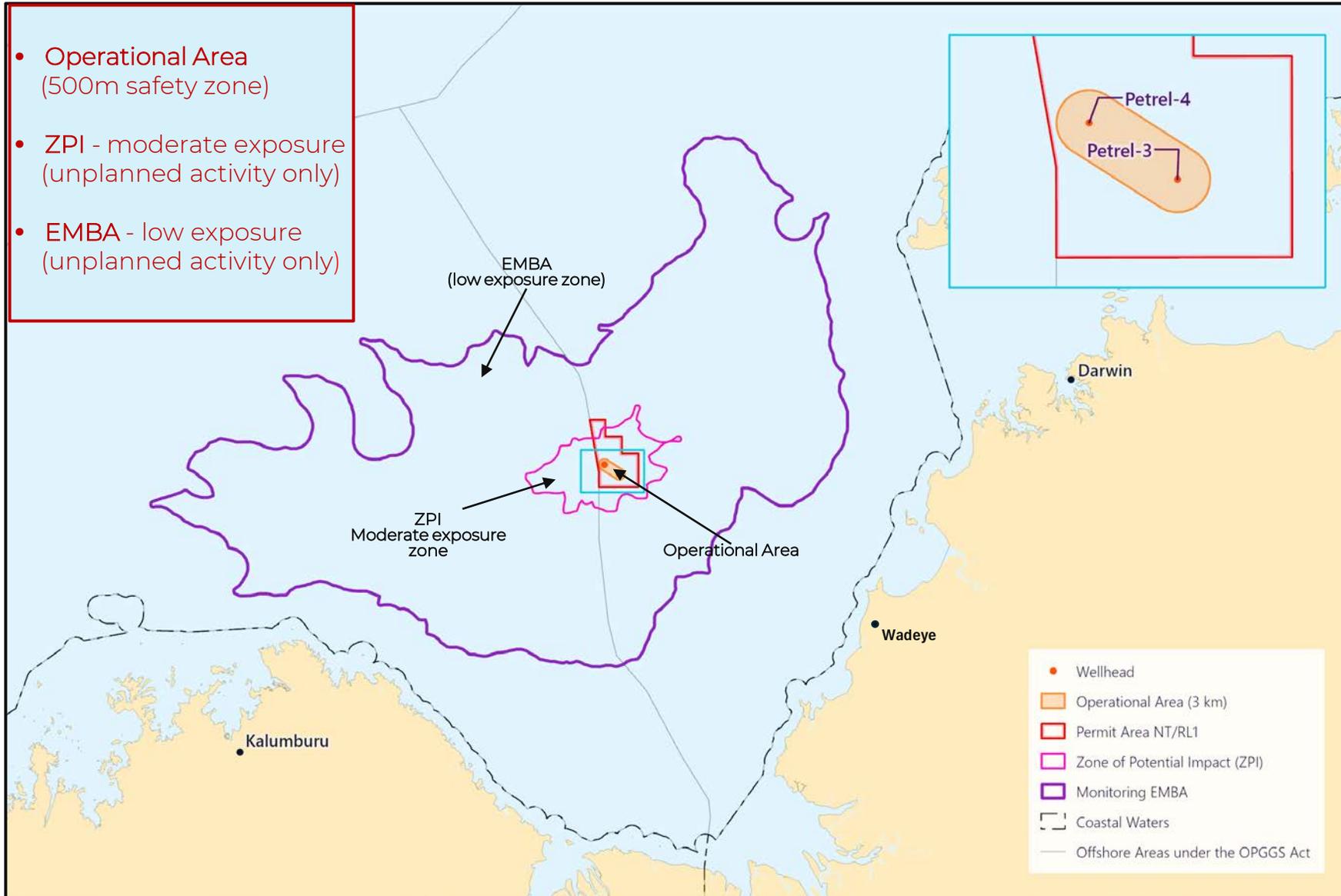


Summer Potential Floating Exposure Scenario of 300m³ surface release of MDO 100 spill simulations

Transitional Potential Floating Exposure Scenario of 300m³ surface release of MDO 100 spill simulations

Winter Potential Floating Exposure Scenario of 300m³ surface release of MDO 100 spill simulations

Activity EMBA - Marine Diesel Oil



- Operational Area (500m safety zone)
- ZPI - moderate exposure (unplanned activity only)
- EMBA - low exposure (unplanned activity only)

Probability

- The likelihood of a vessel collision is considered rare

Control measures

- Navigation equipment and procedures
- Vessel emergency management plan
- Refueling transfer procedures
- Oil Pollution Emergency Plan
- Oil Spill Management Plan

Floating oil exposure

- 1g /m³ (low)
- 10g /m³ (moderate)
- 50g /m³ (high)

Evaporation / decay rate

- 36.1% evaporation (constant wind)
- MDO decays at a higher rate of 3% per day

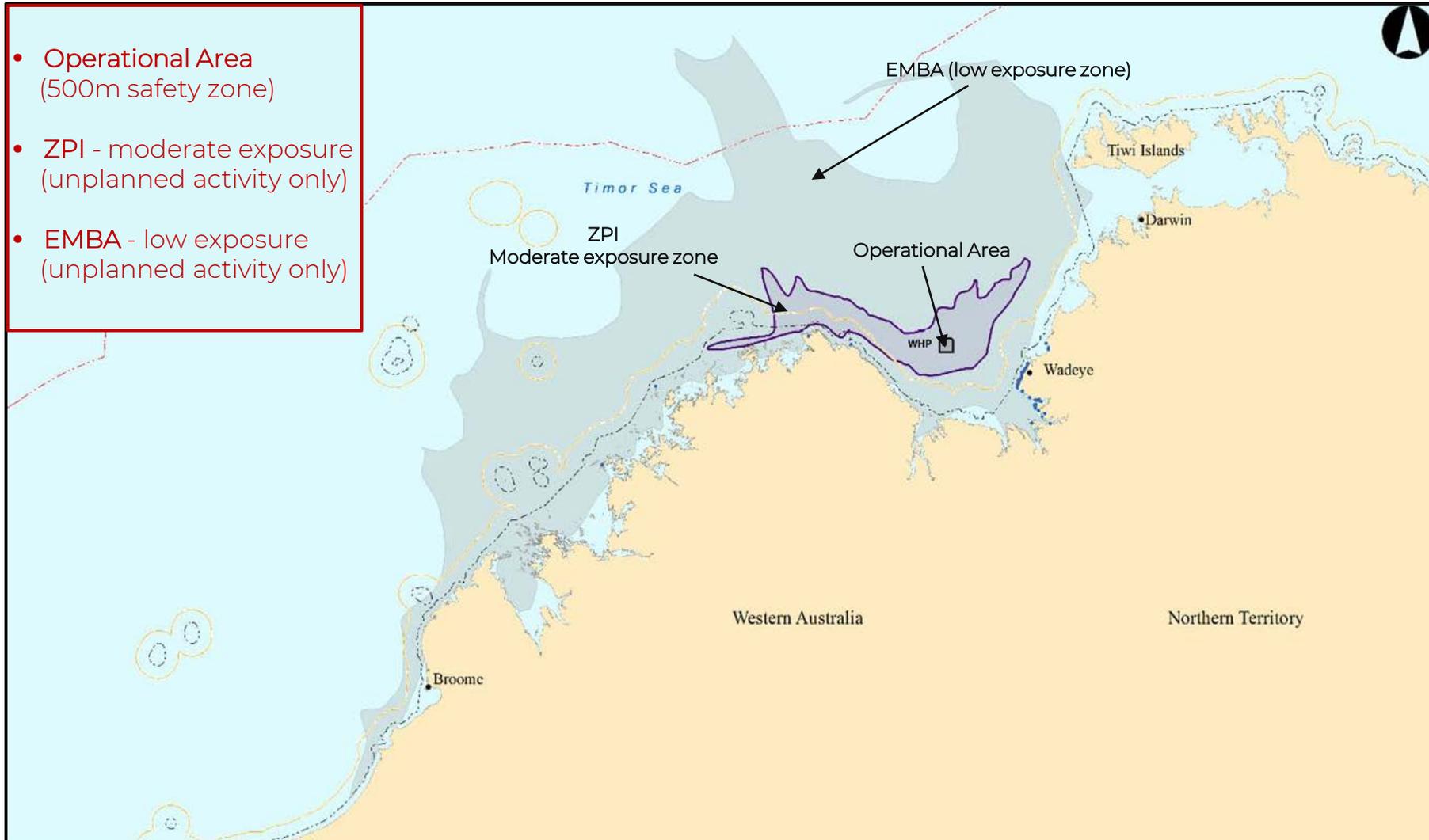
Ecological impact onshore

- No shoreline contact.

Traditional Owners



EMBA from previous Blacktip Drilling EP consultation



- Operational Area (500m safety zone)
- ZPI - moderate exposure (unplanned activity only)
- EMBA - low exposure (unplanned activity only)

- Preventative controls
- Unplanned event only if BOP fails
- ERP Activation
- High evaporation rate



Our Community Work Globally

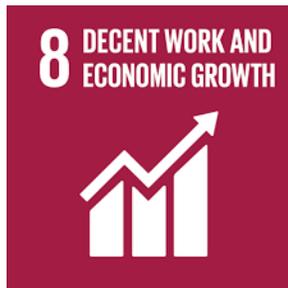
Community Development - Sustainable Development Goals

Eni's Mission



Global Goals For Sustainable Development

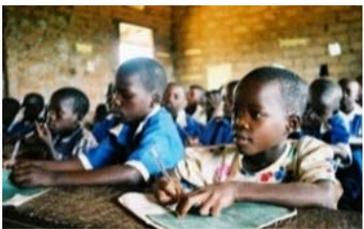
The 2030 Agenda for Sustainable Development presented in September 2015, identifies 17 Sustainable Development Goals (SDGs) which represent the common targets of sustainable development on the current complex social problems. These goals are an important reference for the international community and Eni in managing activities in those countries in which it operates.



Global Community Programs



6 SECTORS OF INTERVENTION

ACCESS TO ENERGY	LIFE ON LAND	ECONOMIC DIVERSIFICATION & GOOD FARMING	ACCESS TO WATER & SANITATION	EDUCATION & VOCATIONAL TRAINING	HEALTH
					

Promoting the Respect of Human Rights and Transparency along the business lifecycle



Supporting National Development Plans also through Public Private Partnerships

Adopting International Organizations' standards, methodologies and tools





Our Community Work On Country

Local Community Development - Thamarrur Country

(Obtained permission to use pictures)

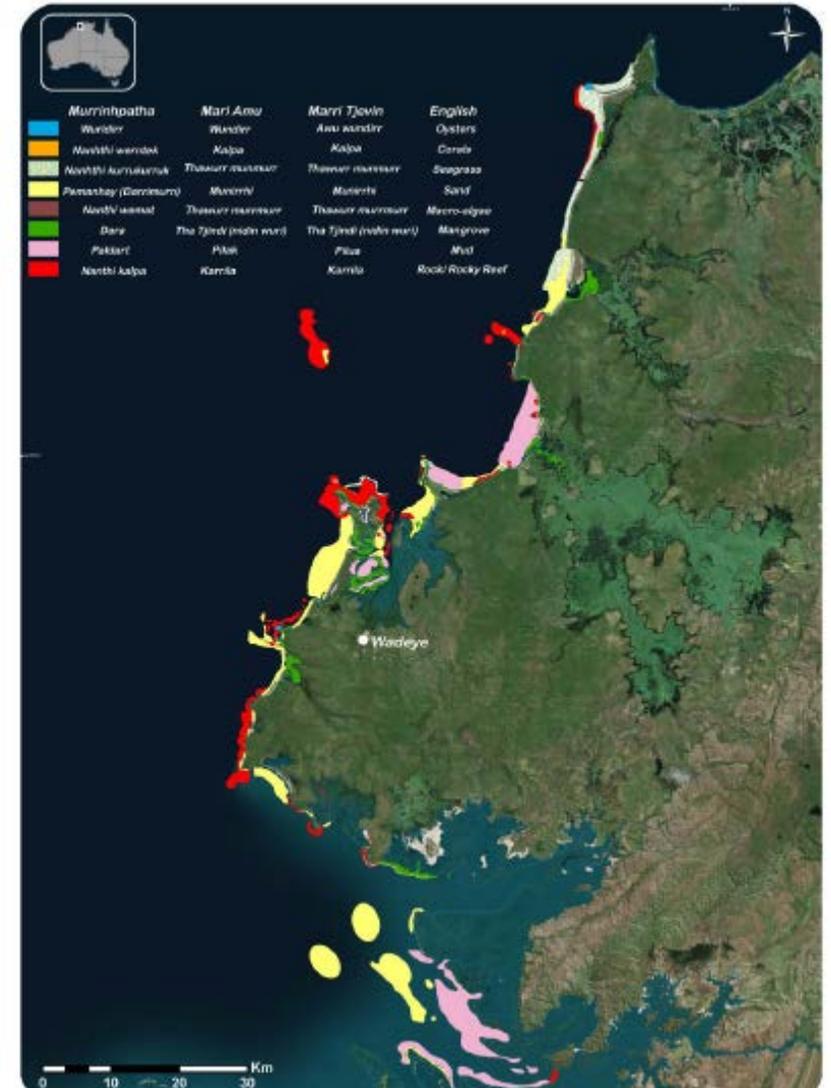
Eni's Local Contribution



Participatory Mapping with TOs & Rangers



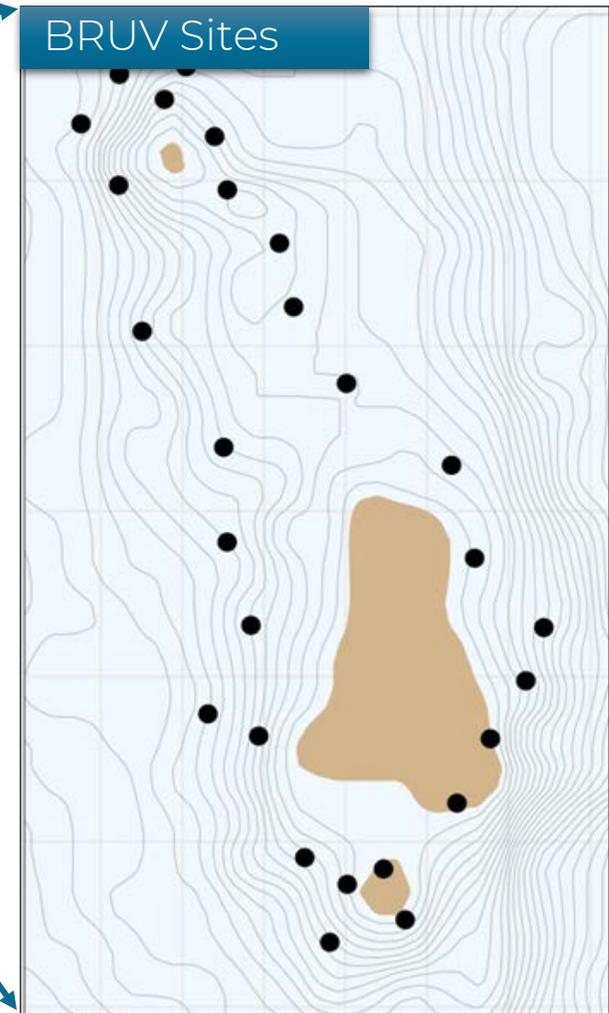
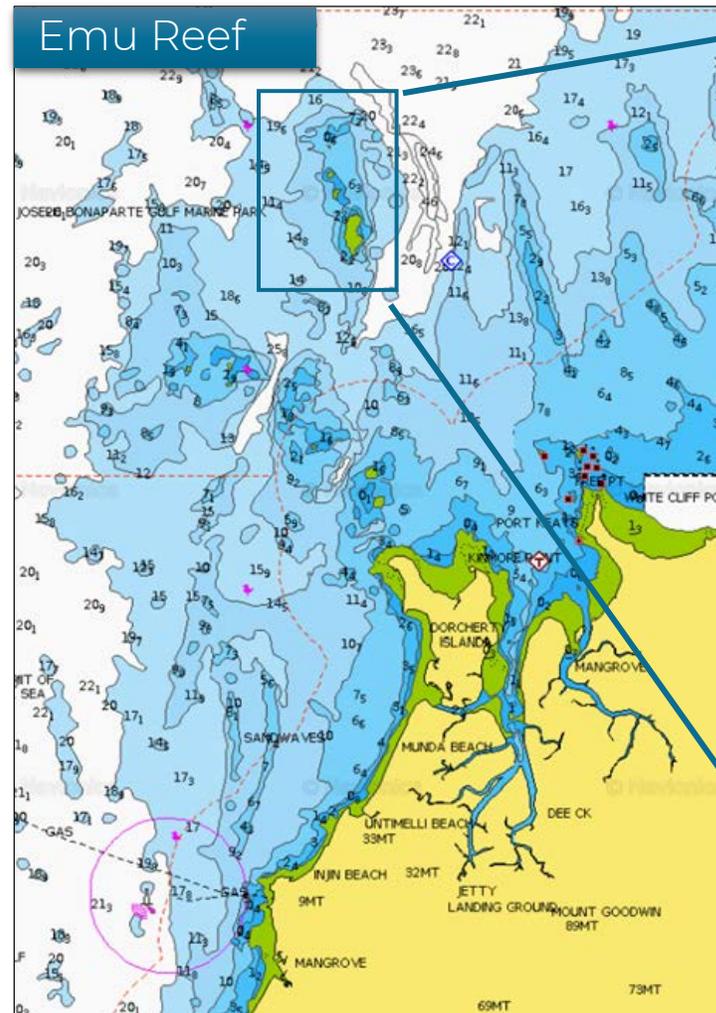
Thamarrurr Sea Country Habitat Map



Eni's Local Contribution



Baited Remote Underwater Video Training & data collection



Eni's Local Contribution



Shellfish & Sediment Monitoring with Rangers



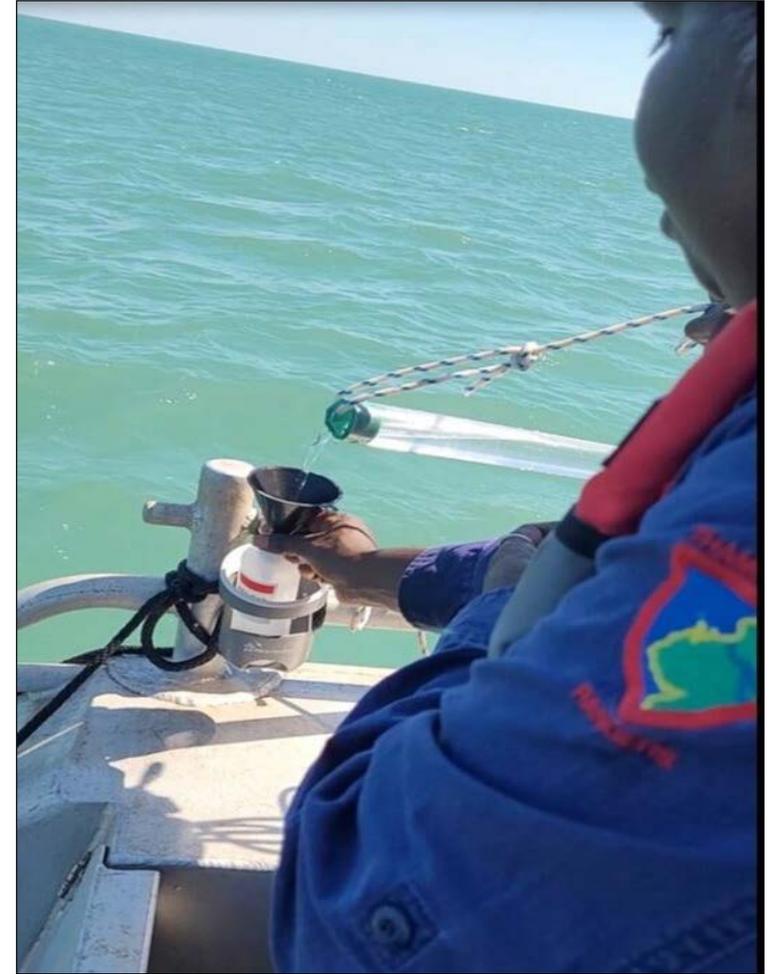
SPM Monitoring by Rangers



Eni's Local Contribution



Water Sampling Training with AIMS





Where To From Here

Consultation

Where to From Here . .



- ❑ Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan consultation commenced on 19 June 2024 and, at this stage, will be continuing until end August 2024
- ❑ If you would like to seek more information, get further clarification, or request another meeting, please contact us through info@petreleni.com.au; phone us on 1300 155 616; or visit our website at petreleni.com.au.
- ❑ The Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan is expected to be submitted to NOPSEMA by the end of August 2024
- ❑ Any other Questions?

Where to From Here ..



- ❑ You can contact us about this any time, but would be good to hear any information before September 15
- ❑ (We are submitting the EP by end of September)
- ❑ Talk to Bevan, Madeline of Darryl and they can get your message to us.
- ❑ Call us on 1300 155 616 or email us at info@petreleni.com.au
- ❑ Any other Questions?



Thank you

Decommissioning - Plug and Abandonment (P&A)

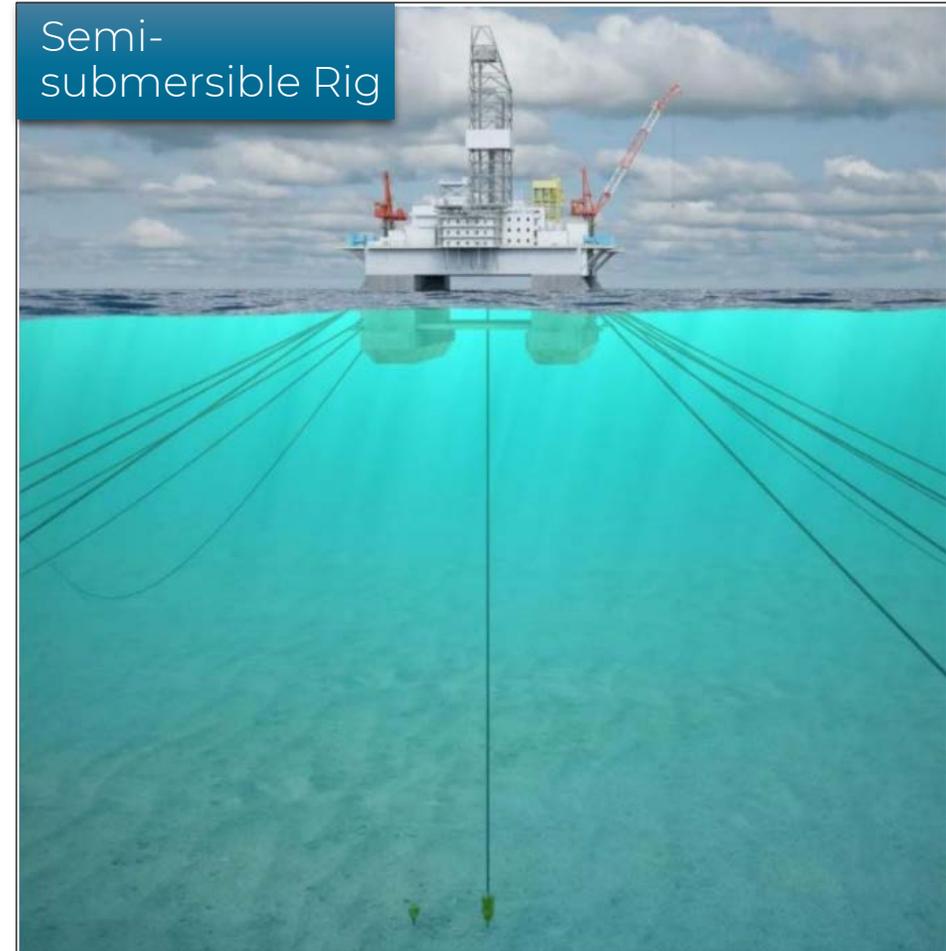


Rig examples

Jack Up Rig



Semi-submersible Rig



Potential Environmental Impact & Mitigation Measure



Planned Impact - Seabed disturbance

Seabed disturbance will be caused by:

- seabed sampling during the geotechnical survey.
- positioning of the mobile offshore drilling unit (MODU), if a moored or jack-up MODU is used.
- removal of marine growth on the wellhead. • installation of temporary winches on the seabed.
- cutting of the wellhead
- retrieval of the wellhead and guide base/s from the seabed.

Potential Impact

- Seabed disturbance will cause a localised and temporary reduction in water quality, and disturbance to benthic habitat.
- The maximum seabed disturbance footprint is from MODU positioning, if a moored MODU is used.
- In this case, up to 12 anchors and mooring lines will be laid, giving a maximum footprint of 1,944 m² per well.
- There is no sensitive benthic habitat, Marine Parks or Key Ecological Features (KEFs) in the operational area.

Proposed Management/Mitigation

- Use low sulfur fuel on the vessels and MODU, in accordance with legislative requirements (e.g. Marine Orders).
- Bulk solids transferred in accordance with bulk transfer procedures to reduce the risk of an unintentional release to sea and air.
- No waste incineration onboard.
- Ozone-depleting substances (ODS) managed in accordance with MARPOL.
- Compliance with regulatory requirements for marine air pollution and GHG missions reporting.
- MODU and vessel Planned Maintenance System (PMS) in place to maintain DP, engines and machinery.

Potential Environmental Impact & Mitigation Measure



Planned Impact - Physical interaction

The physical presence of the MODU and movement of vessels within the operational area can interfere with other marine users by causing displacement from the area during activities.

Potential Impact

The operational area is a 3 km radius around the two wells and the corridor between them. There is no formal Petroleum Safety Zone; however, exclusion and cautionary zones will be in place during activities.

Activities in the operational area are of short duration, expected to last between 2 to 60 days.

Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area.

There are no tourism or recreational fishing activities expected in the operational area due to distance from shore, and no Maritime Defence Exercise areas.

Proposed Management/Mitigation

- Navigation equipment and procedures, in accordance with legislative requirements.
- Maritime notices will be complied with.
- All activities will occur within the operational area.
- Other relevant notifications may be made, as requested by stakeholders.
- Lighting will be used as required for safe work conditions and navigational purposes.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Physical presence – equipment in-situ

If the wellhead or other equipment (e.g. the guidebase/s) are left in-situ following decommissioning, the permanent physical presence of the wellhead or other equipment will continue to:

- Provide a hard substrate resulting in the creation of a new habitat.
- Potentially interrupt natural sediment movement in the immediate vicinity of the wellhead remaining in-situ permanently.
- Introduce contaminants to the water column and sediment surrounding the wellhead as it degrades overtime.

Potential Impact

The gradual degradation and corrosion of the wellheads and equipment over time will result in trace amounts of metals to the water column and surrounding sediments. The main constituent of low-alloy steel used for this era of wellhead is iron (typically 95-98%), which is only toxic to marine organisms at extremely high concentrations – which are unlikely to be reached in this offshore location. The remaining constituents are chromium, molybdenum, manganese, and <1% of trace alloys including nickel, silicon, sulfur and phosphorous.

Corrosion of the wellhead is likely to be slow (at a rate of ~0.2 mm/year) because of exposure to strong water currents.

There are no other materials identified to be associated with the wellheads – i.e. plastic components or surface coatings.

Proposed Management/Mitigation

For wellheads and other equipment (e.g. guidebase/s) to be left in-situ following decommissioning, the EP must demonstrate an equal or better environmental outcome; and demonstration of ALARP and acceptability.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Atmospheric emissions and greenhouse gas (GHG):

- Atmospheric and GHG emissions are generated by the MODU and vessels as a result of combustion for power generation.
- Vessels may also use ozone-depleting substances (ODS) in refrigeration systems.
- No waste will be incinerated on board.

Potential Impact

- Hydrocarbon combustion may result in a temporary, localised reduction of air quality in the environment immediately surrounding the release point.
- Non-GHG emissions (such as NO_x and SO_x) and GHG emissions can lead to a reduction in local air quality.
- Given the short duration of the campaigns (between 2 to 60 days) and relatively low fuel usage, the contribution of atmospheric and GHG emissions to the global carbon budget is expected to be insignificant and is not evaluated further.

Proposed Management/Mitigation

- Use low sulphur fuel on the vessels and MODU, in accordance with legislative requirements (e.g. Marine Orders).
- Bulk solids transferred in accordance with bulk transfer procedures to reduce the risk of an unintentional release to sea and air.
- No waste incineration onboard.
- Ozone-depleting substances (ODS) managed in accordance with MARPOL.
- Compliance with regulatory requirements for marine air pollution and GHG emissions reporting.
- MODU and vessel Planned Maintenance System (PMS) in place to maintain DP, engines and machinery.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Noise emissions - Continuous:

Continuous noise emissions will be generated by the operation of support vessels, helicopters, operation of the MODU and cutting of the wellheads.

Potential Impact

Underwater noise emissions can cause:

- a change in marine fauna behaviour.
- mask communication.
- temporary or permanent hearing loss.

The greatest source of noise emissions is if a MODU on Dynamic Position (DP) is used (from thruster noise), and its support vessels.

The operational area does not overlap with any biologically important areas (BIAs) for marine mammals or fish/ sharks, though it does for 4 species of marine turtles – any individuals present would be transitory.

Potential impacts are likely to be restricted to localised and temporary avoidance behaviour. Given the short duration of the MODU campaign (60 days), the potential impacts are considered low.

Proposed Management/Mitigation

- Compliance with administrative controls (such as EPBC Regulations Part 8) to reduce interactions with marine fauna.
- Documented maintenance program in place for equipment on vessels that provides a status on the maintenance of equipment.
- MODU and vessel Planned Maintenance System (PMS) in place to maintain DP, engines and machinery.
- Marine assurance standard in place.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Noise emissions – Impulsive:

Impulsive noise emissions generated by acoustic survey techniques during the geophysical survey – i.e. Multibeam echo sounder, side scan sonar, sub-bottom profiling, magnetometer, ultrashort baseline positioning system.

Such equipment is designed to characterise the seabed topography, bathymetry, potential geohazards, and other seafloor features prior to MODU placement at the wellheads.

Potential Impact

The operational area does not overlap with any biologically important areas (BIAs) for marine mammals or fish/ sharks, though it does for 4 species of marine turtles – any individuals present would be transitory.

The impulsive noise emissions generated by the various acoustic survey instruments may result in localised and temporary behavioural changes to marine fauna within tens or hundreds of metres.

Proposed Management/Mitigation

Compliance with administrative controls (such as EPBC Regulations 8 (Part 8) to reduce interactions with marine fauna.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Light Emissions:

Lights on the MODU and vessels will be required on a 24-hour basis during the activities for safety and navigational purposes, in accordance with navigational requirements.

There is no proposed flaring.

Potential Impact

Light emissions have the potential to result in changes to marine fauna behaviour, by acting as an attractant to light-sensitive species, leading to possible increased predation and/or disorientation.

The closest nesting BIA for marine turtles is ~116 km from the 20 km buffer used for light impact assessment – meaning light from the MODU and vessels is not visible from shore; and there is no potential to impact nesting females or hatchlings.

The operational area does not overlap any BIAs for seabirds, and is >150 km from shore, meaning there is no potential to impact fledging behaviour.

There is the potential for a small number of adult seabirds and migratory shorebirds may be attracted to the MODU and vessels, however given the short duration of the campaigns (between 2 to 60 days), this is considered minor.

Proposed Management/Mitigation

Lighting will be used as required for safe work conditions and navigational purposes.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Planned discharges - Routine:

Operation of vessels and the MODU will routinely discharge the following to the marine environment:

- sewage
- greywater
- putrescible waste
- treated bilge
- cooling water and brine
- deck drainage.

Potential Impact

A temporary and localised impact on water quality may result in a change in water quality and changes to predator-prey dynamics.

Given the relatively low volume and intermittent nature of planned vessel discharges, the short duration of the campaigns (between 2 to 60 days), the water depth and open ocean environment of the operational area, the potential impact is expected to be localised to the immediate proximity of the release, and of short duration.

Proposed Management/Mitigation

- All routine marine discharges will be managed according to legislative requirements.
- MODU and vessel PMS in place to maintain DP, engines and machinery.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Planned discharges - Decommissioning

Decommissioning activities may result in the following discharges to the marine environment:

- inhibited seawater (chemical additives include biocide, oxygen scavenger, dyes, corrosion inhibitor).
- control (hydraulic) fluid.
- cement and cement debris.
- Water Based Mud (WBM).
- reservoir gas.
- cleaning chemicals (weak acids)

No synthetic based mud will be used.

Potential Impact

Discharges of muds and other fluids have the potential to impact to:

- Water quality.
- Sediment quality and benthic habitat.
- Local marine fauna.

The benthic fauna and seabed at the operational area is widely represented on the Joseph Bonaparte Gulf.

Given the quantities of the discharges, the low toxicity of WBM and cement and high dispersion in the open, offshore environment, any impact on the marine environment from the discharges are expected to be minor and temporary. Recovery of water quality conditions is expected within hours after the cessation of the discharges.

Cement discharge impacts to the marine environment are associated with smothering of benthic and infauna communities in the vicinity of the wellheads. Due to the localised area of disturbance, impacted benthic communities are expected to rapidly re-colonise any disturbed areas upon completion of the activities.

Proposed Management/Mitigation

- Selection of chemicals to reduce impact to as low as reasonably practicable (ALARP) and acceptable levels.
- Quality control limits for barite.
- Bulk powder, fluids and brine discharge framework, to restrict the discharge of leftover bulk products to ALARP.
- Drill cuttings returned to the MODU will be discharged below the water line to facilitate dispersion.
- Lost-circulation material procedures.
- Cement remaining at the completion of drilling is managed so as to avoid or minimise its discharge overboard.
- Chemical assessment procedure will be implemented.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Interaction with other marine users -equipment in-situ:

If the wellhead or other equipment (e.g. the guide base/s) are left in-situ following decommissioning, the permanent physical presence of the wellhead or other equipment may cause an impact to other marine users (e.g. commercial fisheries, petroleum industry, or shipping)

Potential Impact

The wellheads have been in-situ on the seabed for the past ~40 years without any reported incidents or issues. The height of the wellheads is only ~3 m above the seabed, and the guidebase/s are partially buried.

Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area.

There are no tourism or recreational fishing activities expected in the operational area due to distance from shore, and no Maritime Defence Exercise areas.

There are no known recognised major shipping routes through the operational area, and the water depth (~95 m) and height of the wellheads (~3 m) mean it is unlikely to cause any disturbance or displacement of shipping traffic.

Proposed Management/Mitigation

- Wellheads are charted on AHO nautical charts so that marine users are aware of their location.
- AHO and any other stakeholders who requested to be informed of wellhead locations (i.e fisheries) are notified.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact Marine fauna interaction

There is the potential for vessels to collide with marine fauna, including marine mammals, fish, marine reptiles and seabirds.

The main collision risk is through vessel collision with large, slow-moving cetaceans, potentially resulting in severe injury or mortality.

Potential Impact

Given the short duration of the campaigns (between 2 to 60 days), and the slow speeds at which vessels operate, collisions with marine fauna are considered highly unlikely.

Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

Compliance with administrative controls (such as EPBC Regulations Part 8) to reduce interactions with marine fauna. • Any vessel strikes with cetaceans will be reported in the National Ship Strike Database. • Observations of the surroundings will be undertaken from the vessel/s for marine fauna.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Introduction of marine pest species

There is the potential for introduction and establishment of invasive marine pests to the operational area via vessels ballast water or biofouling on vessel hulls.

Potential Impact

The risk of introducing IMS is limited by the depth of the operational area (>50 m), which is not directly adjacent to any shallow shoals or banks. The substrate in the operational area does not have any hard substrate to which IMS can attach.

Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

- All vessels will be assessed and managed as appropriate to prevent the introduction of marine pests.
- Vessels will comply with biosecurity requirements for ballast water and biofouling and comply with the Maritime Arrivals Reporting System (MARS).

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Accidental release – waste and solid objects

There is the potential for the accidental disposal of hazardous wastes (e.g. hydrocarbon contaminated materials, batteries, paint cans) and nonhazardous solid wastes (e.g. paper and cardboard, wooden pallets, scrap steel, rope, glass and plastics).

There is the potential for dropped objects during retrieval activities – i.e. the wellhead or guidebase/s (in particular if corroded) or the winches.

Potential Impact

The accidental release of wastes can cause a temporary and localised reduction in water quality, and the potential for marine fauna to ingest or become entangled with solid waste (garbage).

If equipment is dropped, this may cause disturbance or smothering of benthic habitats. The largest footprint of any item of equipment that will be lifted or retrieved during the campaigns is 30 m³ (footprint of a guidebase or basket).

This is a small area; and benthic habitats are known to rapidly recover. There are no KEFs or sensitive benthic habitat in the operational area.

Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

- Procedures to reduce the potential for loss of non-hazardous and hazardous waste and dropped objects to be followed.
- Dropped objects to be retrieved where possible.
- Lifting procedures will be implemented.
- For hazardous chemicals, including hydrocarbons, hazardous chemical management procedures will be in place to reduce the risk of an accidental release to sea.
- Chemical assessment procedure will be implemented.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Accidental release – Minor loss of containment

Minor volumes of hydrocarbon or other chemicals (e.g. hydraulic fluids, deck spills) may be accidentally released to the marine environment due to:

- Bulk product spills (e.g. cement, barite).
- Loss of primary/secondary containment.
- Incorrect handling and storage.
- ROV failure.

Potential Impact

Minor accidental releases of hydrocarbons or chemicals can cause a change in water quality. Expected volumes are small (<1 m³), and there is no potential for injury or mortality to marine fauna.

Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

- Use of MDO rather than Heavy Fuel Oil (HFO) on vessels (MDO is lighter than HFO and will evaporate faster and persist less in the marine environment).
- Response plans and equipment will be in place and maintained to manage spills to the environment (e.g. oil pollution emergency plans).
• Administrative control, such as bunkering / bulk refuelling procedures.
- In the event of a minor loss of containment to sea, Oil Pollution Emergency Plan (OPEP) requirements will be implemented to mitigate environmental impacts.
- Chemical assessment procedure will be implemented.
- For hazardous chemicals, including hydrocarbons, hazardous chemical management procedures will be in place to reduce the risk of an accidental release to sea.
- Remotely operated vehicle (ROV) inspection and maintenance procedures.
- Procedures to reduce the potential for loss of non-hazardous and hazardous waste and dropped objects to be followed.
- MODU and vessel PMS in place to maintain DP, engines and machinery.
- Where required, operational and scientific monitoring undertaken in accordance with Eni's Operational and Scientific Monitoring Plan.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Accidental release – MDO (vessel collision)

A release of up to 300 m³ marine diesel oil (MDO) could occur from a collision between the activity vessels and a third-party vessel due to factors such as h

Human error, poor navigation, vessel equipment failure or poor weather. A smaller volume of MDO (~50 m³) could be released during bunkering (i.e. refuelling of the MODU).

Potential Impact

An accidental release of MDO can cause a change in water quality, a change in fauna behaviour, injury or mortality to marine fauna and an impact to other marine users.

Potential impacts include those to plankton, fish, marine turtles, marine mammals, seabirds and migratory shorebirds, commercial fisheries, and cultural heritage.

MDO is a relatively volatile, nonpersistent nature hydrocarbon with rapid evaporation on the sea-surface (typically ~36% within the first 2 hours).

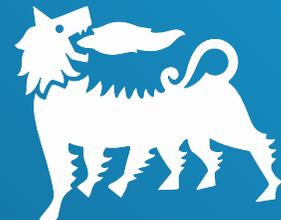
Hydrocarbon spill modelling does not predict any shoreline contact; or any contact with Marine Parks or KEFs.

Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area. There are no tourism or recreational fishing activities expected, and no Maritime Defence Exercise areas.

Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

- Pre-start notifications will be issued.
- Regulatory requirements for the prevention of vessel collisions and safety and emergency arrangements.
- Use of MDO rather than Heavy Fuel Oil (HFO) on vessels.
- In the event of an oil spill to sea, OPEP requirements will be implemented to mitigate environmental impacts.
- Response plans and equipment will be in place and maintained to manage spills to the environment (e.g., oil pollution emergency plans).
- Administrative control, such as bunkering / bulk refuelling procedures.
- Vessels selected and on-boarded are operated, maintained and manned in accordance with industry standards (Marine Orders) and regulatory requirements.
- Where required, operational and scientific monitoring undertaken in accordance with Eni's Operational and Scientific Monitoring Plan.



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

BUSINESS AFTER HOURS

East Kimberley Chamber of Commerce and Industry
Phoenix Plaza, Kununurra

31 July 2024

Introduction to the Eni team



Angelina Branco

Stakeholder Engagement & CSR Manager

Dan Mahney

Completions and Interventions Supervisor

Mike Prime

Stakeholder Engagement Adviser

Why are we here?

(Reason for this consultation)



- ❑ **Meeting people in our footprint is a part of how we like to work**
 - It's good corporate social responsibility
 - We can learn about and respond to community interests and requests
 - It helps identify those interested in our activities
 - It sometimes creates partnership opportunities

- ❑ **We're specifically here to consult on the preparation of the Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan**
 - This includes relevant and interested individuals, groups and communities (relevant persons)
 - We want to provide relevant persons with face-to-face opportunities to give us feedback directly
 - We want to understand the impacts, risks and opportunities linked to our activities in our footprint



About Eni

Eni in Australia & Timor-Leste

Introducing Eni SpA



An integrated energy company and moving towards energy transition



61 countries - 32,000+ employees globally (21K+ Italy; 10K+ abroad)



Australian and Timor-Leste - only 101 employees

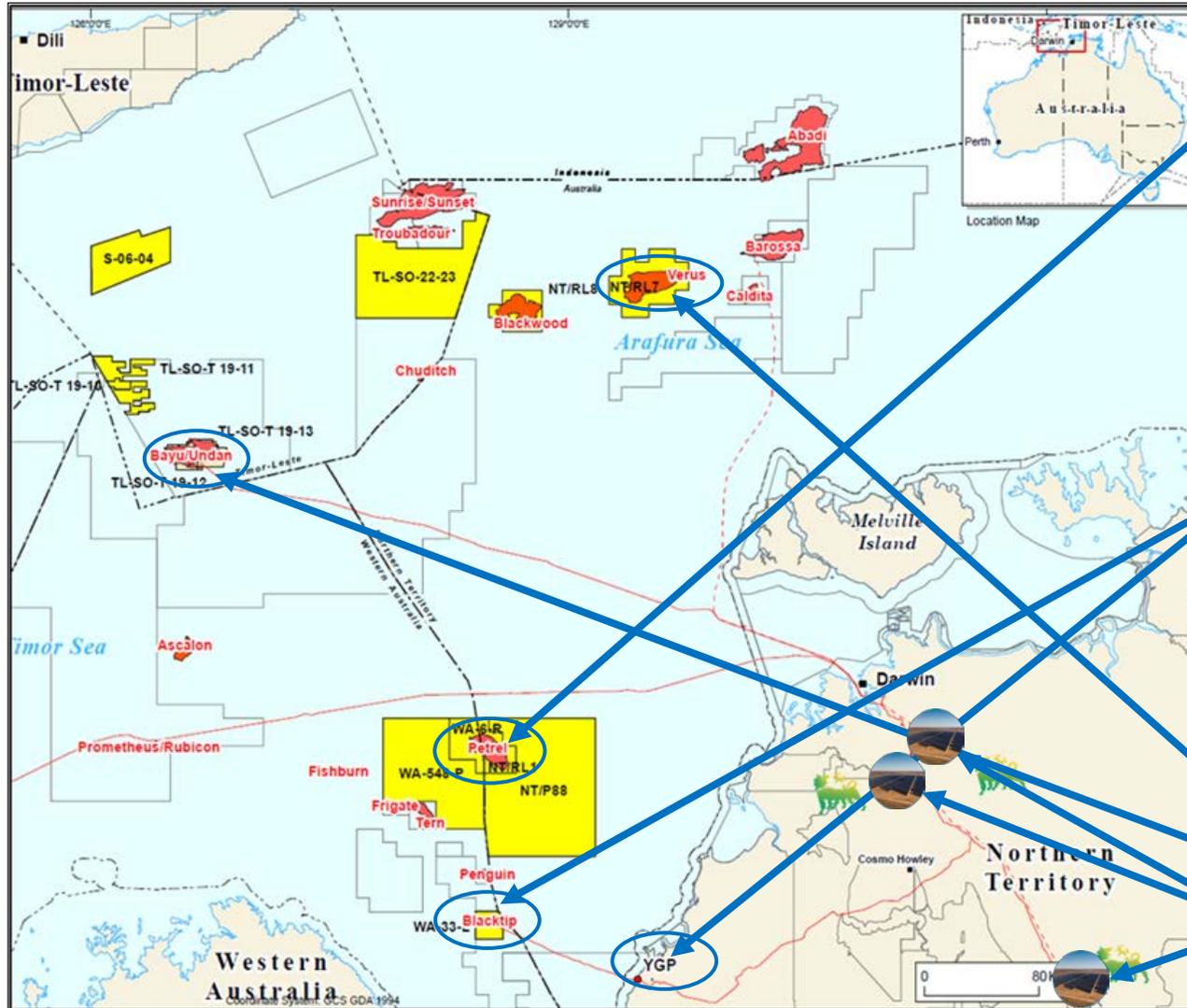


Eni believes in contributing to community in places it operates
("Dual Flag" model) <https://www.eni.com/en-IT/sustainability/our-commitment.html>



Offices in Perth, Darwin, Yelcher Gas Plant (Wadeye) and Dili (Timor-Leste)

Eni in Australia and Timor Leste



Petrel Monitoring & Decommissioning

- Permit acquired by Eni Feb. 2024 - contains two subsea wells
- A need to decommission (plug and abandon) existing Petrel-3 and Petrel -4 subsea wells

Blacktip and YGP Gas Production

- Providing almost all the Territory's gas needs to generate electricity for homes, industry and business
- Providing 100% of gas supply to Wadeye for power generation (since 2021)
- New drilling activity to occur in Q4 2024

Other Projects

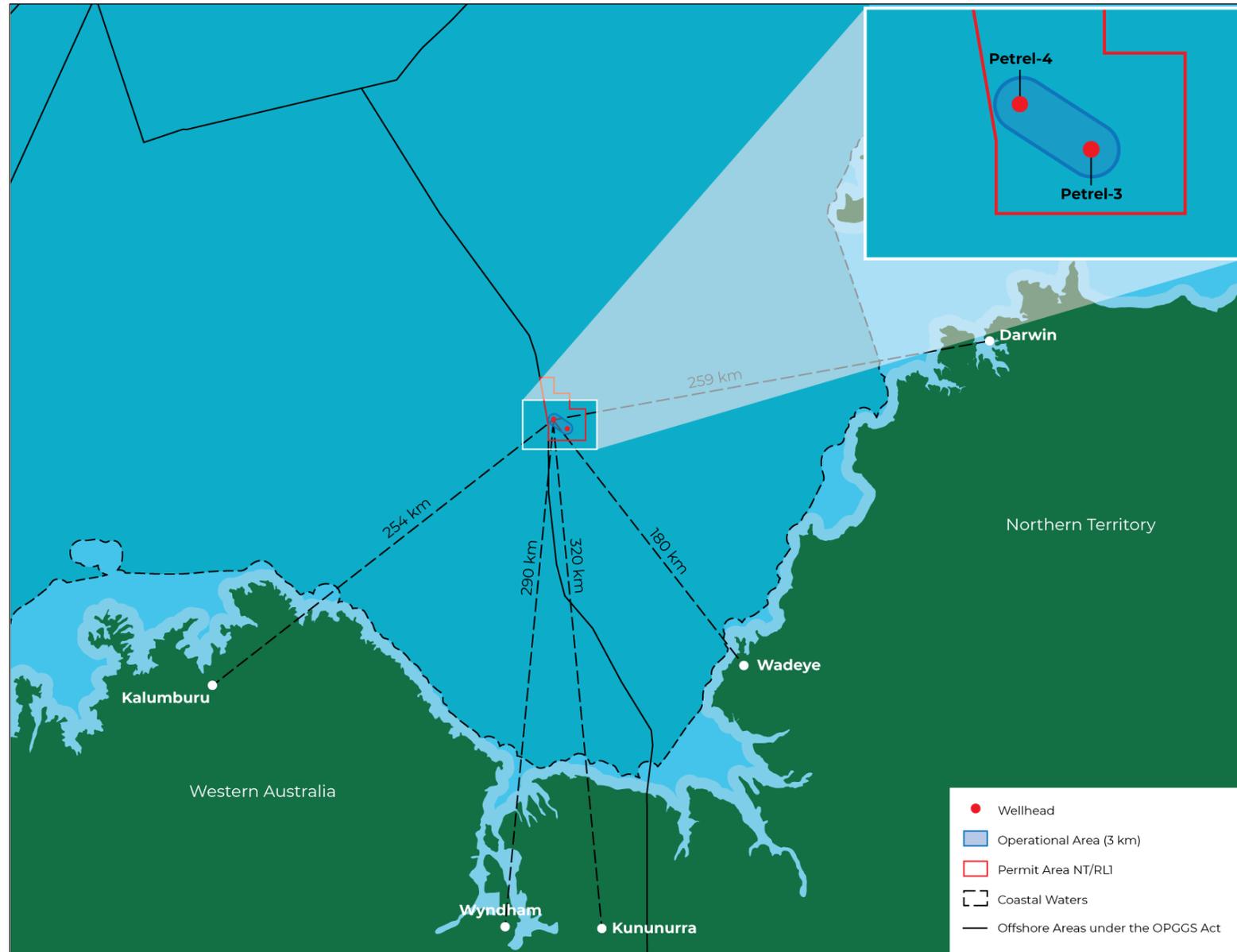
- Verus (Offshore)
- Bayu-Undan Gas Field and DLNG (11% Eni)
- Renewables – 3x Solar Plants with total capacity 59 Megawatts (Katherine, Batchelor, Manton Dam)



Petrel

Petrel-3 and Petrel-4 Monitoring and Decommissioning Activities

Petrel-3 and Petrel-4 location

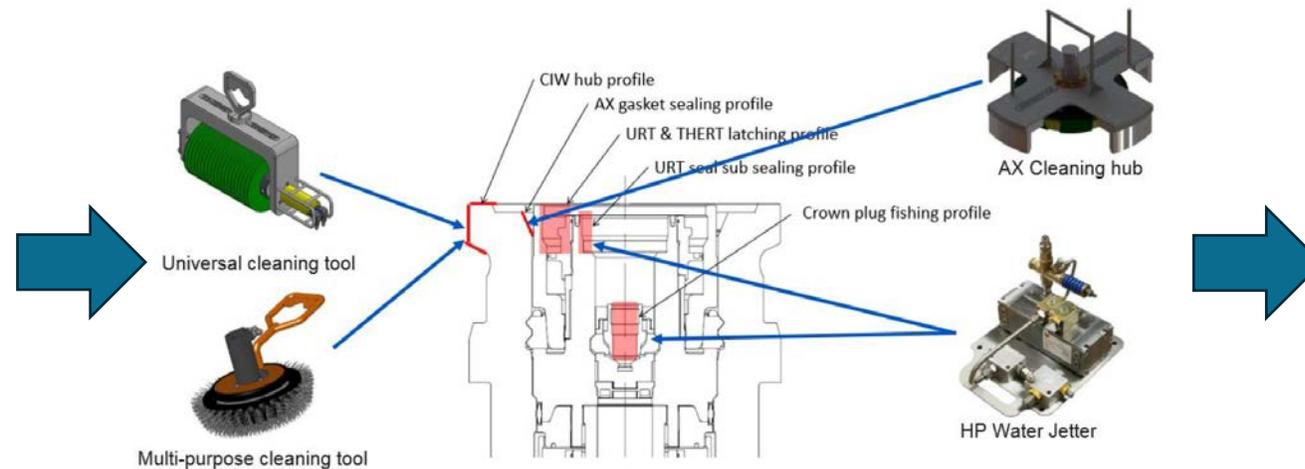
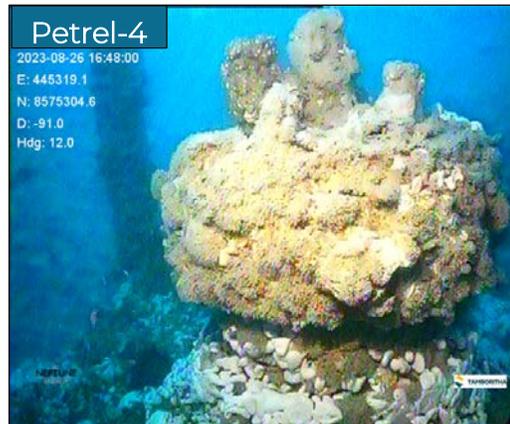


Monitoring and Decommissioning - Summary



Activities for Decommissioning of Petrel-3 and Petrel-4 subsea wells include:

- ❑ General Video Inspection
– visual survey of suspended wells and surrounds
- ❑ Geotechnical Survey
- ❑ Geophysical Survey
- ❑ Pre-abandonment Vessel Campaign
- ❑ Decommissioning (plug and abandonment) of Petrel-3 and Petrel-4
- ❑ Post Decommissioning 'as-left' Survey

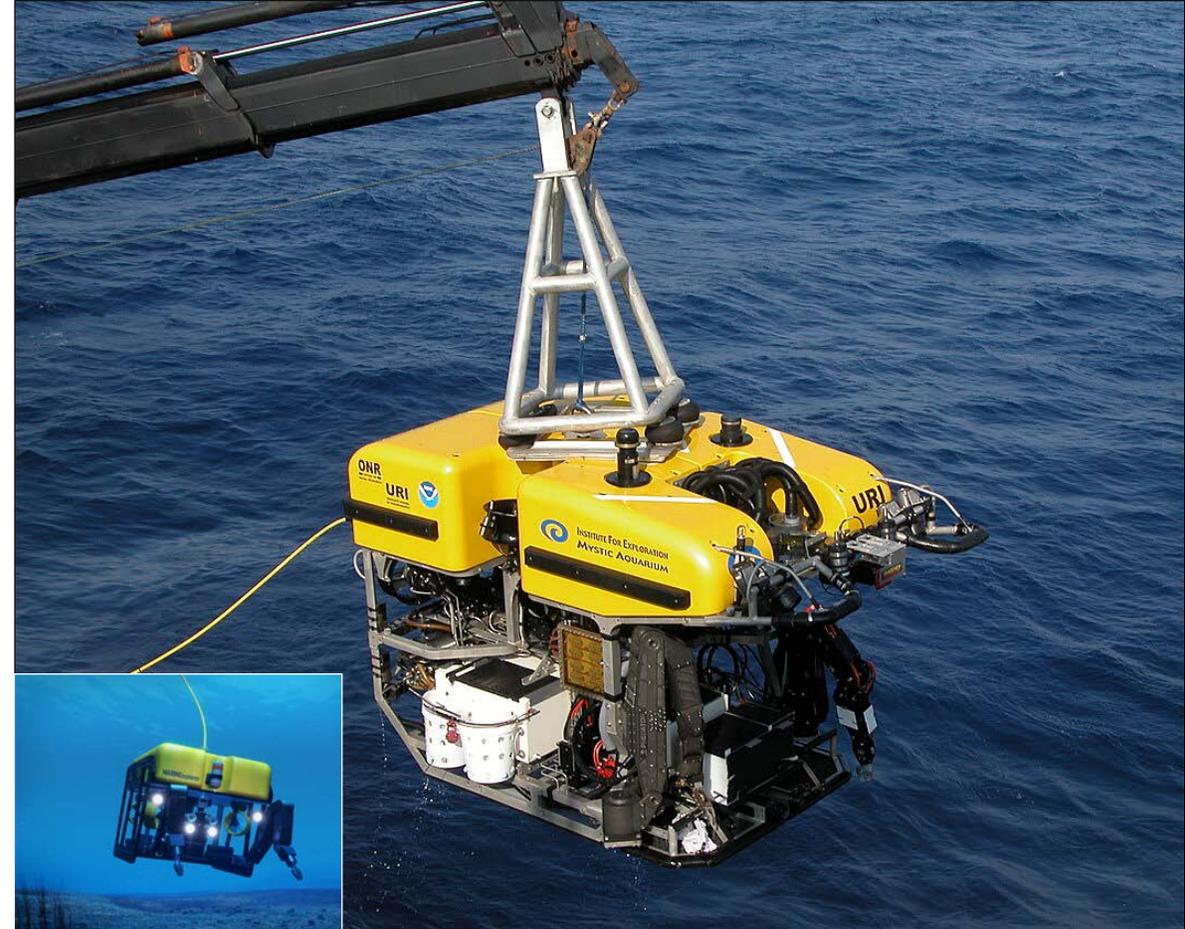


Visual Inspection



Preparation for decommissioning requires a visual inspection of subsea wells

- ❑ Anticipated to be conducted Q4 2024 (then annually)
- ❑ Final timing subject to vessel/rig availability and weather
- ❑ Inspection surveys performed using Remote Operated Vehicles (ROV) that are deployed from contracted vessels
- ❑ Marine growth removal may be done to adequately assess condition of wellheads (high-pressure hose in-situ saltwater)
- ❑ Potential removal and replacement of the corrosion cap (with 3D camera/laser scanning)
- ❑ May also include the geophysical and geotechnical surveys



Pre-abandonment Vessel Campaign



... to inspect internal condition of the wellhead prior to abandonment activities

- ❑ Only if required (if we do a comprehensive visual, cleaning and inspection survey then we may not need this)
- ❑ Removal of corrosion cap, (may require marine growth removal first using mechanical cleaning (brushes/scrapper) or cleaning chemicals)
- ❑ A small volume (less than 1m³) of seawater and biocide (trapped under the cap) may be released when removing the corrosion cap
- ❑ 3D external scan of the wellheads by a camera or laser
- ❑ Scanning will be two hours duration per well

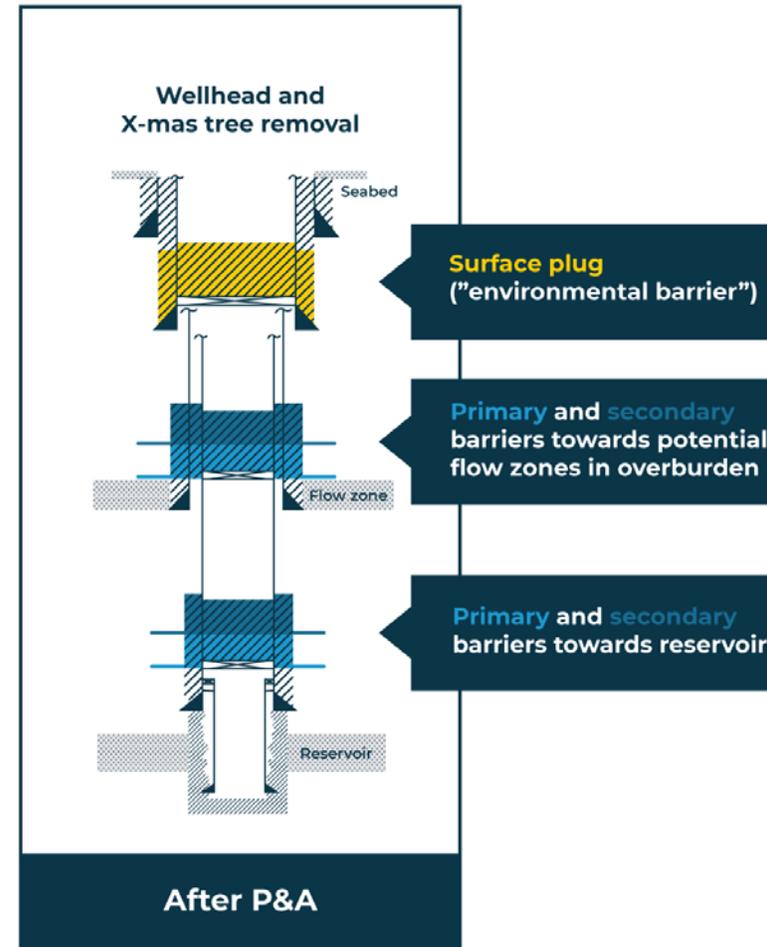


Decommissioning - Plug and Abandonment (P&A)

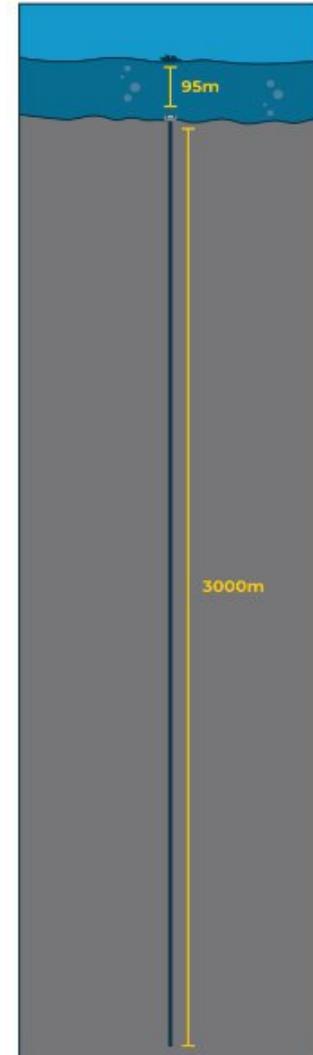


Permanent isolation of the reservoir and removal of infrastructure

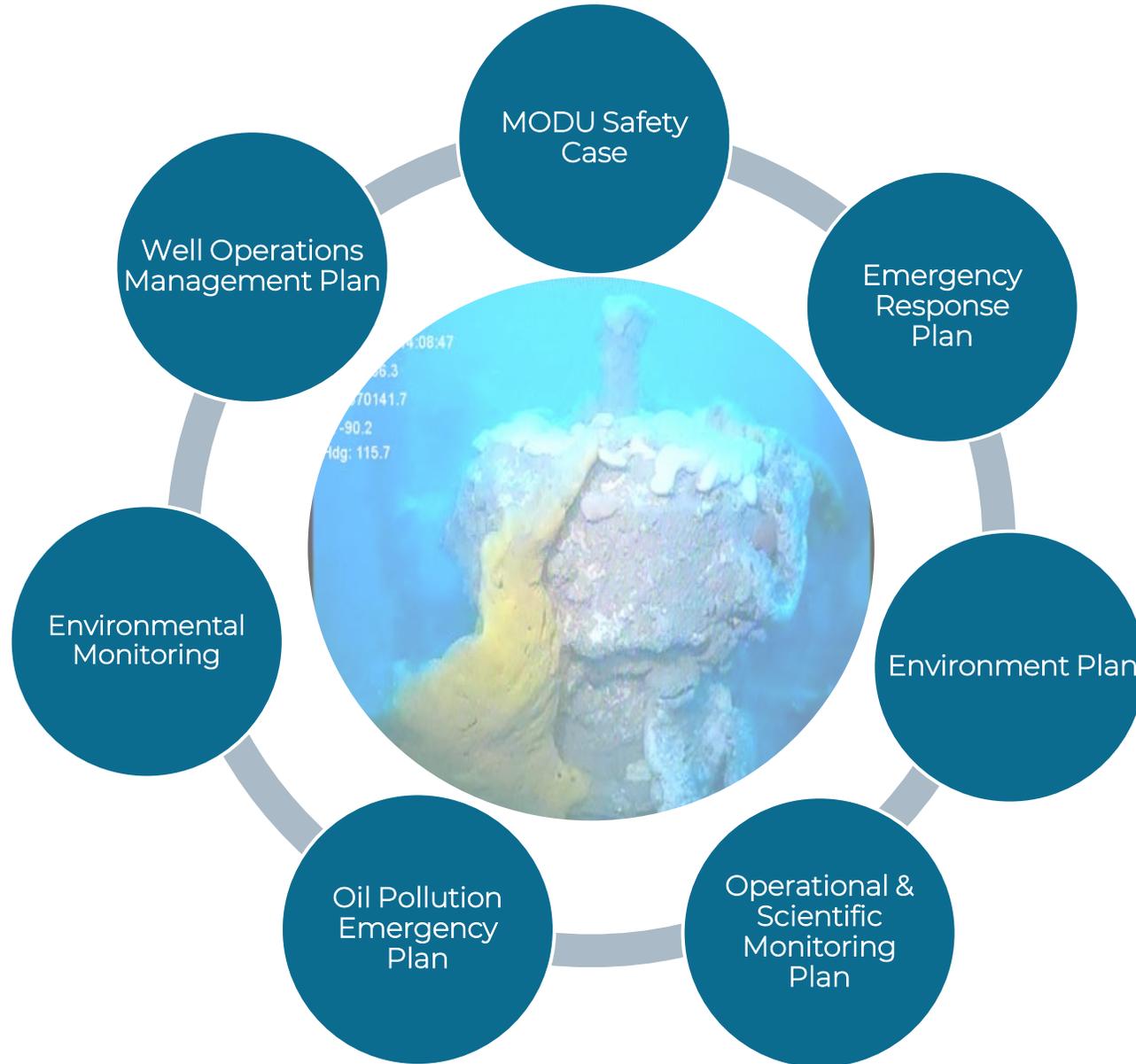
- ❑ Wells previously suspended in 1980s
- ❑ Single campaign with contingency for second campaign if required
- ❑ Rig configuration to be determined – based on feasibility, availability and weather
- ❑ Reservoir will not flow unaided, loss of well control is not considered possible
- ❑ A small volume of trapped gas (1m^3) and small volumes of cement and/or milling fluids may be released during P&A
- ❑ Infrastructure removal options under consideration in consultation with Regulator



Example only



Operator Requirements



Potential Environmental Impact & Mitigation Measure

Planned Impacts



Planned Event	Potential Impact	Proposed Mitigation / Control
Seabed disturbance	<ul style="list-style-type: none"> Localised, temporary reduction in water quality and benthic habitat. Maximum footprint (MODU) 1,944m² per well 	<ul style="list-style-type: none"> Low sulphur fuel Bulk transfer procedures Regulatory and GHG emissions reporting compliance Planned maintenance
Physical interaction	<ul style="list-style-type: none"> Short duration – 2 to 60 days Seven active fisheries, limited historical catch effort No tourism, recreational or defence activities expected in area 	<ul style="list-style-type: none"> Navigation equipment and procedures Maritime notices and notifications as requested Lighting for safety and navigation work
Equipment in-situ	<ul style="list-style-type: none"> Slow degradation and corrosion 	<ul style="list-style-type: none"> To leave in-situ, must demonstrate equal or better environmental outcome
Atmospheric emissions and greenhouse gas	<ul style="list-style-type: none"> Temporary, localised reduction of air quality Short duration and low fuel usage, expected to be insignificant 	<ul style="list-style-type: none"> Low sulphur fuel Bulk transfer procedures and no on board waste incineration Regulatory compliance and planned maintenance
Noise emissions Continuous	<ul style="list-style-type: none"> Change in marine fauna behaviour, mask communication Temporary or permanent hearing loss 	<ul style="list-style-type: none"> Marine assurances standard Regulatory compliance and planned maintenance
Noise emissions Impulsive	<ul style="list-style-type: none"> Geophysical survey – not seismic Sonar, side scan, echo sounder, magnetometer 	<ul style="list-style-type: none"> Regulatory compliance
Light emissions	<ul style="list-style-type: none"> Changes to marine fauna behaviour, attractant to light sensitive species 	<ul style="list-style-type: none"> Lighting for safe work and navigational purposes
Planned discharges Routine	<ul style="list-style-type: none"> Temporary and localised impact on water quality 	<ul style="list-style-type: none"> All routine marine discharges managed according to legislative requirements
Planned discharges Decommissioning	<ul style="list-style-type: none"> Water, sediment and benthic habitat quality Local marine fauna 	<ul style="list-style-type: none"> Lowest impact selection of chemicals, fluids, bulk disposal procedures

Potential Environmental Impact & Mitigation Measure

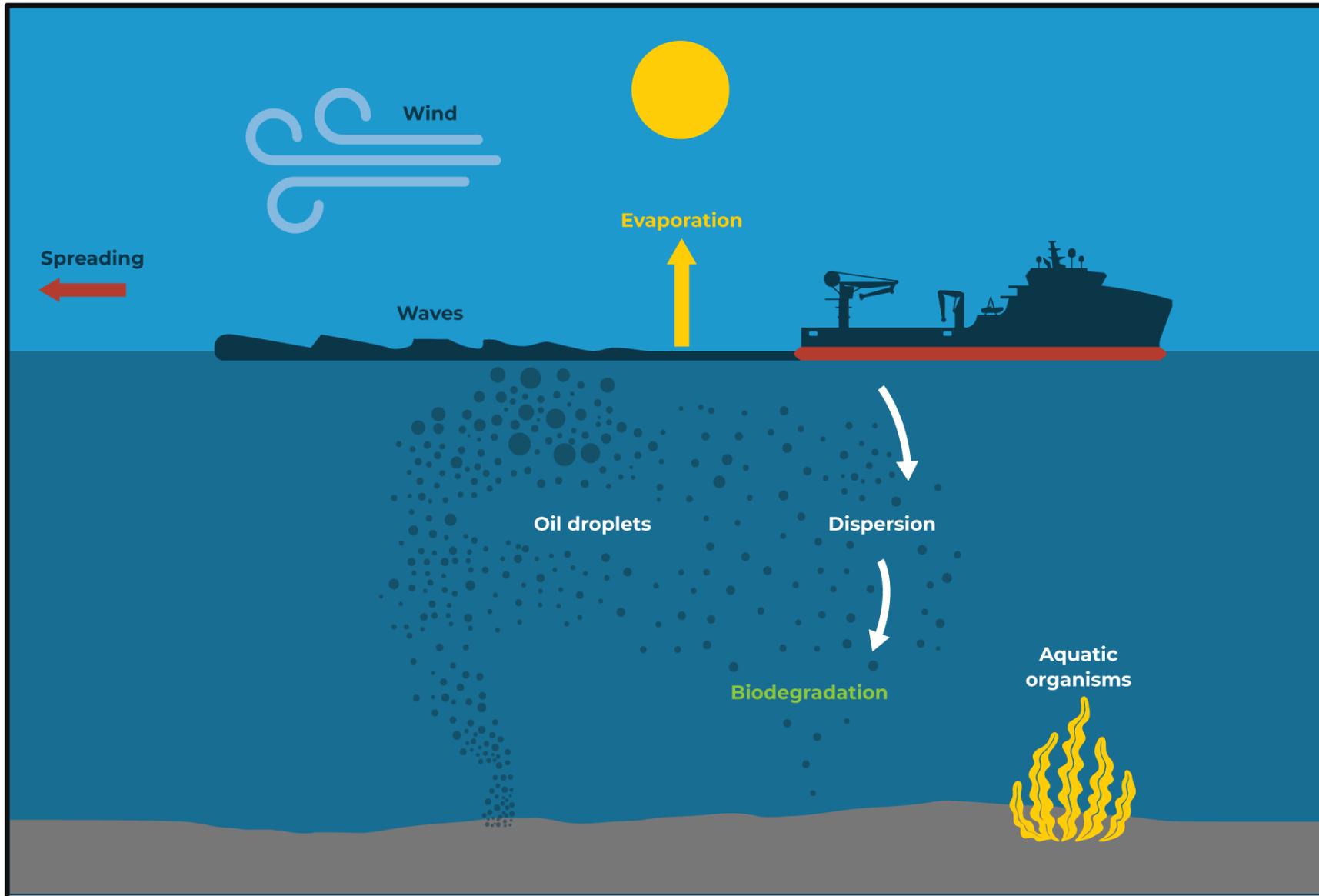
Unplanned Impacts



Unplanned Event	Potential Impact	Proposed Mitigation / Control
Interaction with other marine users – equipment in-situ	<ul style="list-style-type: none"> Fisheries – seven active, limited historical catch effort No tourism, recreational or defence activities expected in the area No known recognised shipping routes through operational area 	<ul style="list-style-type: none"> Wellheads mapped on AHO nautical charts AHO and other relevant persons notified as requested
Marine fauna interaction	<ul style="list-style-type: none"> Collision with marine fauna 	<ul style="list-style-type: none"> Observations of surroundings Reporting compliance
Introduction of marine pests	<ul style="list-style-type: none"> Invasive marine pests in operation area via vessels ballast water or biofouling on hulls 	<ul style="list-style-type: none"> All vessels assessed and managed to prevent/ Vessel compliance with biosecurity requirements
Accidental release – waste and solid objects	<ul style="list-style-type: none"> Temporary, localised reduction in water quality Marine fauna ingest accidental release Benthic habitat disturbance 	<ul style="list-style-type: none"> Waste, lifting and dropped objects procedures Retrieval where possible Chemical management procedures
Accidental release – minor loss of containment	<ul style="list-style-type: none"> Volumes expected to be >1m³ Change in water quality 	<ul style="list-style-type: none"> Use of Marine Diesel Fuel Response plans and equipment in place Chemical management procedures Planned maintenance Operational and Scientific Monitoring Plan
Accidental release – MDO (vessel collision)	<ul style="list-style-type: none"> Change in water quality, fauna behaviour, injury or mortality to marine fauna Other marine users No shoreline contact Fisheries – seven active, limited historical catch effort 	<ul style="list-style-type: none"> Pre-start notifications Regulatory compliance MDO rather than Heavy Fuel Oil Emergency procedures and response plans Regulatory compliance



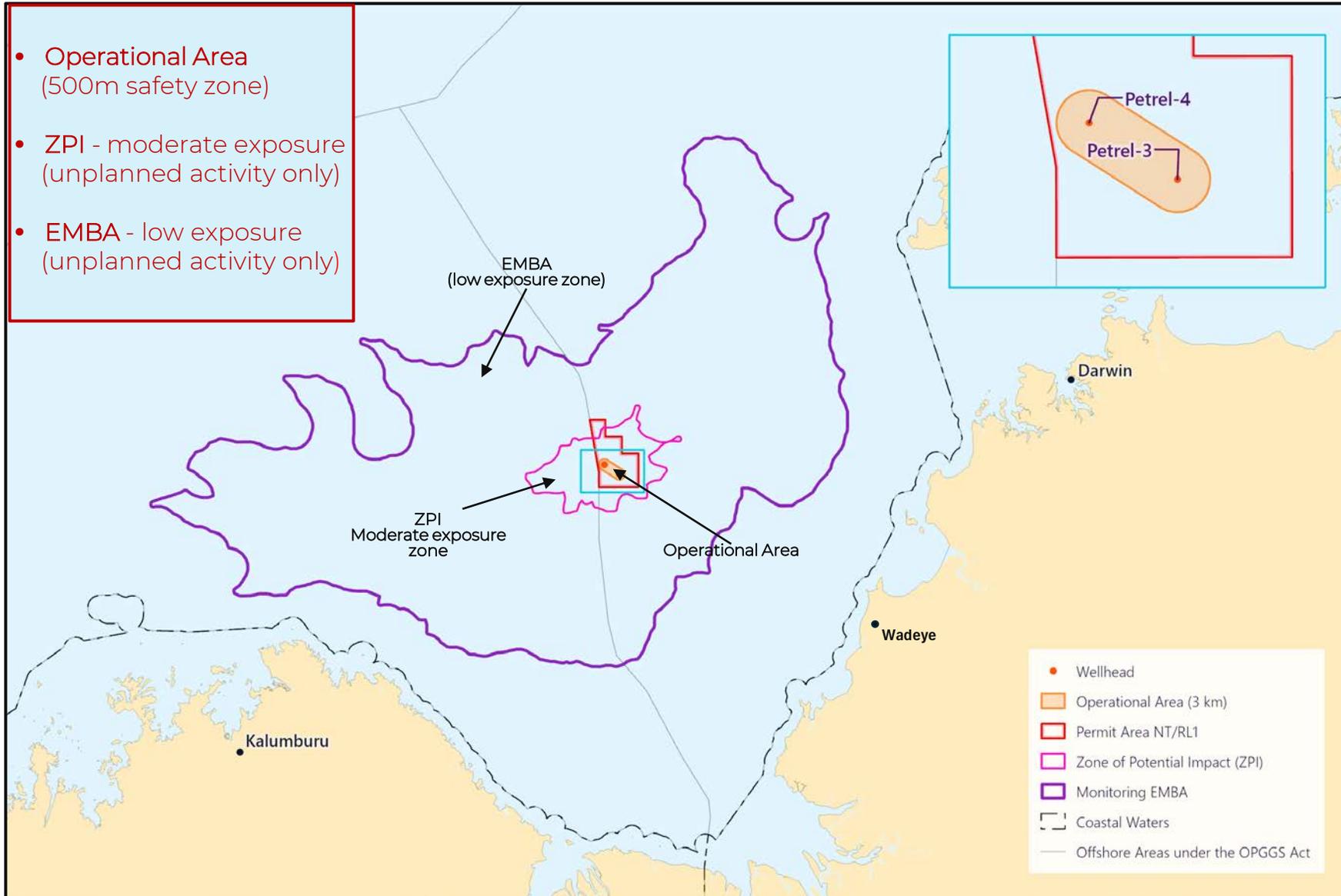
Oil Spill Modelling



Other oil spill modelling considerations:

- Degradation
- Emulsification
- Sedimentation
- Dissolution
- Photo-oxidation

Activity EMBA - Marine Diesel Oil



Probability

- The likelihood of a vessel collision is considered rare

Control measures

- Navigation equipment and procedures
- Vessel emergency management plan
- Refueling transfer procedures
- Oil Pollution Emergency Plan
- Oil Spill Management Plan

Floating oil exposure

- 1g /m³ (low)
- 10g /m³ (moderate)
- 50g /m³ (high)

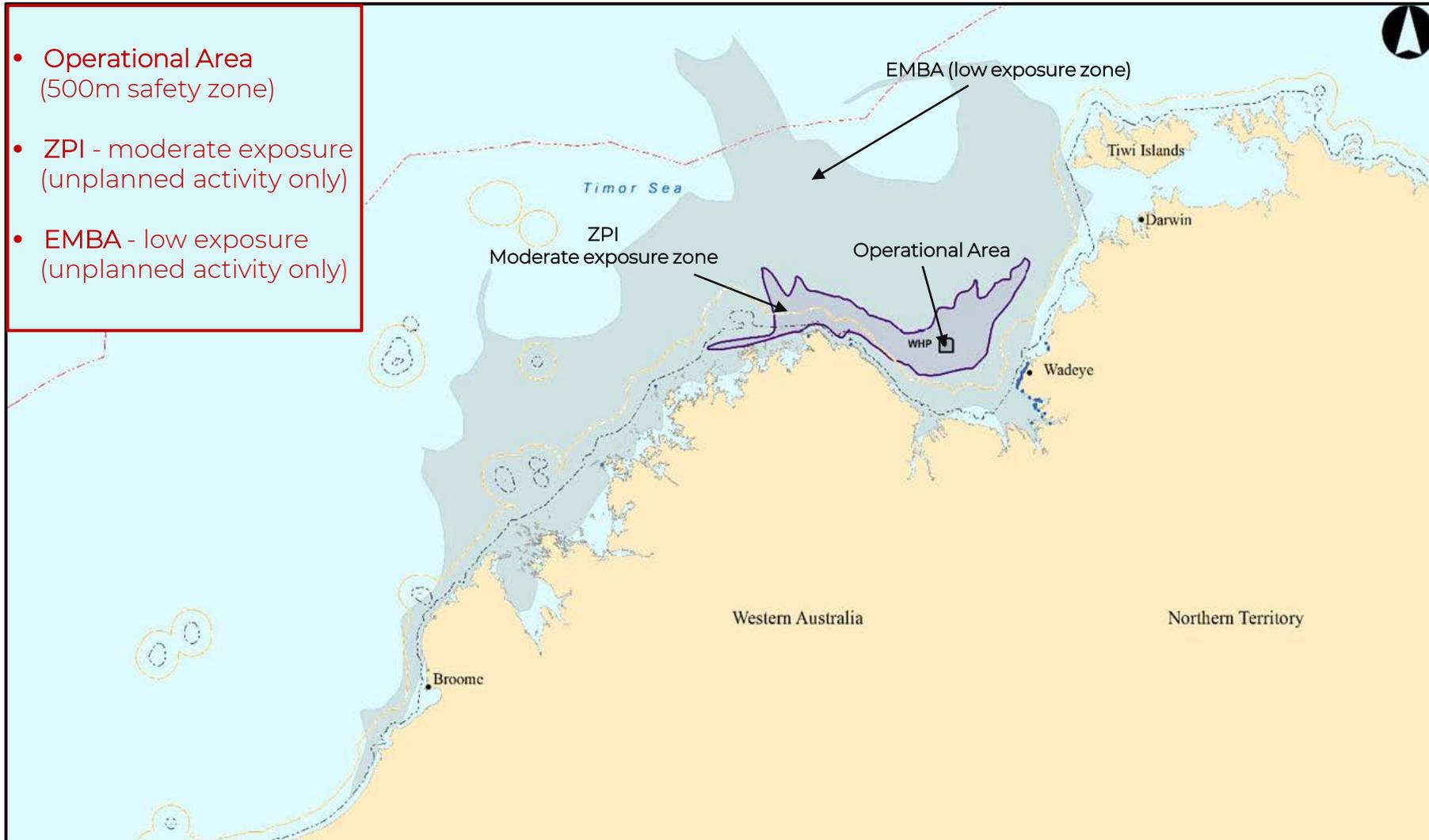
Evaporation / decay rate

- 36.1% evaporation (constant wind)
- MDO decays at a higher rate of 3% per day

Ecological impact onshore

- No shoreline contact.

EMBA from previous Blacktip Drilling EP consultation



- Operational Area (500m safety zone)
- ZPI - moderate exposure (unplanned activity only)
- EMBA - low exposure (unplanned activity only)

- Preventative controls
- Unplanned event only if BOP fails
- ERP Activation
- High evaporation rate



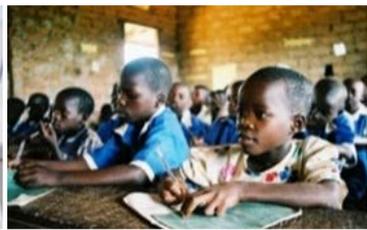
Our Community Work Globally

Community Development - Sustainable Development Goals

Global Community Programs



6 SECTORS OF INTERVENTION

ACCESS TO ENERGY	LIFE ON LAND	ECONOMIC DIVERSIFICATION & GOOD FARMING	ACCESS TO WATER & SANITATION	EDUCATION & VOCATIONAL TRAINING	HEALTH
					

Promoting the Respect of Human Rights and Transparency along the business lifecycle



Supporting National Development Plans also through Public Private Partnerships

Adopting **International Organizations' standards, methodologies and tools**



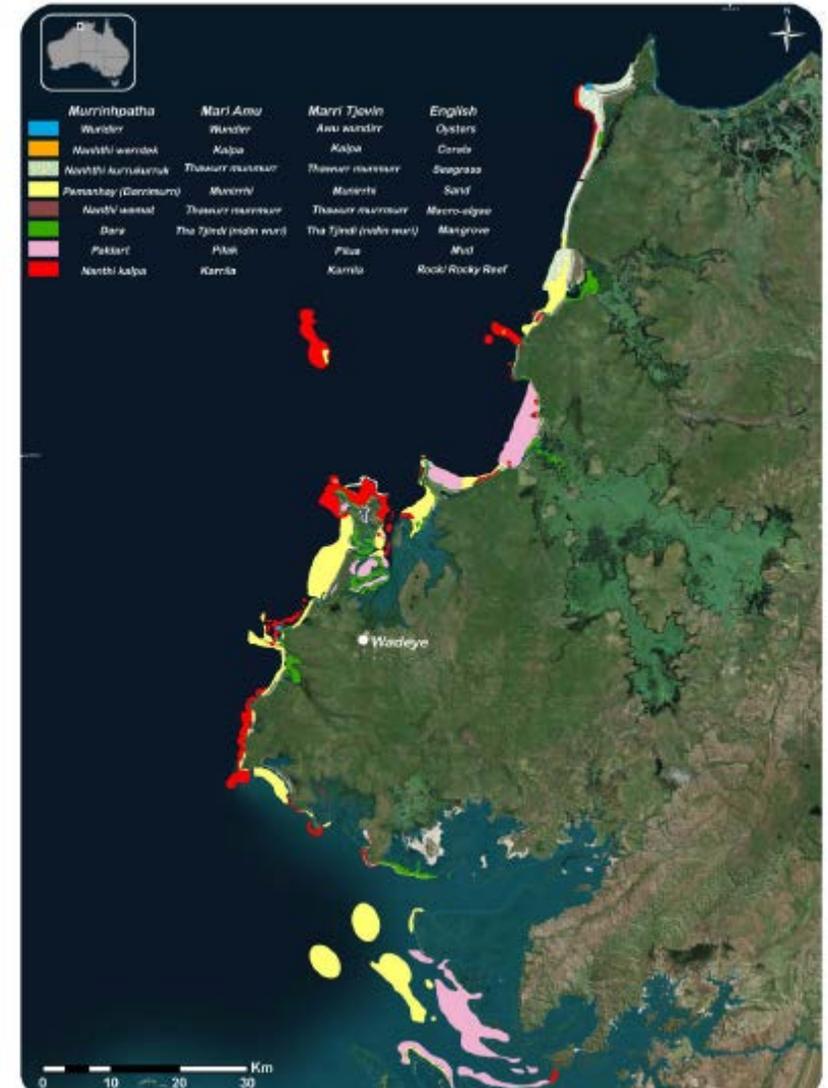
Eni's Local Contribution



Participatory Mapping with TOs & Rangers



Thamarrurr Sea Country Habitat Map



Eni's Local Contribution



Shellfish & Sediment Monitoring with Rangers



SPM Monitoring by Rangers



Eni's Local Contribution



Water Sampling Training with AIMS





Where To From Here

Consultation

Where to From Here . .



- ❑ Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan consultation commenced on 19 June 2024 and, at this stage, will be continuing until end August 2024
- ❑ If you would like to seek more information, get further clarification, or request another meeting, please contact us through info@petreleni.com.au; phone us on 1300 155 616; or visit our website at petreleni.com.au.
- ❑ The Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan is expected to be submitted to NOPSEMA by the end of August 2024
- ❑ Any other Questions?



Thank you

Decommissioning - Plug and Abandonment (P&A)

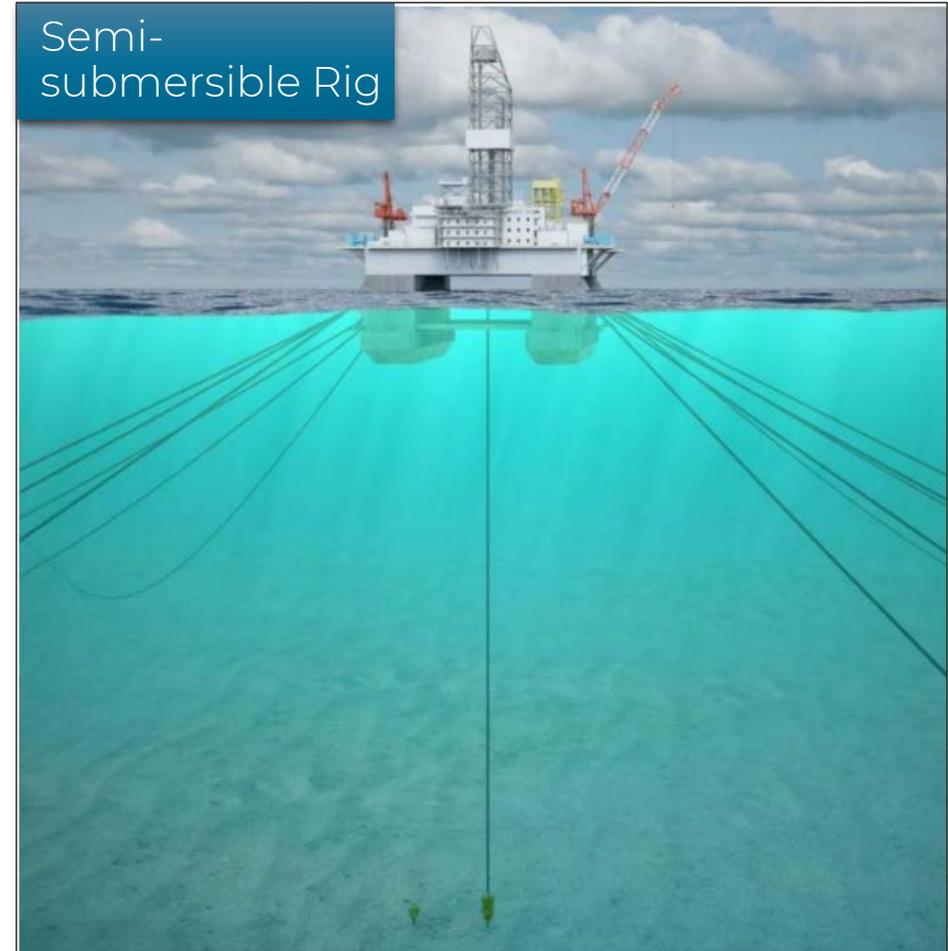


Rig examples

Jack Up Rig



Semi-submersible Rig



Potential Environmental Impact & Mitigation Measure



Planned Impact - Physical interaction

The physical presence of the MODU and movement of vessels within the operational area can interfere with other marine users by causing displacement from the area during activities.

Potential Impact

The operational area is a 3 km radius around the two wells and the corridor between them. There is no formal Petroleum Safety Zone; however, exclusion and cautionary zones will be in place during activities.

Activities in the operational area are of short duration, expected to last between 2 to 60 days.

Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area.

There are no tourism or recreational fishing activities expected in the operational area due to distance from shore, and no Maritime Defence Exercise areas.

Proposed Management/Mitigation

- Navigation equipment and procedures, in accordance with legislative requirements.
- Maritime notices will be complied with.
- All activities will occur within the operational area.
- Other relevant notifications may be made, as requested by stakeholders.
- Lighting will be used as required for safe work conditions and navigational purposes.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Accidental release – MDO (vessel collision)

A release of up to 300 m³ marine diesel oil (MDO) could occur from a collision between the activity vessels and a third-party vessel due to factors such as h

Human error, poor navigation, vessel equipment failure or poor weather. A smaller volume of MDO (~50 m³) could be released during bunkering (i.e. refuelling of the MODU).

Potential Impact

An accidental release of MDO can cause a change in water quality, a change in fauna behaviour, injury or mortality to marine fauna and an impact to other marine users.

Potential impacts include those to plankton, fish, marine turtles, marine mammals, seabirds and migratory shorebirds, commercial fisheries, and cultural heritage.

MDO is a relatively volatile, nonpersistent nature hydrocarbon with rapid evaporation on the sea-surface (typically ~36% within the first 2 hours).

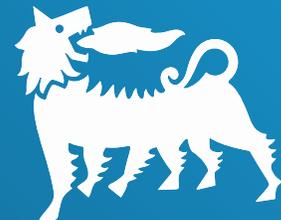
Hydrocarbon spill modelling does not predict any shoreline contact; or any contact with Marine Parks or KEFs.

Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area. There are no tourism or recreational fishing activities expected, and no Maritime Defence Exercise areas.

Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

- Pre-start notifications will be issued.
- Regulatory requirements for the prevention of vessel collisions and safety and emergency arrangements.
- Use of MDO rather than Heavy Fuel Oil (HFO) on vessels.
- In the event of an oil spill to sea, OPEP requirements will be implemented to mitigate environmental impacts.
- Response plans and equipment will be in place and maintained to manage spills to the environment (e.g., oil pollution emergency plans).
- Administrative control, such as bunkering / bulk refuelling procedures.
- Vessels selected and on-boarded are operated, maintained and manned in accordance with industry standards (Marine Orders) and regulatory requirements.
- Where required, operational and scientific monitoring undertaken in accordance with Eni's Operational and Scientific Monitoring Plan.



Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

Relevant Person Consultation

Kalumburu Community
H.A.C.C. Centre

28 August 2024

Introduction to the Eni team



Angelina Branco

Stakeholder Engagement & CSR Manager

Dan Mahney

Completions and Interventions Supervisor

Mike Prime

Stakeholder Engagement Adviser



Why are we meeting with you?

Reasons for this consultation

Why are we here?

(Reason for this consultation)



- ❑ **Meeting people in our footprint is a part of how we like to work**
 - It's good corporate social responsibility
 - We can learn about and respond to community interests and requests
 - It helps identify those interested in our activities
 - It sometimes creates partnership opportunities

- ❑ **We're specifically here to consult on the preparation of the Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan**
 - This includes relevant and interested individuals, groups and communities (relevant persons)
 - We want to provide relevant persons with face-to-face opportunities to give us feedback directly
 - We want to understand the impacts, risks and opportunities linked to our activities in our footprint

Why are we here?

(Reason for this consultation)

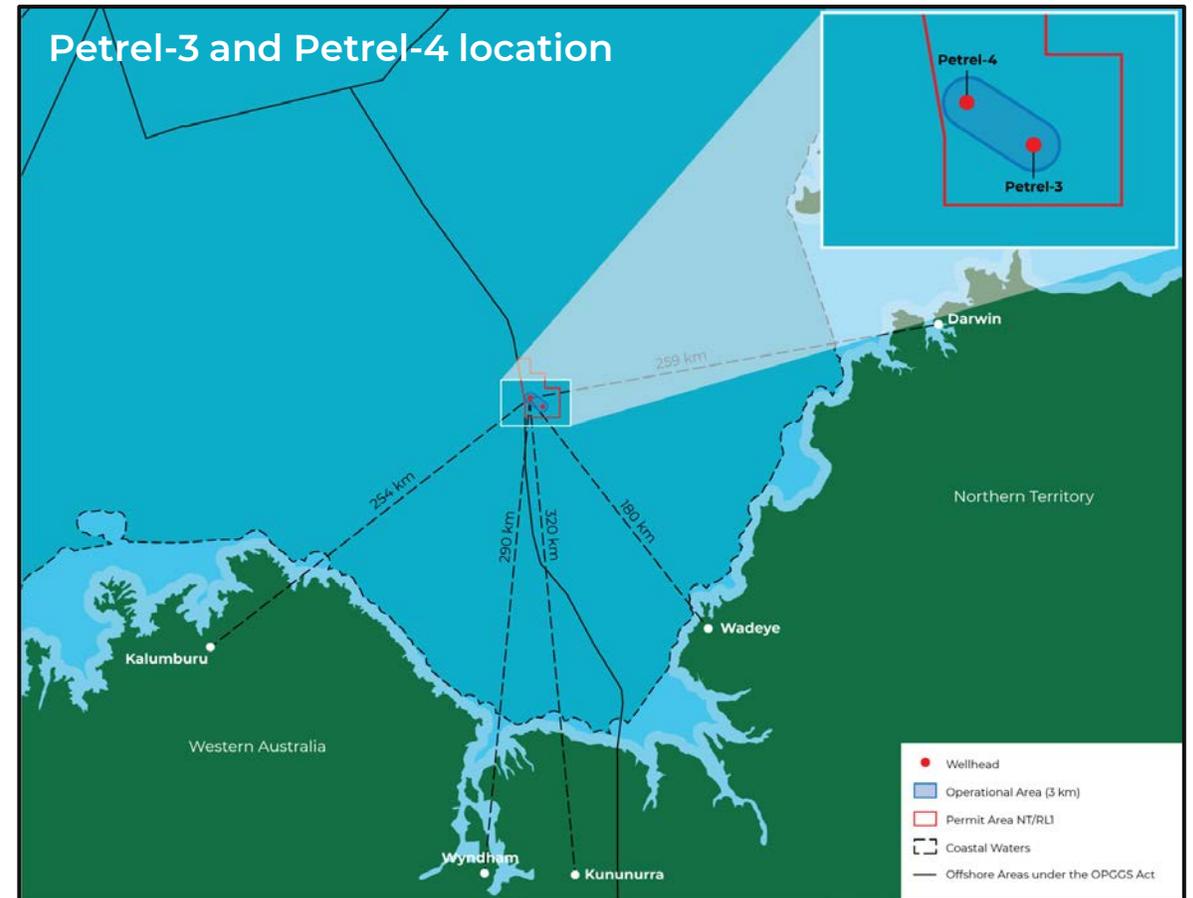
□ We work close by to you

- We want to be good neighbours
- We can learn from you
- We can tell you what we are doing
- It could be good for both of us

□ We're here to Talk about Petrel

Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan

- We must talk to people linked to our activities
- We like to do it face-to-face so we can hear what you have to say
- We want to make sure what we do creates no problems for you



What is a relevant person?



An individual, organisation, department or agency that may have functions, interests or activities that overlap the area where the Petrel Operations may affect

- 25.1.a each Commonwealth, State or Northern Territory agency or authority to which the activities to be carried out under the Environment Plan may be relevant,
- 25.1.b if the plan relates to activities in the offshore area of a State - the Department of the responsible State Minister,
- 25.1.c if the plan relates to activities in the Principal Northern Territory offshore area - the Department of the responsible Northern Territory Minister,
- 25.1.d a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the Environmental Plan,
- 25.1.e any other person or organisation that the titleholder considers relevant.

Kalumburu Relevant Persons

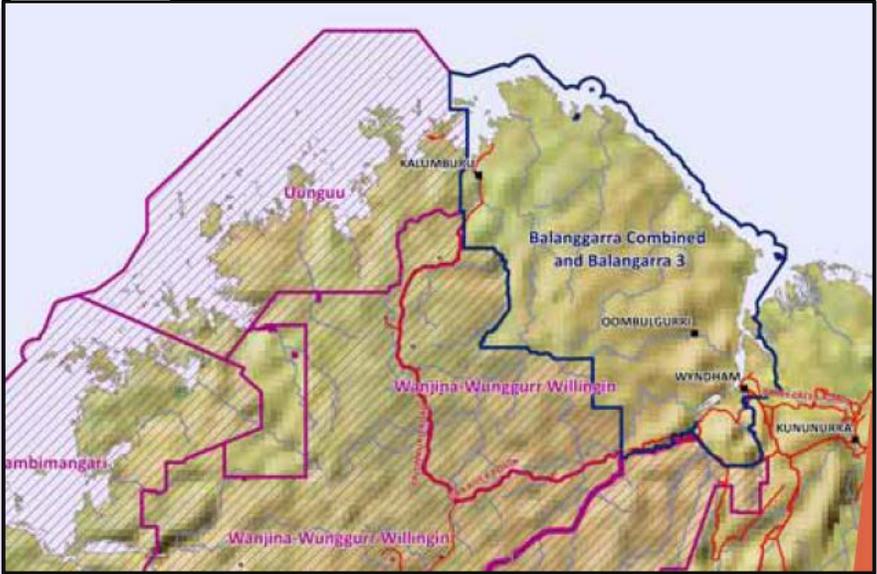
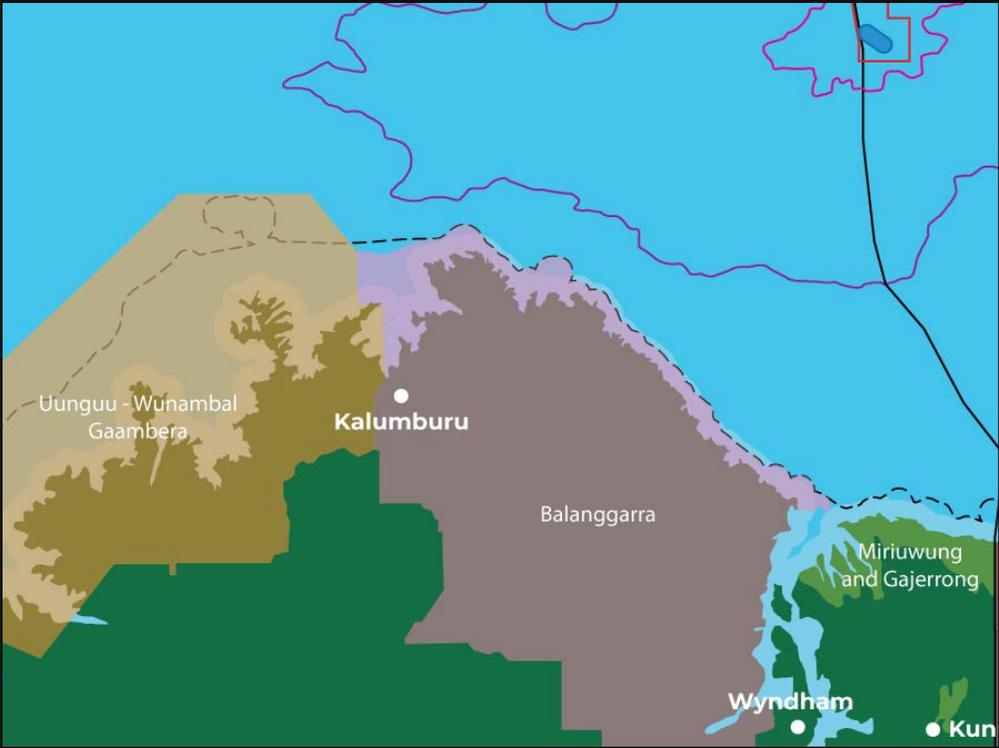


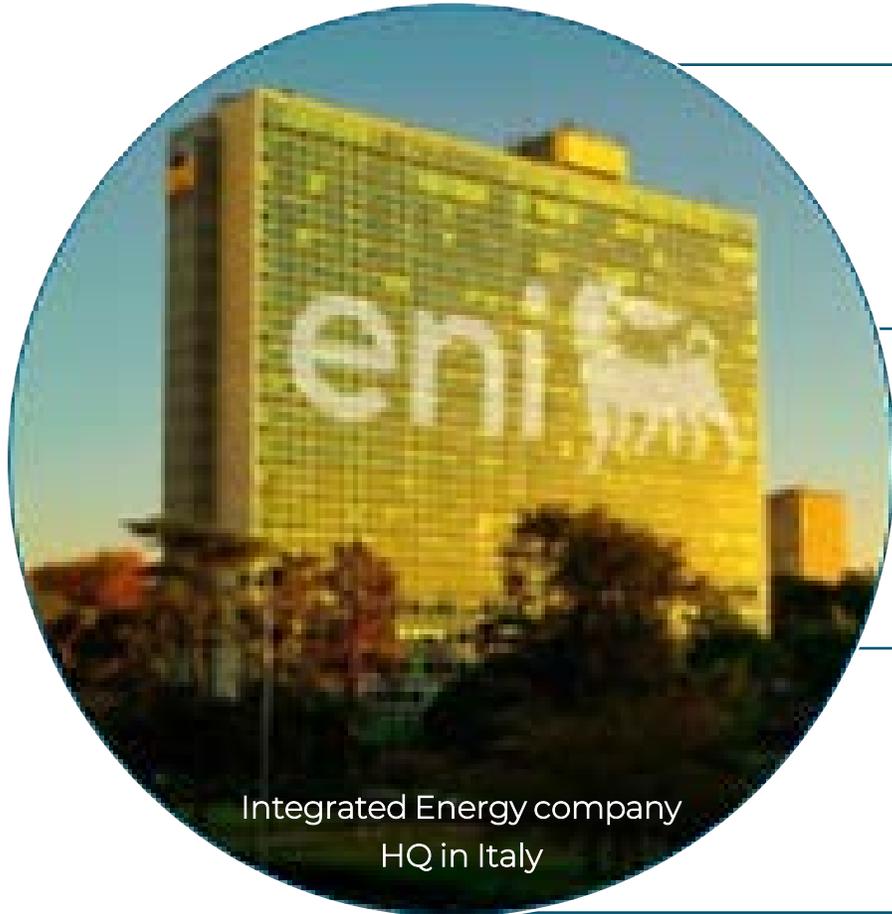
Figure 3: Graa wilye in Wunambal Gaambera Country



About Eni

Eni in Australia & Timor-Leste

Introducing Eni SpA



Integrated Energy company
HQ in Italy



Works in 61 countries
32K+ employees globally



101 employees in Australia & Timor-Leste



Eni believes in contributing to community
in places it operates

<https://www.eni.com/en-IT/sustainability/our-commitment.html>



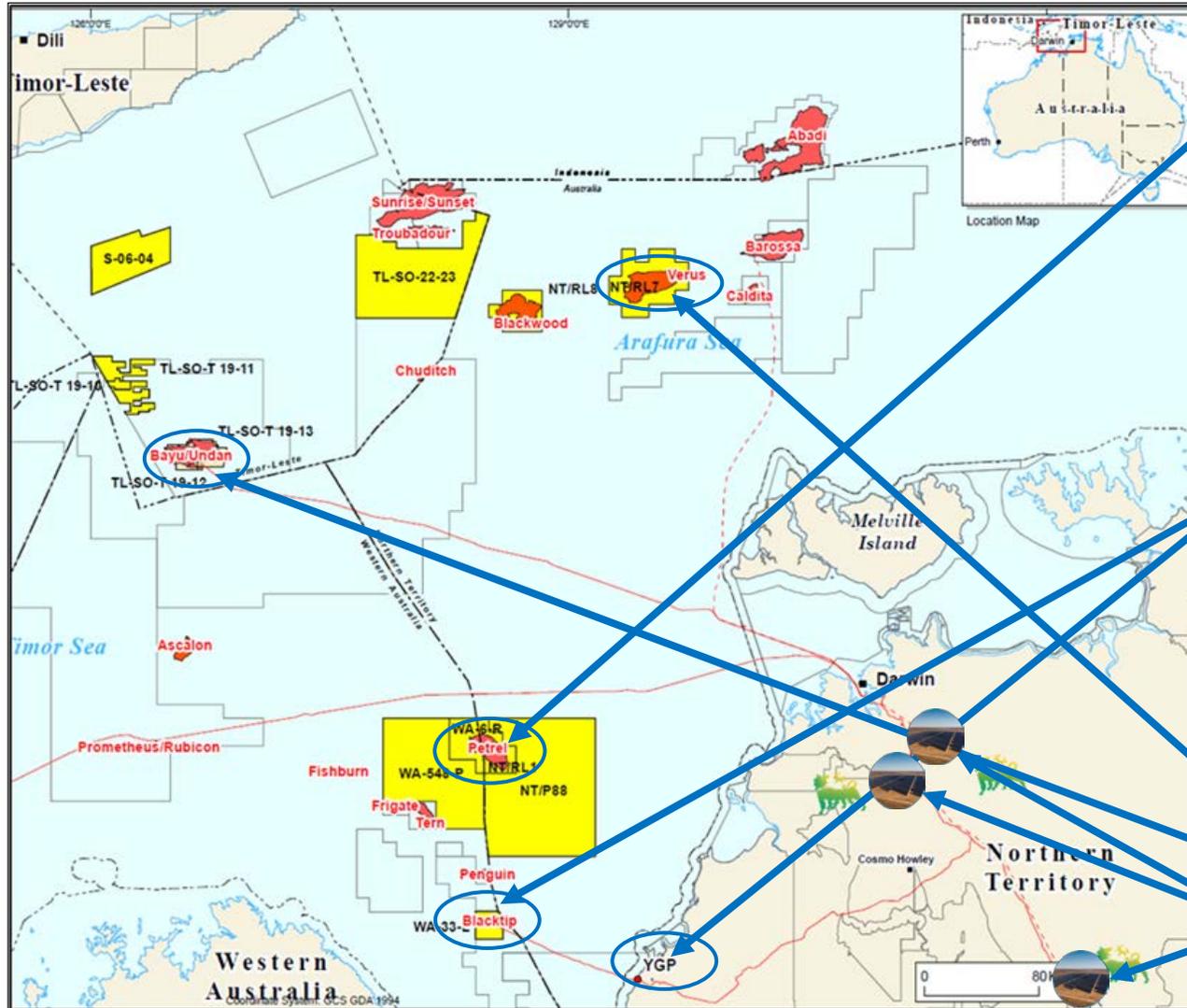
Offices:
Perth,
Darwin,
Yelcher Gas Plant (Wadeye)
Dili (Timor-Leste)



Where we Work

Australia and Timor-Leste

Eni in Australia and Timor Leste



Petrel Monitoring & Decommissioning

- Permit acquired by Eni Feb. 2024 - contains two subsea wells
- A need to decommission (plug and abandon) existing Petrel-3 and Petrel -4 subsea wells

Blacktip and YGP Gas Production

- Providing almost all the Territory's gas needs to generate electricity for homes, industry and business
- Providing 100% of gas supply to Wadeye for power generation (since 2021)
- New drilling activity to occur in Q4 2024

Other Projects

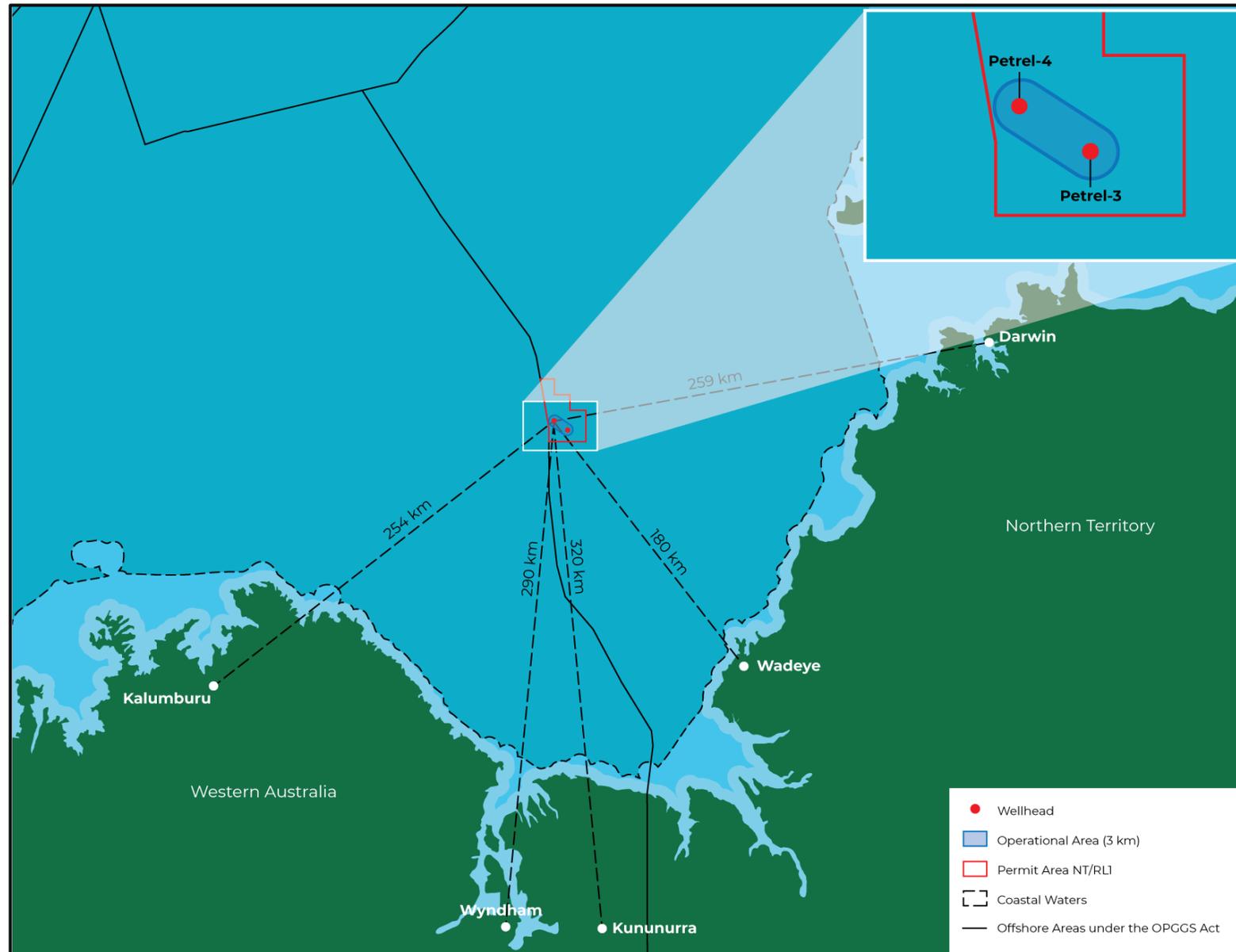
- Verus (Offshore)
- Bayu-Undan Gas Field and DLNG (11% Eni)
- Renewables – 3x Solar Plants with total capacity 59 Megawatts (Katherine, Batchelor, Manton Dam)



Petrel

Petrel-3 and Petrel-4 Monitoring and Decommissioning Activities

Petrel-3 and Petrel-4 location

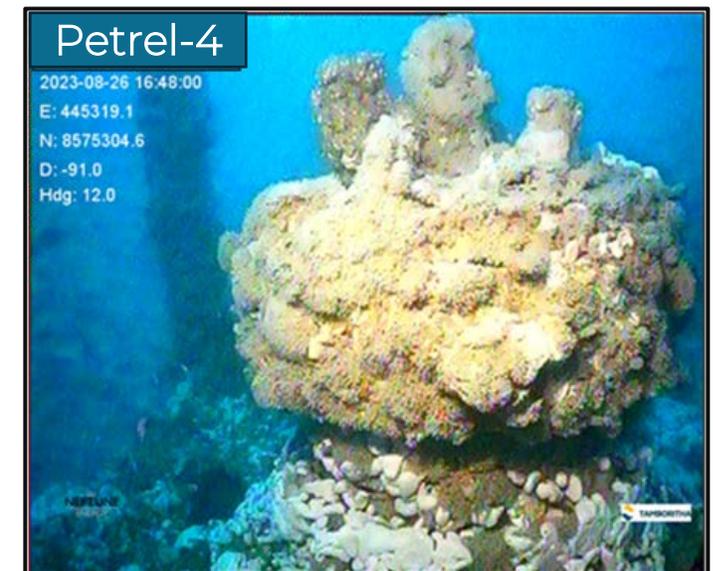
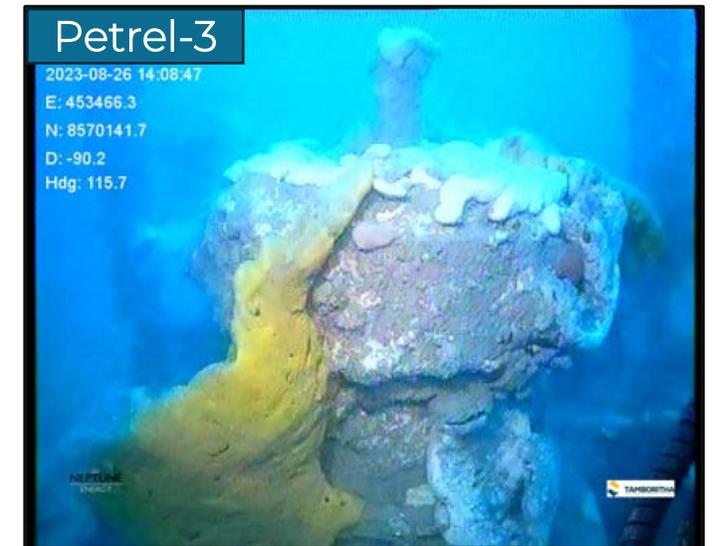


P3 and P4 Monitoring and Decommissioning Project



Summary of Project Activities

- 1) General Visual Inspection
- 2) Geotechnical and Geophysical Surveys
- 3) Pre-abandonment Vessel Campaign
- 4) Decommissioning of Petrel-3 and Petrel-4 (P&A)
- 5) Post Decommissioning 'as-left' Survey

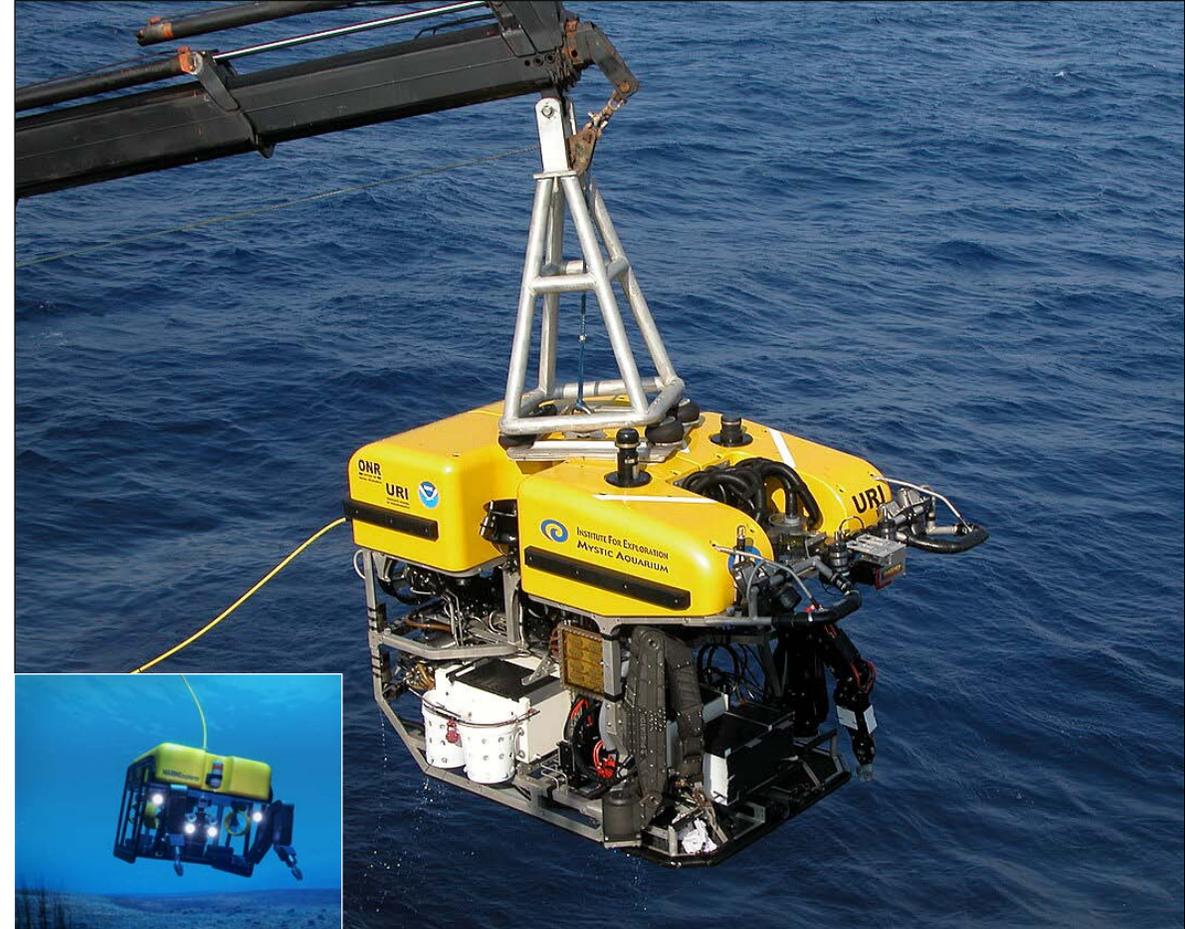


General Visual Inspection



Preparation for decommissioning requires a visual inspection of subsea wells

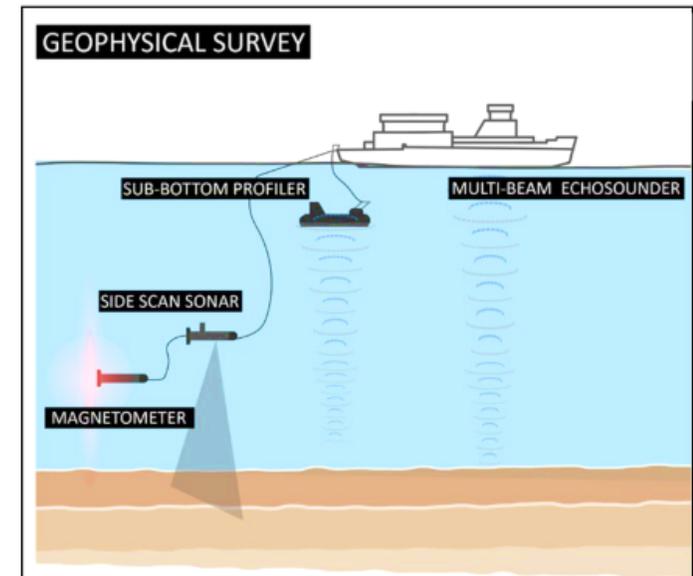
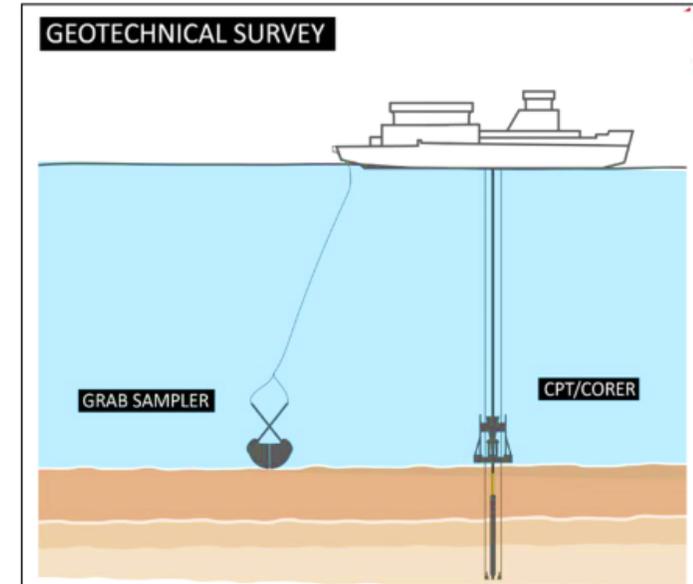
- ❑ Anticipated to be conducted Q4 2024 (then annually)
- ❑ Final timing subject to vessel/rig availability and weather
- ❑ Inspection surveys performed using Remote Operated Vehicles (ROV) that are deployed from contracted vessels
- ❑ Marine growth removal may be done to adequately assess condition of wellheads (high-pressure hose in-situ saltwater)
- ❑ Potential removal and replacement of the corrosion cap (with 3D camera/laser scanning)
- ❑ May also include the geophysical and geotechnical surveys



Geotechnical and Geophysical Surveys

... to assess below the seabed

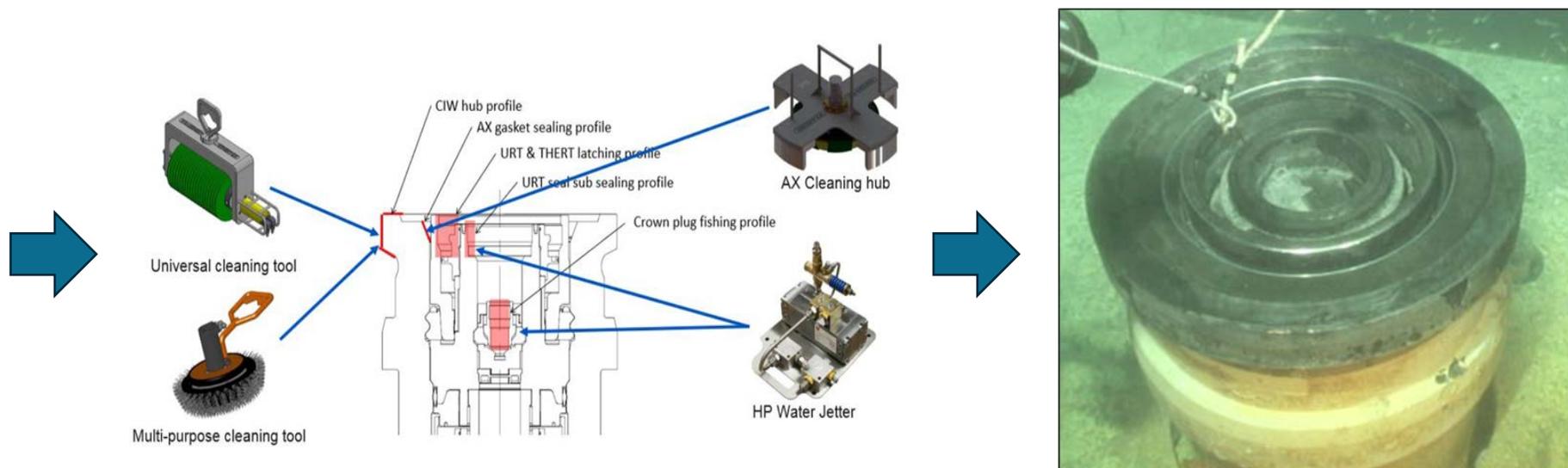
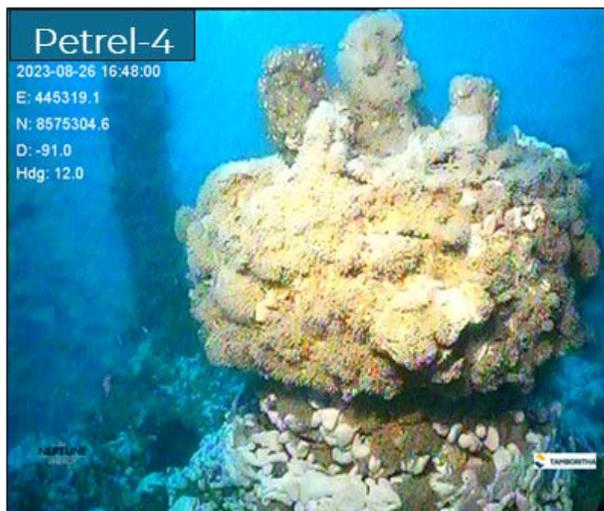
- ❑ Undertaken so that we can understand the seafloor surface,
 - to identify features and hazards
 - to allow for seabed stability testing
 - to best position the mobile offshore drilling unit (MODU)
- ❑ Approximately 60 days to complete surveys for both wells
 - geophysical survey 20 days / well
 - geotechnical survey 10 days / well
- ❑ Various acoustic and magnetic techniques may be used (e.g. side-scan sonar, multi-beam echo sounder)
- ❑ This is not the same as 3D seismic surveys
- ❑ Core hole sampling (2.4m² per well) also completed to inform engineering designs





Pre-Abandonment Campaign

- Only if required
(if we do a full visual, cleaning and inspection survey then already done)
- Removal of corrosion caps
(marine growth removal first - mechanical / chemical cleaning (brushes/scraper)
- A small volume of seawater and biocide may be released when removing the corrosion cap
(less than 1m³ - trapped under the cap)
- 3D external scan of the wellheads by a camera or laser
- Scanning will be two hours duration per well

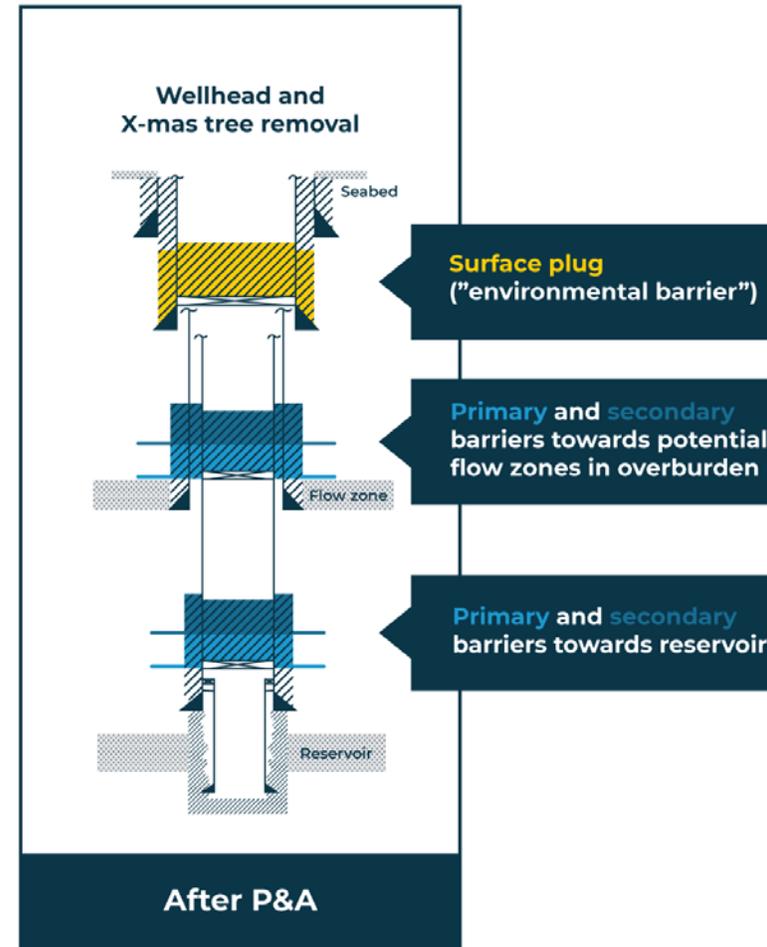


Decommissioning - Plug and Abandonment (P&A)

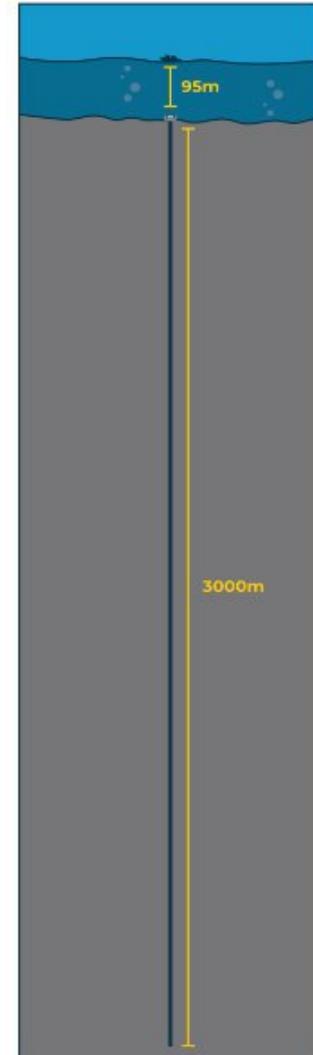


Permanent isolation of the reservoir and removal of infrastructure

- ❑ Wells previously suspended in 1980s
- ❑ Single campaign with contingency for second campaign if required
- ❑ Rig configuration to be determined – based on feasibility, availability and weather
- ❑ Reservoir will not flow unaided, loss of well control is not considered possible
- ❑ A small volume of trapped gas (1m^3) and small volumes of cement and/or milling fluids may be released during P&A
- ❑ Infrastructure removal options under consideration in consultation with Regulator



Example only

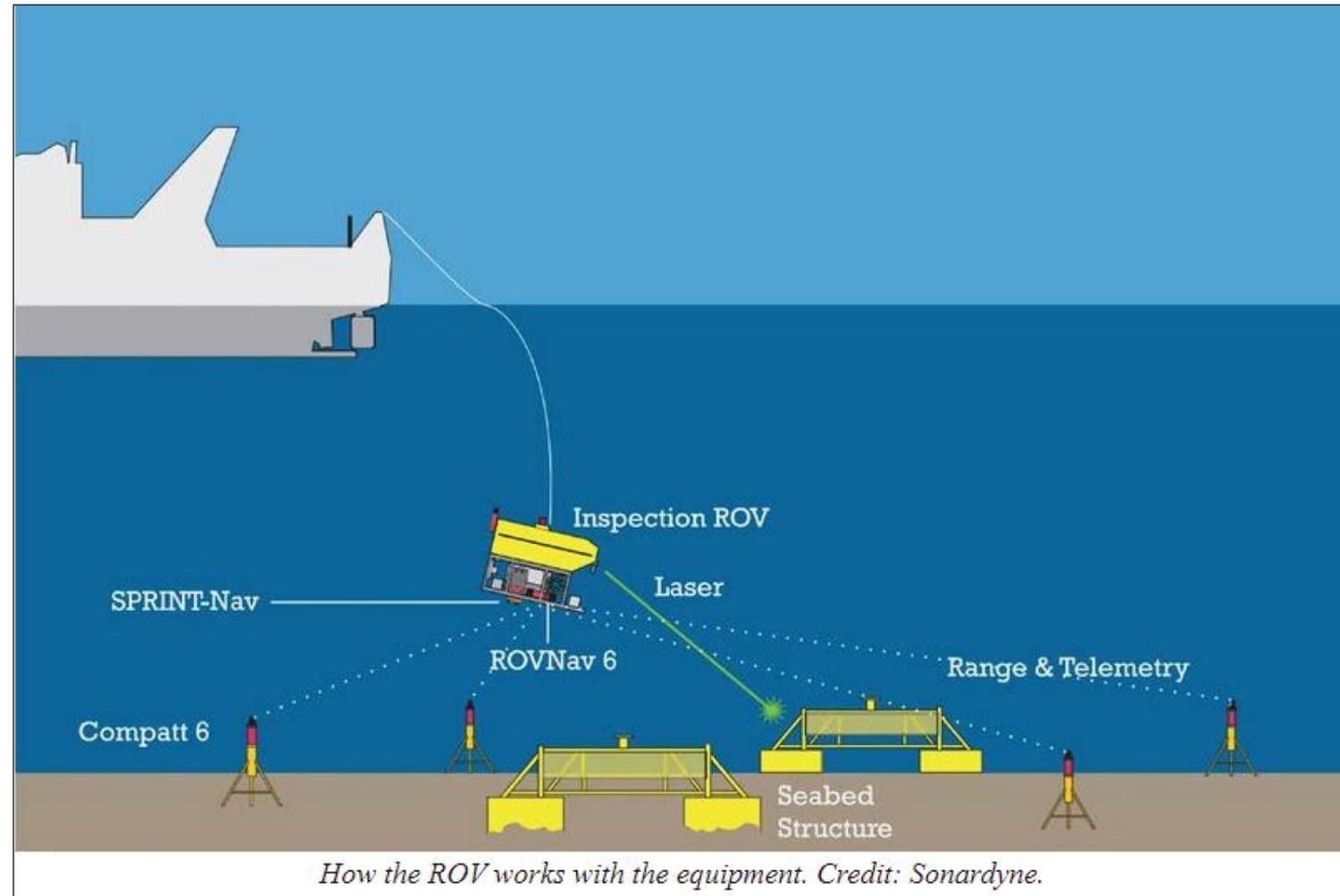


As Left Survey

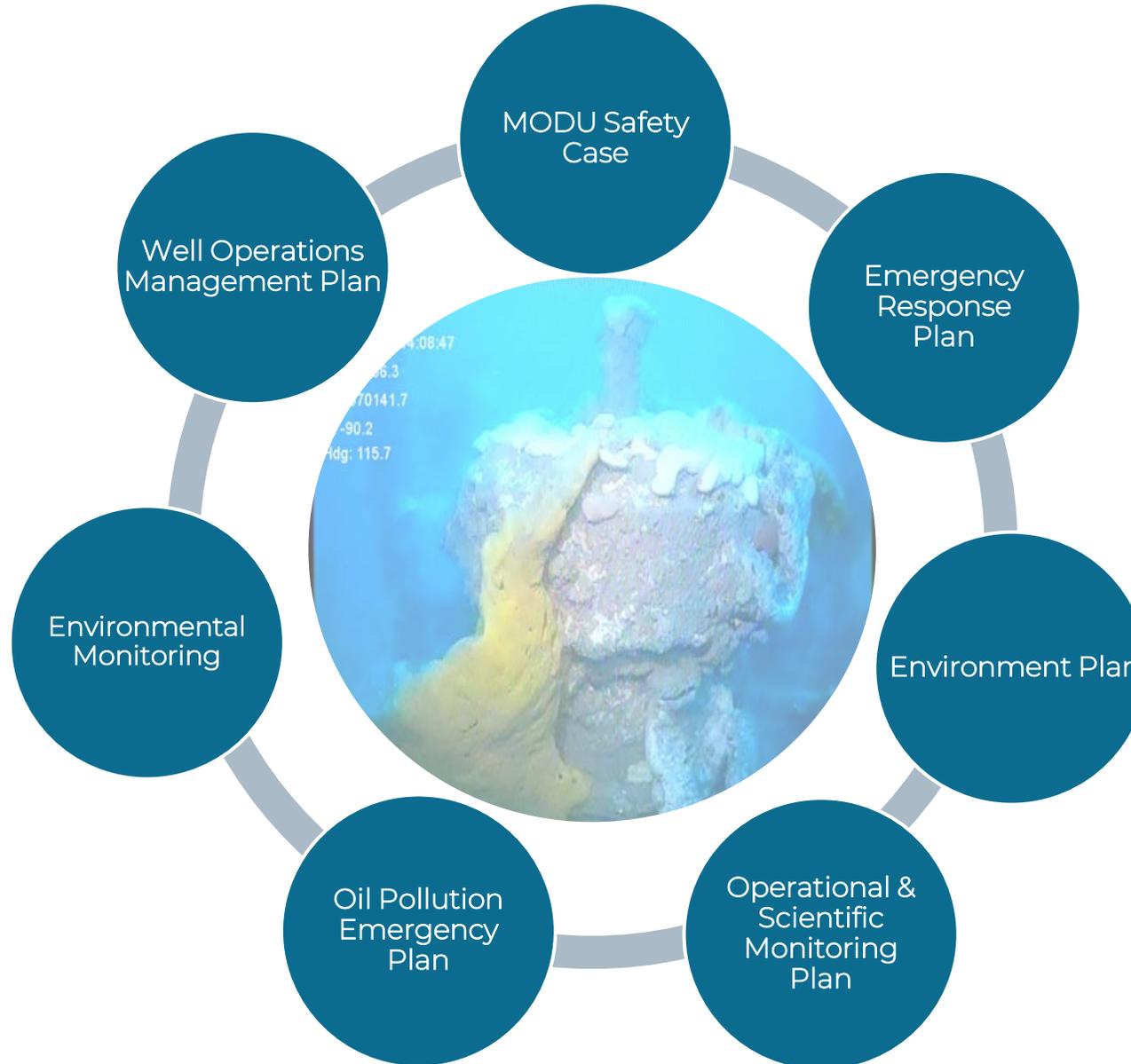
Final inspection after completed works



- ❑ Visual inspection of seabed where MODU was located using an ROV
- ❑ Documentation of seabed state after the P&A campaign
- ❑ Survey occurs before MODU leaves the field



Operator Requirements



Potential Environmental Impact & Mitigation Measure

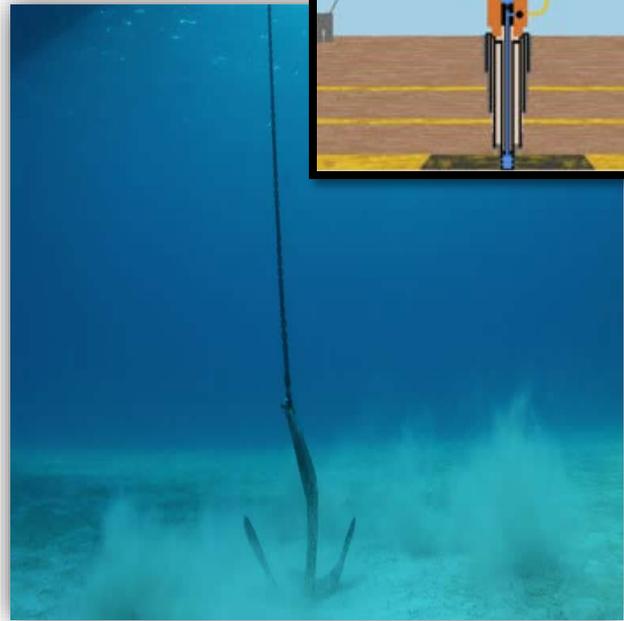
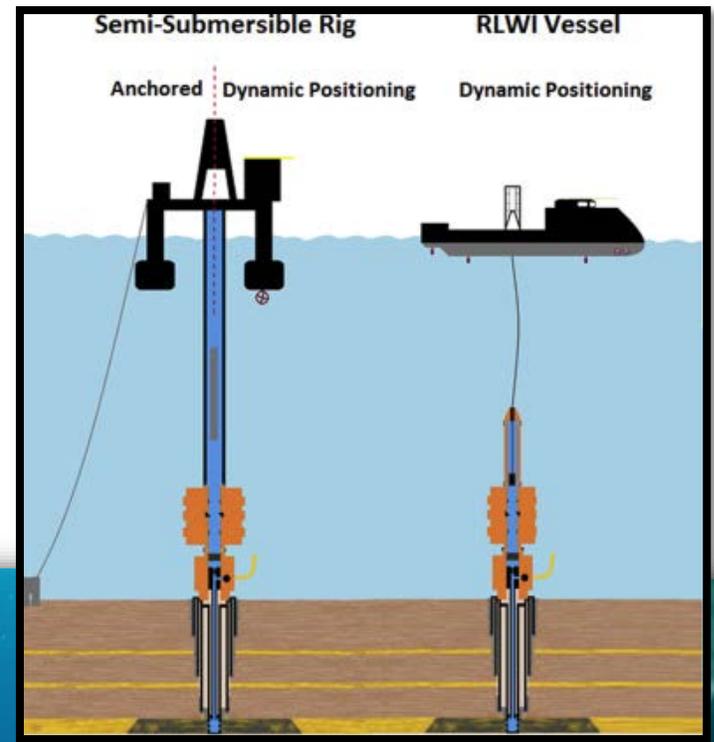
Planned Impacts



Planned Event
Seabed disturbance
Physical interaction
Equipment in-situ
Atmospheric emissions and greenhouse gas
Noise emissions Continuous
Noise emissions Impulsive
Light emissions
Planned discharges Routine
Planned discharges Decommissioning

- No waste incinerator
- Bulk transfer to avoid frequent accidental spillage
- Regular machinery maintenance
- Navigation equipment and procedures
- Maritime notices and notifications as requested

- Implement controls to reduce interactions with marine fauna.
- Lighting for safety & navigation work
- All routine marine discharges managed according to legislative requirements



Potential Environmental Impact & Mitigation Measure



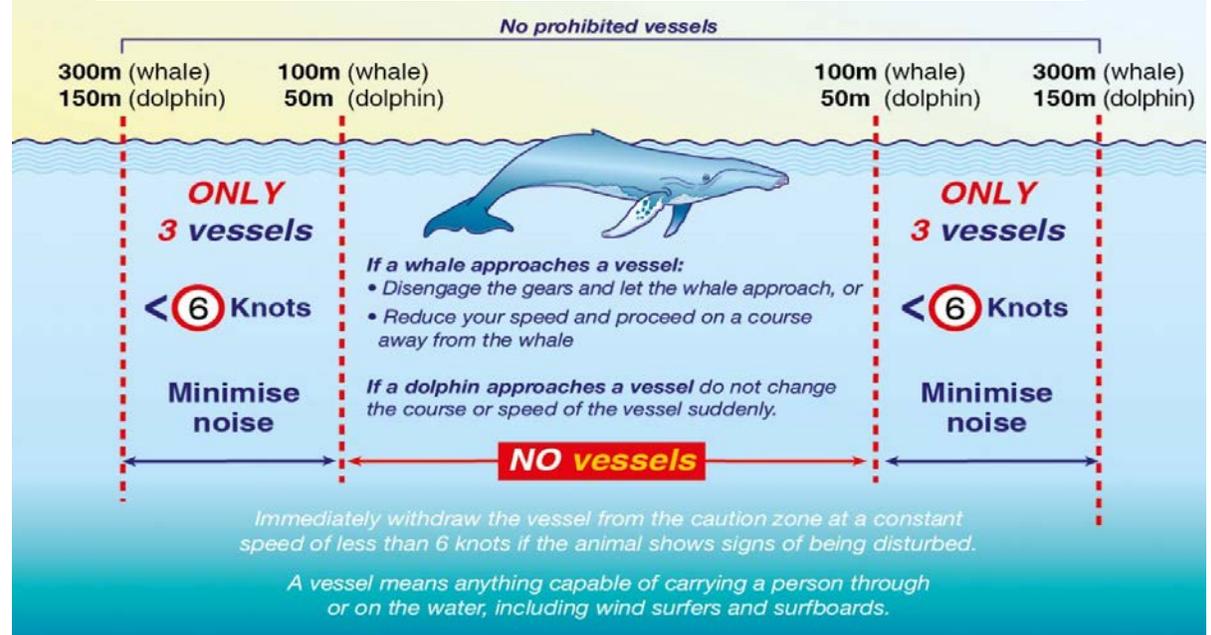
Unplanned Impacts

- Unplanned Event
- Interaction with other marine users – equipment in-situ
- Marine fauna interaction
- Introduction of marine pests
- Accidental release – waste and solid objects
- Accidental release – minor loss of containment
- Accidental release – MDO (vessel collision)

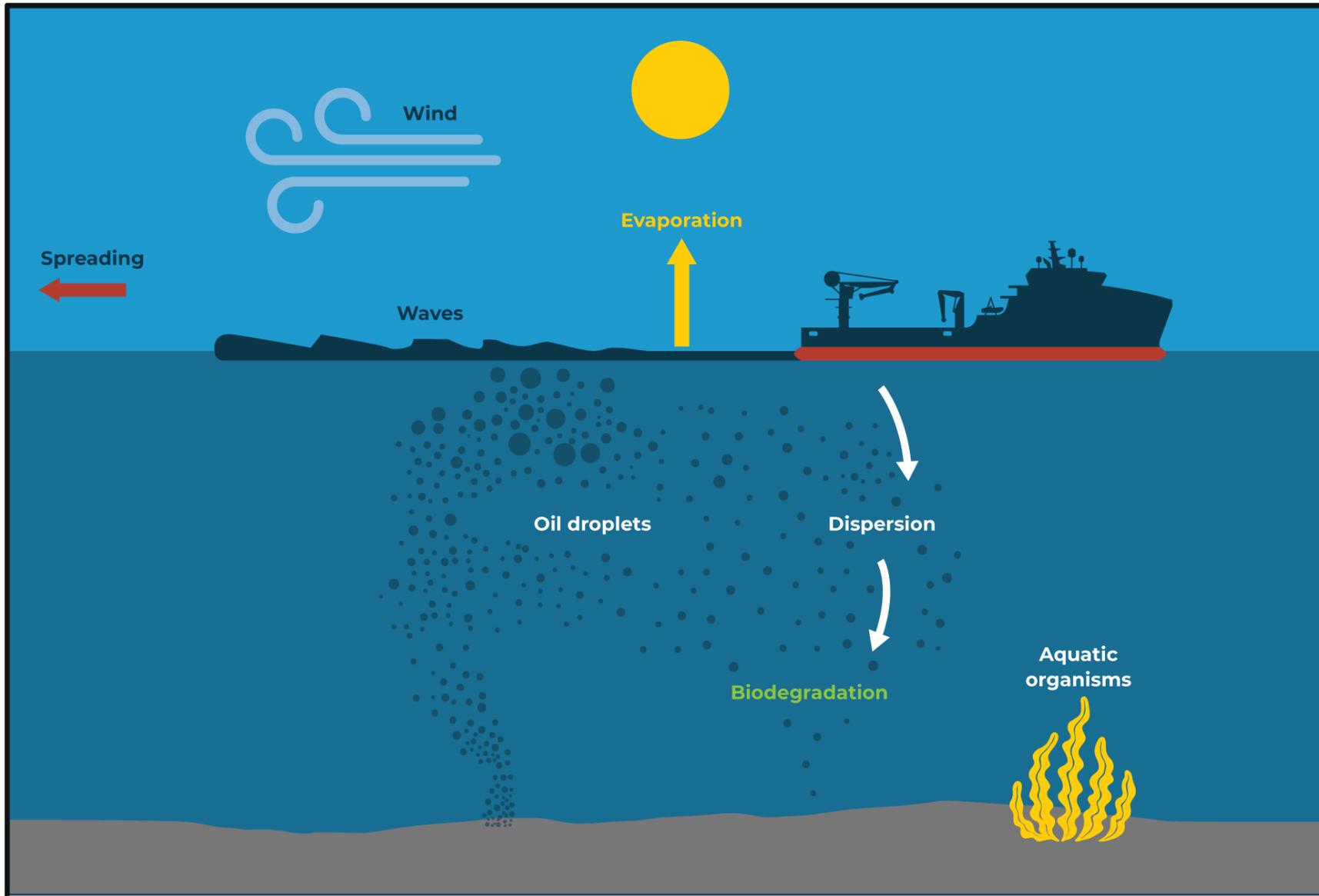
Wellheads are charted on AHO nautical charts so that marine users are aware of their location

Observations of the surroundings will be undertaken from the vessel/s for marine fauna

All vessels will be assessed and managed as appropriate to prevent the introduction of marine pests.



Accidental Release - Oil Spill Modelling



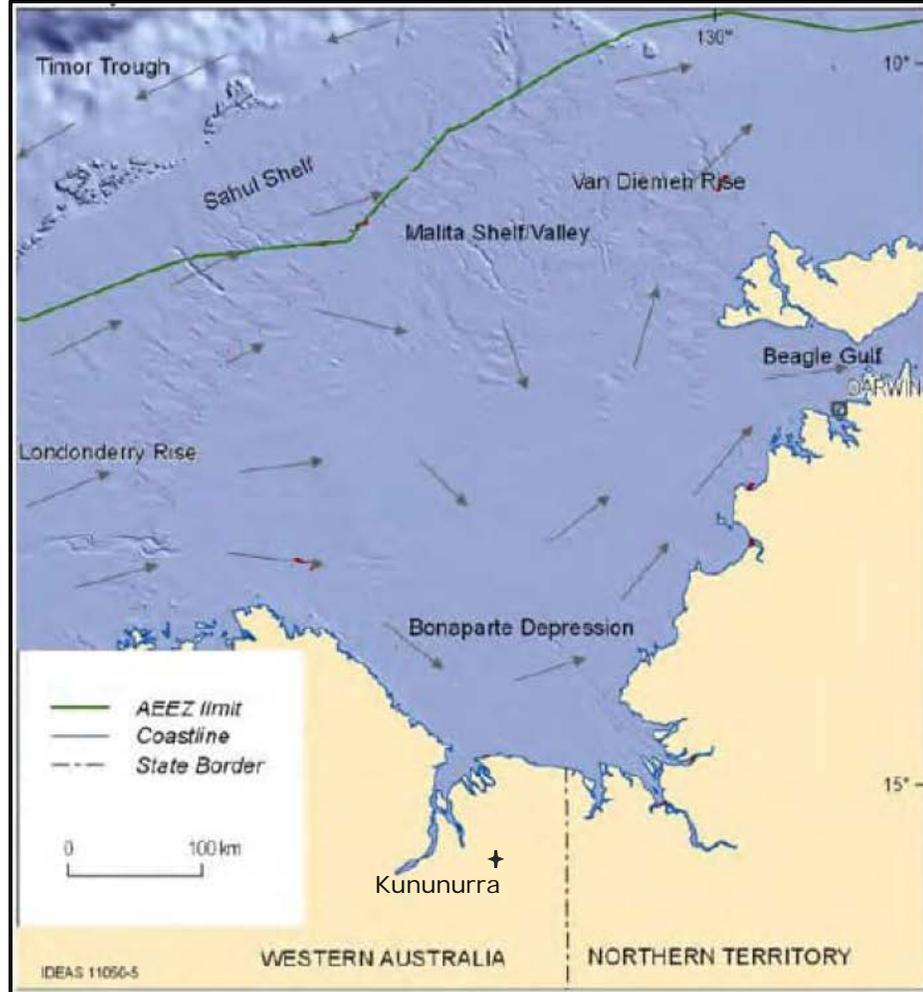
Other oil spill modelling considerations:

- Degradation
- Emulsification
- Sedimentation
- Dissolution
- Photo-oxidation

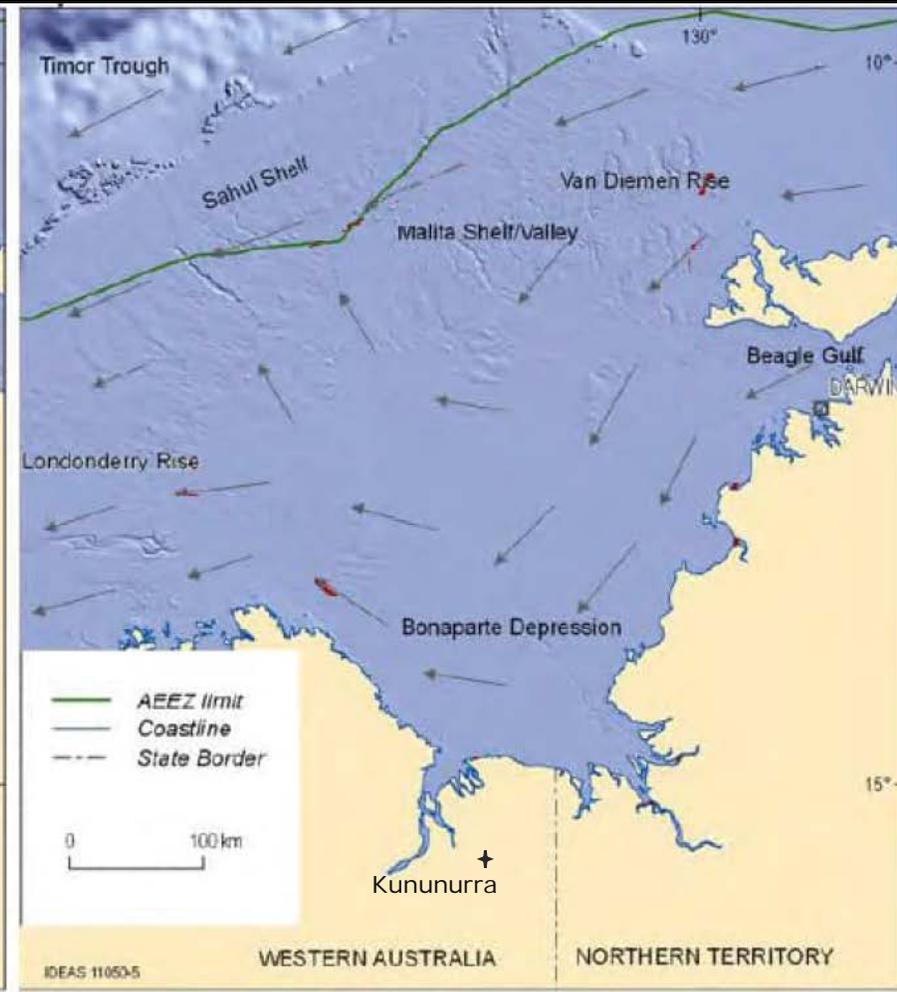
Petrel – Oceanography wind driven currents



January



July



Wind Currents

Summer – main direction towards south-east driven by monsoon winds

Winter - main direction towards north-west driven by trade winds

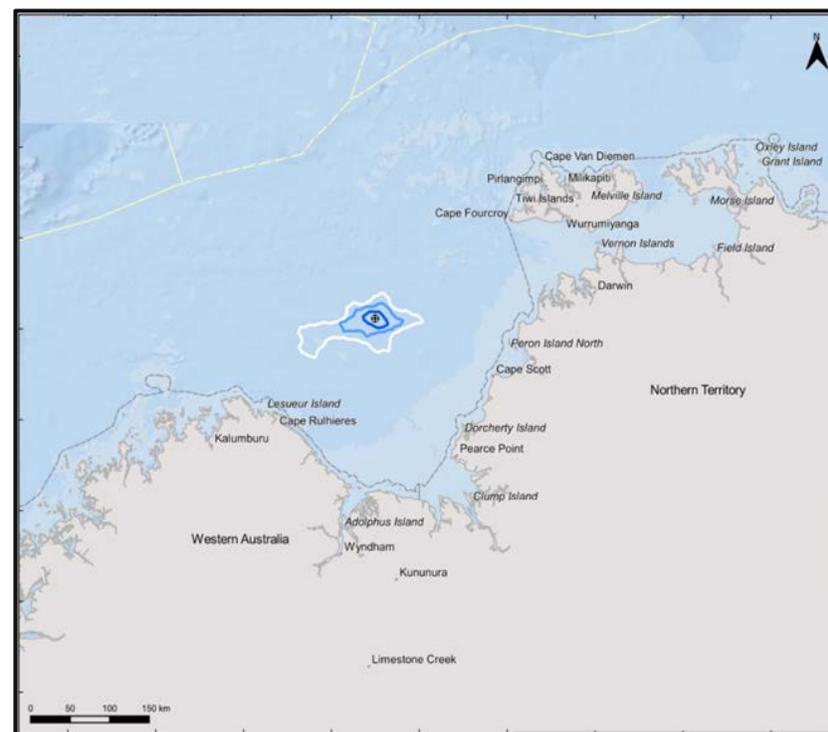
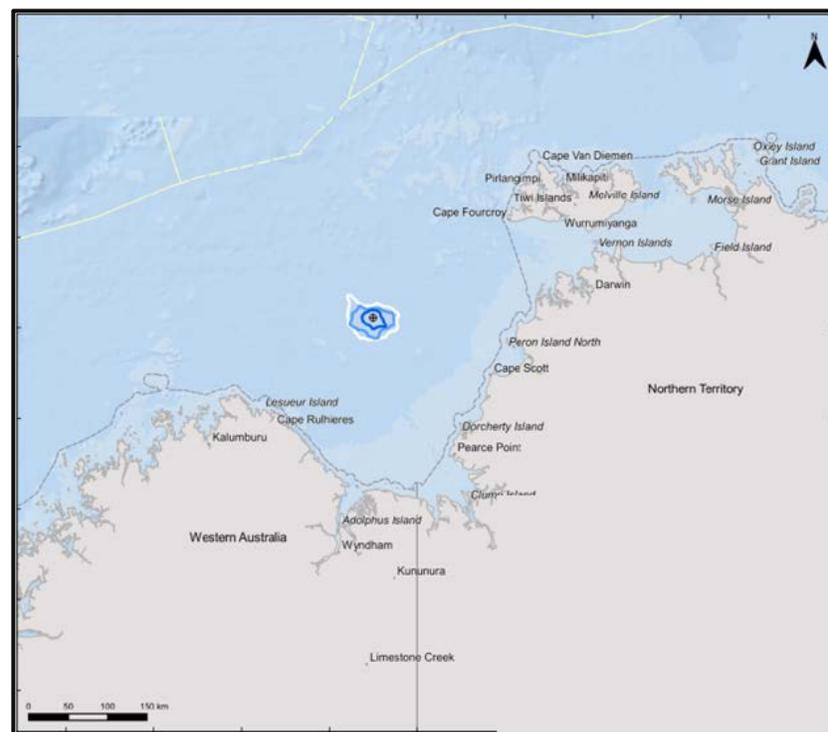
Nearshore currents become more longshore. Westerly in winter and easterly direction in summer

Very nearshore currents heavily influenced by local topography. Local clockwise and anti-clockwise on ebb and flood

Seasonal potential floating oil exposure



Zones of potential floating oil exposure from a surface vessel spill during summer and winter conditions

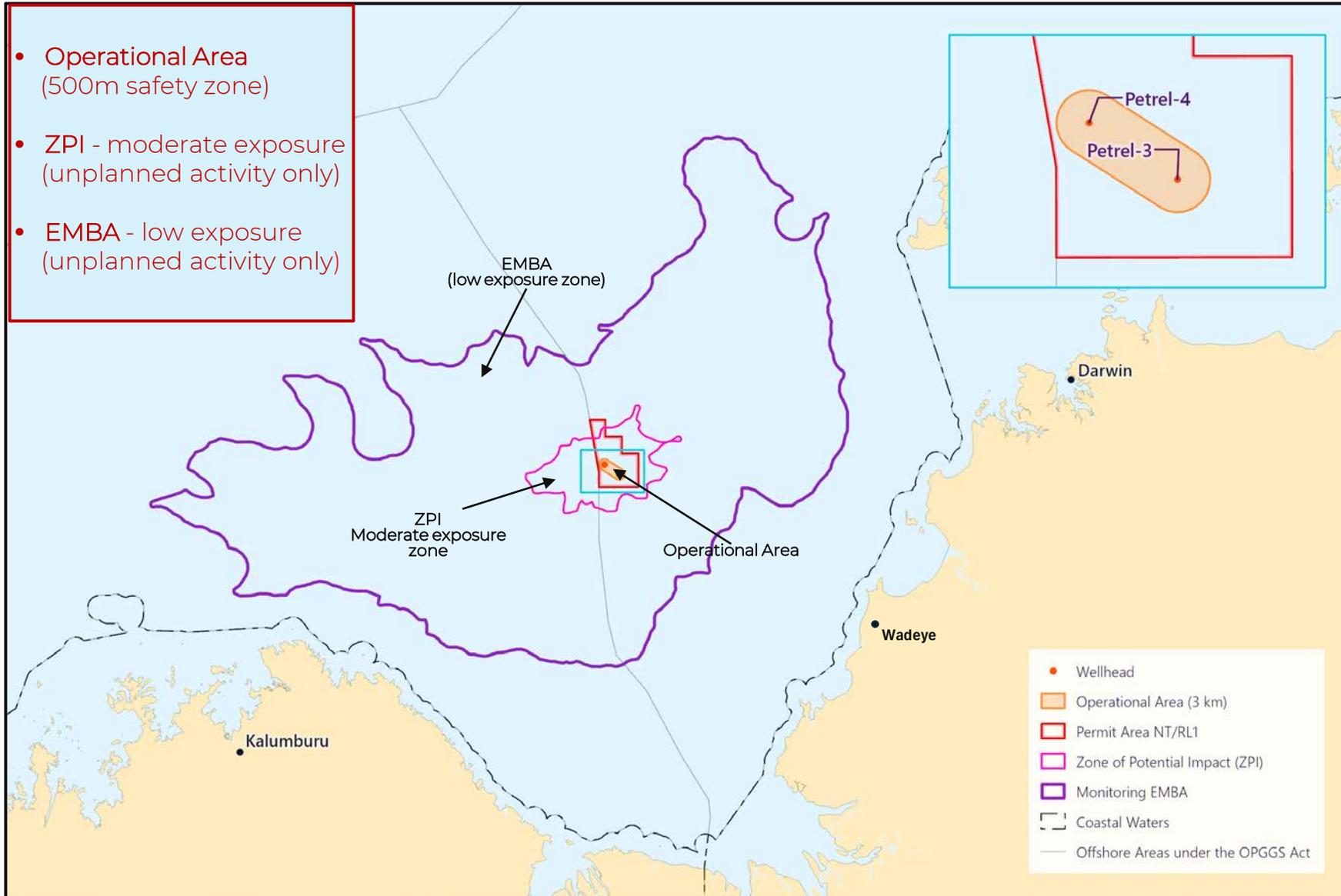


Summer Potential Floating Exposure Scenario of 300m³ surface release of MDO 100 spill simulations

Transitional Potential Floating Exposure Scenario of 300m³ surface release of MDO 100 spill simulations

Winter Potential Floating Exposure Scenario of 300m³ surface release of MDO 100 spill simulations

Activity EMBA - Marine Diesel Oil



- Operational Area (500m safety zone)
- ZPI - moderate exposure (unplanned activity only)
- EMBA - low exposure (unplanned activity only)

Probability

- The likelihood of a vessel collision is considered rare

Control measures

- Navigation equipment and procedures
- Vessel emergency management plan
- Refueling transfer procedures
- Oil Pollution Emergency Plan
- Oil Spill Management Plan

Floating oil exposure

- 1g /m³ (low)
- 10g /m³ (moderate)
- 50g /m³ (high)

Evaporation / decay rate

- 36.1% evaporation (constant wind)
- MDO decays at a higher rate of 3% per day

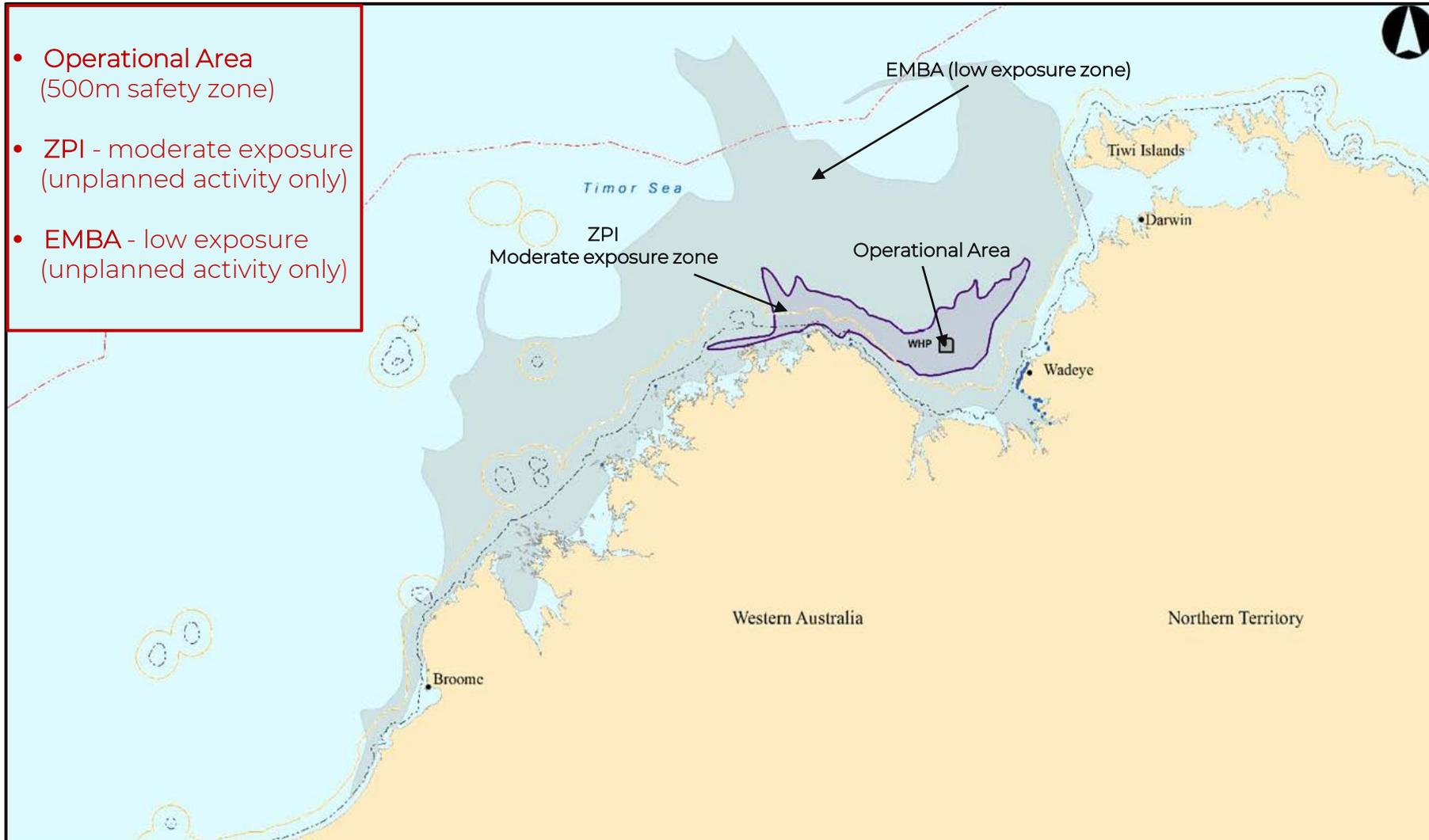
Ecological impact onshore

- No shoreline contact.

Traditional Owners



EMBA from previous Blacktip Drilling EP consultation



- Operational Area (500m safety zone)
- ZPI - moderate exposure (unplanned activity only)
- EMBA - low exposure (unplanned activity only)

- Preventative controls
- Unplanned event only if BOP fails
- ERP Activation
- High evaporation rate



Our Community Work Globally

Community Development - Sustainable Development Goals

Eni's Mission



Global Goals For Sustainable Development

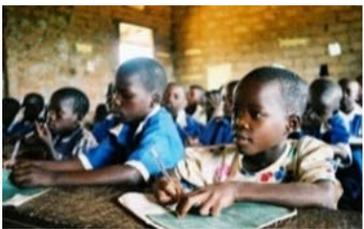
The 2030 Agenda for Sustainable Development presented in September 2015, identifies 17 Sustainable Development Goals (SDGs) which represent the common targets of sustainable development on the current complex social problems. These goals are an important reference for the international community and Eni in managing activities in those countries in which it operates.



Global Community Programs



6 SECTORS OF INTERVENTION

ACCESS TO ENERGY	LIFE ON LAND	ECONOMIC DIVERSIFICATION & GOOD FARMING	ACCESS TO WATER & SANITATION	EDUCATION & VOCATIONAL TRAINING	HEALTH
					

Promoting the Respect of Human Rights and Transparency along the business lifecycle



Supporting National Development Plans also through Public Private Partnerships



Adopting International Organizations' standards, methodologies and tools



Our Community Work On Country

Local Community Development - Thamarrur Country

(Obtained permission to use pictures)

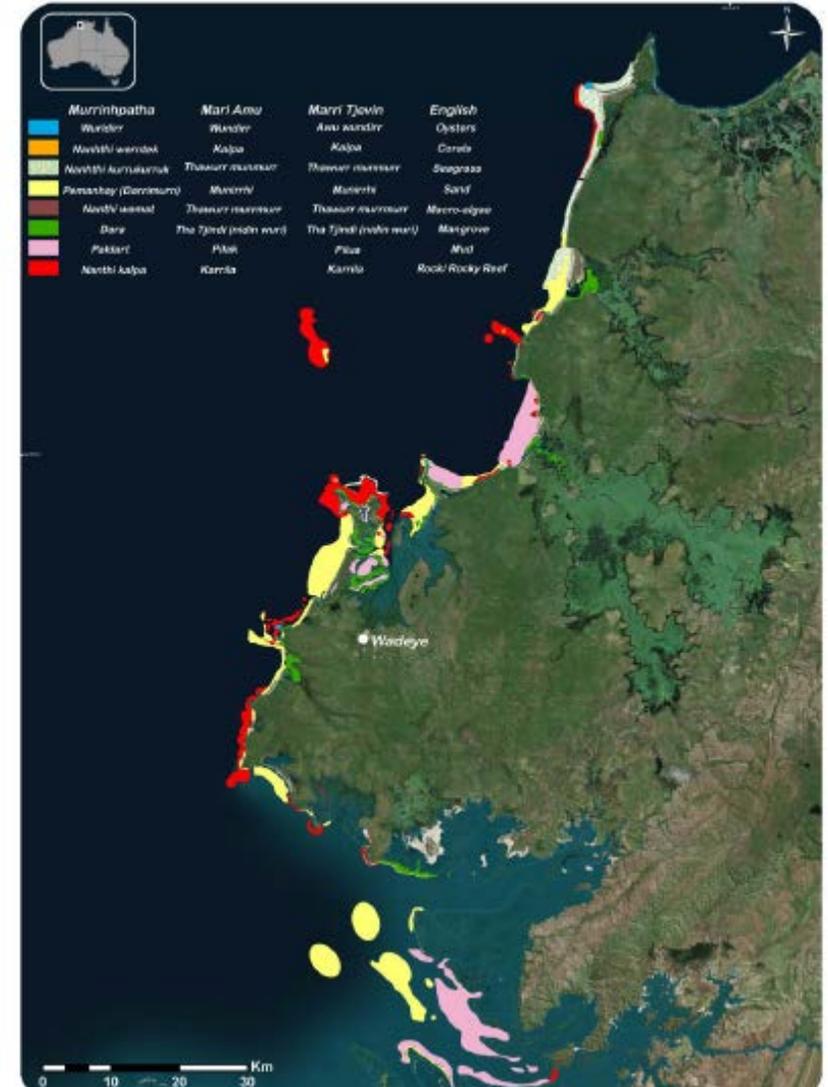
Eni's Local Contribution



Participatory Mapping with TOs & Rangers



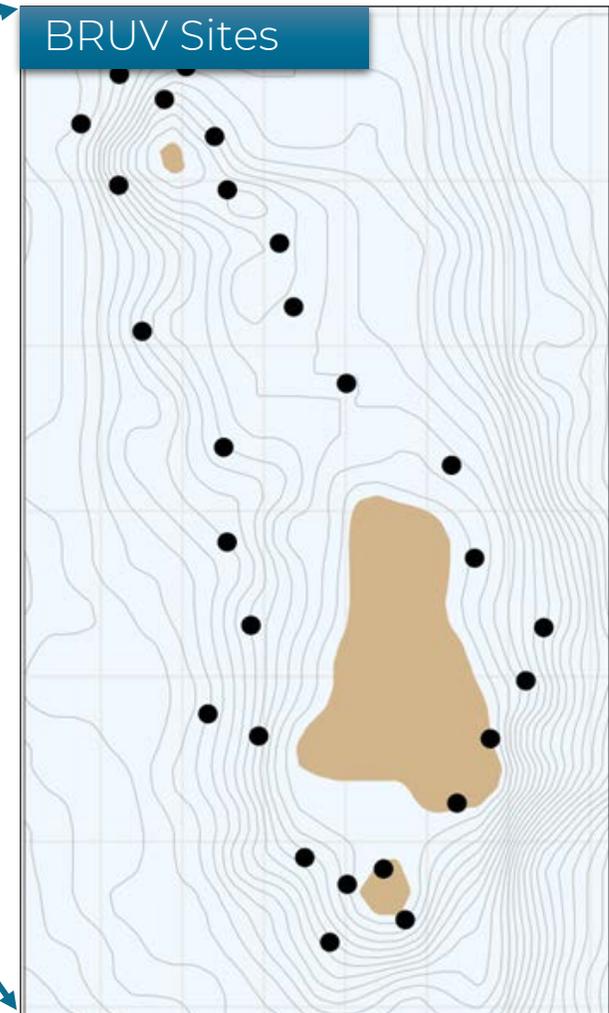
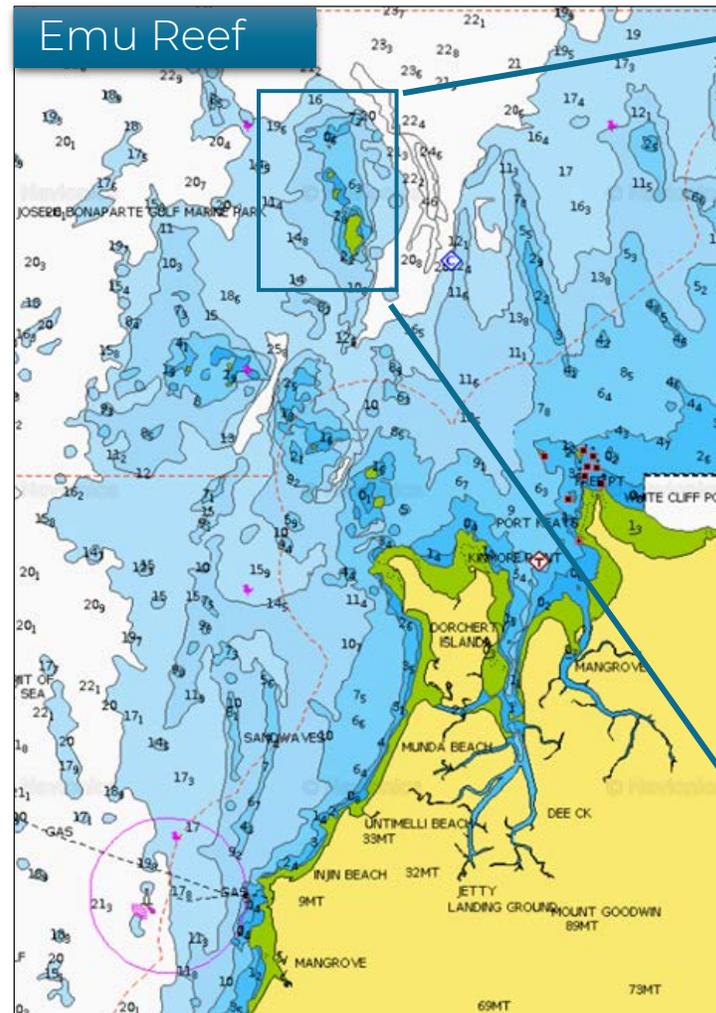
Thamarrurr Sea Country Habitat Map



Eni's Local Contribution



Baited Remote Underwater Video Training & data collection



Eni's Local Contribution



Shellfish & Sediment Monitoring with Rangers



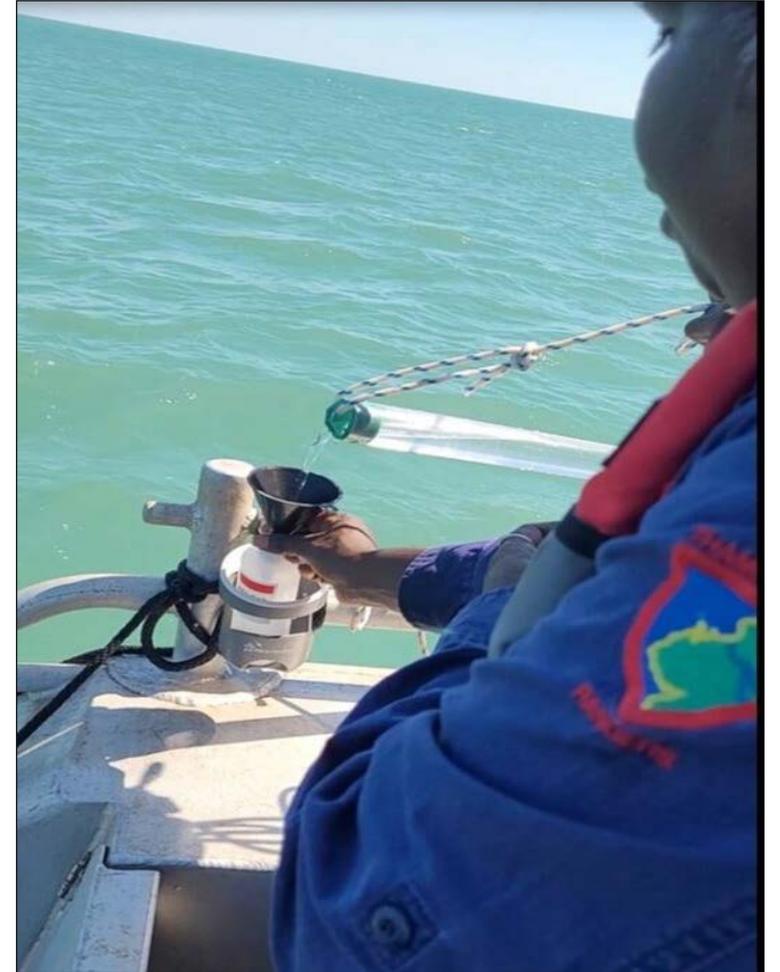
SPM Monitoring by Rangers



Eni's Local Contribution



Water Sampling Training with AIMS





Where To From Here

Consultation

Where to From Here . .



- ❑ Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan consultation commenced on 19 June 2024 and, at this stage, will be continuing until end August 2024
- ❑ If you would like to seek more information, get further clarification, or request another meeting, please contact us through info@petreleni.com.au; phone us on 1300 155 616; or visit our website at petreleni.com.au.
- ❑ The Petrel-3 and Petrel-4 Monitoring and Decommissioning Environment Plan is expected to be submitted to NOPSEMA by the end of August 2024
- ❑ Any other Questions?

Where to From Here ..



- ❑ You can contact us about this any time, but would be good to hear any information before September 15
- ❑ (We are submitting the EP by end of September)
- ❑ Talk to Bevan, Madeline or Darryl and they can get your message to us.
- ❑ Call us on 1300 155 616 or email us at info@petreleni.com.au
- ❑ Any other Questions?



Thank you

Decommissioning - Plug and Abandonment (P&A)

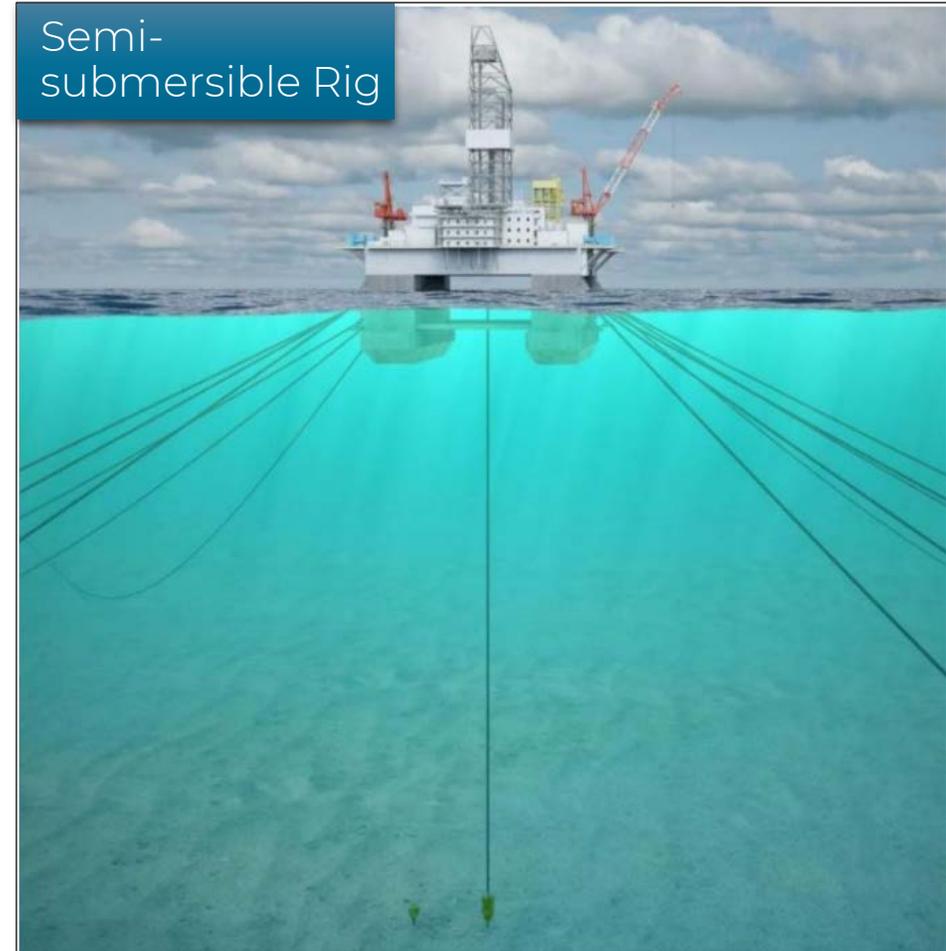


Rig examples

Jack Up Rig



Semi-submersible Rig



Potential Environmental Impact & Mitigation Measure



Planned Impact - Seabed disturbance

Seabed disturbance will be caused by:

- seabed sampling during the geotechnical survey.
- positioning of the mobile offshore drilling unit (MODU), if a moored or jack-up MODU is used.
- removal of marine growth on the wellhead. • installation of temporary winches on the seabed.
- cutting of the wellhead
- retrieval of the wellhead and guide base/s from the seabed.

Potential Impact

- Seabed disturbance will cause a localised and temporary reduction in water quality, and disturbance to benthic habitat.
- The maximum seabed disturbance footprint is from MODU positioning, if a moored MODU is used.
- In this case, up to 12 anchors and mooring lines will be laid, giving a maximum footprint of 1,944 m² per well.
- There is no sensitive benthic habitat, Marine Parks or Key Ecological Features (KEFs) in the operational area.

Proposed Management/Mitigation

- Use low sulfur fuel on the vessels and MODU, in accordance with legislative requirements (e.g. Marine Orders).
- Bulk solids transferred in accordance with bulk transfer procedures to reduce the risk of an unintentional release to sea and air.
- No waste incineration onboard.
- Ozone-depleting substances (ODS) managed in accordance with MARPOL.
- Compliance with regulatory requirements for marine air pollution and GHG missions reporting.
- MODU and vessel Planned Maintenance System (PMS) in place to maintain DP, engines and machinery.

Potential Environmental Impact & Mitigation Measure



Planned Impact - Physical interaction

The physical presence of the MODU and movement of vessels within the operational area can interfere with other marine users by causing displacement from the area during activities.

Potential Impact

The operational area is a 3 km radius around the two wells and the corridor between them. There is no formal Petroleum Safety Zone; however, exclusion and cautionary zones will be in place during activities.

Activities in the operational area are of short duration, expected to last between 2 to 60 days.

Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area.

There are no tourism or recreational fishing activities expected in the operational area due to distance from shore, and no Maritime Defence Exercise areas.

Proposed Management/Mitigation

- Navigation equipment and procedures, in accordance with legislative requirements.
- Maritime notices will be complied with.
- All activities will occur within the operational area.
- Other relevant notifications may be made, as requested by stakeholders.
- Lighting will be used as required for safe work conditions and navigational purposes.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Physical presence – equipment in-situ

If the wellhead or other equipment (e.g. the guidebase/s) are left in-situ following decommissioning, the permanent physical presence of the wellhead or other equipment will continue to:

- Provide a hard substrate resulting in the creation of a new habitat.
- Potentially interrupt natural sediment movement in the immediate vicinity of the wellhead remaining in-situ permanently.
- Introduce contaminants to the water column and sediment surrounding the wellhead as it degrades overtime.

Potential Impact

The gradual degradation and corrosion of the wellheads and equipment over time will result in trace amounts of metals to the water column and surrounding sediments. The main constituent of low-alloy steel used for this era of wellhead is iron (typically 95-98%), which is only toxic to marine organisms at extremely high concentrations – which are unlikely to be reached in this offshore location. The remaining constituents are chromium, molybdenum, manganese, and <1% of trace alloys including nickel, silicon, sulfur and phosphorous.

Corrosion of the wellhead is likely to be slow (at a rate of ~0.2 mm/year) because of exposure to strong water currents.

There are no other materials identified to be associated with the wellheads – i.e. plastic components or surface coatings.

Proposed Management/Mitigation

For wellheads and other equipment (e.g. guidebase/s) to be left in-situ following decommissioning, the EP must demonstrate an equal or better environmental outcome; and demonstration of ALARP and acceptability.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Atmospheric emissions and greenhouse gas (GHG):

- Atmospheric and GHG emissions are generated by the MODU and vessels as a result of combustion for power generation.
- Vessels may also use ozone-depleting substances (ODS) in refrigeration systems.
- No waste will be incinerated on board.

Potential Impact

- Hydrocarbon combustion may result in a temporary, localised reduction of air quality in the environment immediately surrounding the release point.
- Non-GHG emissions (such as NO_x and SO_x) and GHG emissions can lead to a reduction in local air quality.
- Given the short duration of the campaigns (between 2 to 60 days) and relatively low fuel usage, the contribution of atmospheric and GHG emissions to the global carbon budget is expected to be insignificant and is not evaluated further.

Proposed Management/Mitigation

- Use low sulphur fuel on the vessels and MODU, in accordance with legislative requirements (e.g. Marine Orders).
- Bulk solids transferred in accordance with bulk transfer procedures to reduce the risk of an unintentional release to sea and air.
- No waste incineration onboard.
- Ozone-depleting substances (ODS) managed in accordance with MARPOL.
- Compliance with regulatory requirements for marine air pollution and GHG emissions reporting.
- MODU and vessel Planned Maintenance System (PMS) in place to maintain DP, engines and machinery.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Noise emissions - Continuous:

Continuous noise emissions will be generated by the operation of support vessels, helicopters, operation of the MODU and cutting of the wellheads.

Potential Impact

Underwater noise emissions can cause:

- a change in marine fauna behaviour.
- mask communication.
- temporary or permanent hearing loss.

The greatest source of noise emissions is if a MODU on Dynamic Position (DP) is used (from thruster noise), and its support vessels.

The operational area does not overlap with any biologically important areas (BIAs) for marine mammals or fish/ sharks, though it does for 4 species of marine turtles – any individuals present would be transitory.

Potential impacts are likely to be restricted to localised and temporary avoidance behaviour. Given the short duration of the MODU campaign (60 days), the potential impacts are considered low.

Proposed Management/Mitigation

- Compliance with administrative controls (such as EPBC Regulations Part 8) to reduce interactions with marine fauna.
- Documented maintenance program in place for equipment on vessels that provides a status on the maintenance of equipment.
- MODU and vessel Planned Maintenance System (PMS) in place to maintain DP, engines and machinery.
- Marine assurance standard in place.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Noise emissions – Impulsive:

Impulsive noise emissions generated by acoustic survey techniques during the geophysical survey – i.e. Multibeam echo sounder, side scan sonar, sub-bottom profiling, magnetometer, ultrashort baseline positioning system.

Such equipment is designed to characterise the seabed topography, bathymetry, potential geohazards, and other seafloor features prior to MODU placement at the wellheads.

Potential Impact

The operational area does not overlap with any biologically important areas (BIAs) for marine mammals or fish/ sharks, though it does for 4 species of marine turtles – any individuals present would be transitory.

The impulsive noise emissions generated by the various acoustic survey instruments may result in localised and temporary behavioural changes to marine fauna within tens or hundreds of metres.

Proposed Management/Mitigation

Compliance with administrative controls (such as EPBC Regulations 8 (Part 8) to reduce interactions with marine fauna.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Light Emissions:

Lights on the MODU and vessels will be required on a 24-hour basis during the activities for safety and navigational purposes, in accordance with navigational requirements.

There is no proposed flaring.

Potential Impact

Light emissions have the potential to result in changes to marine fauna behaviour, by acting as an attractant to light-sensitive species, leading to possible increased predation and/or disorientation.

The closest nesting BIA for marine turtles is ~116 km from the 20 km buffer used for light impact assessment – meaning light from the MODU and vessels is not visible from shore; and there is no potential to impact nesting females or hatchlings.

The operational area does not overlap any BIAs for seabirds, and is >150 km from shore, meaning there is no potential to impact fledging behaviour.

There is the potential for a small number of adult seabirds and migratory shorebirds may be attracted to the MODU and vessels, however given the short duration of the campaigns (between 2 to 60 days), this is considered minor.

Proposed Management/Mitigation

Lighting will be used as required for safe work conditions and navigational purposes.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Planned discharges - Routine:

Operation of vessels and the MODU will routinely discharge the following to the marine environment:

- sewage
- greywater
- putrescible waste
- treated bilge
- cooling water and brine
- deck drainage.

Potential Impact

A temporary and localised impact on water quality may result in a change in water quality and changes to predatorprey dynamics.

Given the relatively low volume and intermittent nature of planned vessel discharges, the short duration of the campaigns (between 2 to 60 days), the water depth and open ocean environment of the operational area, the potential impact is expected to be localised to the immediate proximity of the release, and of short duration.

Proposed Management/Mitigation

- All routine marine discharges will be managed according to legislative requirements.
- MODU and vessel PMS in place to maintain DP, engines and machinery.

Potential Environmental Impact & Mitigation Measure



Planned Impact

Planned discharges - Decommissioning

Decommissioning activities may result in the following discharges to the marine environment:

- inhibited seawater (chemical additives include biocide, oxygen scavenger, dyes, corrosion inhibitor).
- control (hydraulic) fluid.
- cement and cement debris.
- Water Based Mud (WBM).
- reservoir gas.
- cleaning chemicals (weak acids)

No synthetic based mud will be used.

Potential Impact

Discharges of muds and other fluids have the potential to impact to:

- Water quality.
- Sediment quality and benthic habitat.
- Local marine fauna.

The benthic fauna and seabed at the operational area is widely represented on the Joseph Bonaparte Gulf.

Given the quantities of the discharges, the low toxicity of WBM and cement and high dispersion in the open, offshore environment, any impact on the marine environment from the discharges are expected to be minor and temporary. Recovery of water quality conditions is expected within hours after the cessation of the discharges.

Cement discharge impacts to the marine environment are associated with smothering of benthic and infauna communities in the vicinity of the wellheads. Due to the localised area of disturbance, impacted benthic communities are expected to rapidly re-colonise any disturbed areas upon completion of the activities.

Proposed Management/Mitigation

- Selection of chemicals to reduce impact to as low as reasonably practicable (ALARP) and acceptable levels.
- Quality control limits for barite.
- Bulk powder, fluids and brine discharge framework, to restrict the discharge of leftover bulk products to ALARP.
- Drill cuttings returned to the MODU will be discharged below the water line to facilitate dispersion.
- Lost-circulation material procedures.
- Cement remaining at the completion of drilling is managed so as to avoid or minimise its discharge overboard.
- Chemical assessment procedure will be implemented.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Interaction with other marine users -equipment in-situ:

If the wellhead or other equipment (e.g. the guide base/s) are left in-situ following decommissioning, the permanent physical presence of the wellhead or other equipment may cause an impact to other marine users (e.g. commercial fisheries, petroleum industry, or shipping)

Potential Impact

The wellheads have been in-situ on the seabed for the past ~40 years without any reported incidents or issues. The height of the wellheads is only ~3 m above the seabed, and the guidebase/s are partially buried.

Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area.

There are no tourism or recreational fishing activities expected in the operational area due to distance from shore, and no Maritime Defence Exercise areas.

There are no known recognised major shipping routes through the operational area, and the water depth (~95 m) and height of the wellheads (~3 m) mean it is unlikely to cause any disturbance or displacement of shipping traffic.

Proposed Management/Mitigation

- Wellheads are charted on AHO nautical charts so that marine users are aware of their location.
- AHO and any other stakeholders who requested to be informed of wellhead locations (i.e fisheries) are notified.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact Marine fauna interaction

There is the potential for vessels to collide with marine fauna, including marine mammals, fish, marine reptiles and seabirds.

The main collision risk is through vessel collision with large, slow-moving cetaceans, potentially resulting in severe injury or mortality.

Potential Impact

Given the short duration of the campaigns (between 2 to 60 days), and the slow speeds at which vessels operate, collisions with marine fauna are considered highly unlikely.

Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

Compliance with administrative controls (such as EPBC Regulations Part 8) to reduce interactions with marine fauna. • Any vessel strikes with cetaceans will be reported in the National Ship Strike Database. • Observations of the surroundings will be undertaken from the vessel/s for marine fauna.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Introduction of marine pest species

There is the potential for introduction and establishment of invasive marine pests to the operational area via vessels ballast water or biofouling on vessel hulls.

Potential Impact

The risk of introducing IMS is limited by the depth of the operational area (>50 m), which is not directly adjacent to any shallow shoals or banks. The substrate in the operational area does not have any hard substrate to which IMS can attach.

Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

- All vessels will be assessed and managed as appropriate to prevent the introduction of marine pests.
- Vessels will comply with biosecurity requirements for ballast water and biofouling and comply with the Maritime Arrivals Reporting System (MARS).

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Accidental release – waste and solid objects

There is the potential for the accidental disposal of hazardous wastes (e.g. hydrocarbon contaminated materials, batteries, paint cans) and nonhazardous solid wastes (e.g. paper and cardboard, wooden pallets, scrap steel, rope, glass and plastics).

There is the potential for dropped objects during retrieval activities – i.e. the wellhead or guidebase/s (in particular if corroded) or the winches.

Potential Impact

The accidental release of wastes can cause a temporary and localised reduction in water quality, and the potential for marine fauna to ingest or become entangled with solid waste (garbage).

If equipment is dropped, this may cause disturbance or smothering of benthic habitats. The largest footprint of any item of equipment that will be lifted or retrieved during the campaigns is 30 m³ (footprint of a guidebase or basket).

This is a small area; and benthic habitats are known to rapidly recover. There are no KEFs or sensitive benthic habitat in the operational area.

Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

- Procedures to reduce the potential for loss of non-hazardous and hazardous waste and dropped objects to be followed.
- Dropped objects to be retrieved where possible.
- Lifting procedures will be implemented.
- For hazardous chemicals, including hydrocarbons, hazardous chemical management procedures will be in place to reduce the risk of an accidental release to sea.
- Chemical assessment procedure will be implemented.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Accidental release – Minor loss of containment

Minor volumes of hydrocarbon or other chemicals (e.g. hydraulic fluids, deck spills) may be accidentally released to the marine environment due to:

- Bulk product spills (e.g. cement, barite).
- Loss of primary/secondary containment.
- Incorrect handling and storage.
- ROV failure.

Potential Impact

Minor accidental releases of hydrocarbons or chemicals can cause a change in water quality. Expected volumes are small (<1 m³), and there is no potential for injury or mortality to marine fauna.

Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

- Use of MDO rather than Heavy Fuel Oil (HFO) on vessels (MDO is lighter than HFO and will evaporate faster and persist less in the marine environment).
- Response plans and equipment will be in place and maintained to manage spills to the environment (e.g. oil pollution emergency plans). • Administrative control, such as bunkering / bulk refuelling procedures.
- In the event of a minor loss of containment to sea, Oil Pollution Emergency Plan (OPEP) requirements will be implemented to mitigate environmental impacts.
- Chemical assessment procedure will be implemented.
- For hazardous chemicals, including hydrocarbons, hazardous chemical management procedures will be in place to reduce the risk of an accidental release to sea.
- Remotely operated vehicle (ROV) inspection and maintenance procedures.
- Procedures to reduce the potential for loss of non-hazardous and hazardous waste and dropped objects to be followed.
- MODU and vessel PMS in place to maintain DP, engines and machinery.
- Where required, operational and scientific monitoring undertaken in accordance with Eni's Operational and Scientific Monitoring Plan.

Potential Environmental Impact & Mitigation Measure



Unplanned Impact

Accidental release – MDO (vessel collision)

A release of up to 300 m³ marine diesel oil (MDO) could occur from a collision between the activity vessels and a third-party vessel due to factors such as h

Human error, poor navigation, vessel equipment failure or poor weather. A smaller volume of MDO (~50 m³) could be released during bunkering (i.e. refuelling of the MODU).

Potential Impact

An accidental release of MDO can cause a change in water quality, a change in fauna behaviour, injury or mortality to marine fauna and an impact to other marine users.

Potential impacts include those to plankton, fish, marine turtles, marine mammals, seabirds and migratory shorebirds, commercial fisheries, and cultural heritage.

MDO is a relatively volatile, nonpersistent nature hydrocarbon with rapid evaporation on the sea-surface (typically ~36% within the first 2 hours).

Hydrocarbon spill modelling does not predict any shoreline contact; or any contact with Marine Parks or KEFs.

Seven active fisheries overlap the operational area; however, these commercial fisheries have recorded limited historical catch effort data within the area. There are no tourism or recreational fishing activities expected, and no Maritime Defence Exercise areas.

Eni will apply control measures to ensure the likelihood of the event occurring is reduced to ALARP and acceptable levels.

Proposed Management/Mitigation

- Pre-start notifications will be issued.
- Regulatory requirements for the prevention of vessel collisions and safety and emergency arrangements.
- Use of MDO rather than Heavy Fuel Oil (HFO) on vessels.
- In the event of an oil spill to sea, OPEP requirements will be implemented to mitigate environmental impacts.
- Response plans and equipment will be in place and maintained to manage spills to the environment (e.g., oil pollution emergency plans).
- Administrative control, such as bunkering / bulk refuelling procedures.
- Vessels selected and on-boarded are operated, maintained and manned in accordance with industry standards (Marine Orders) and regulatory requirements.
- Where required, operational and scientific monitoring undertaken in accordance with Eni's Operational and Scientific Monitoring Plan.

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Appendix C4: Consultation Efforts Log

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25	
Government								
Commonwealth Government								
Australian Communications & Media Authority (ACMA) within the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDC) (Cth)	1	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult ACMA since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow ACMA to make an informed assessment of the possible consequences of the activities which are the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for ACMA to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.	
		Email	Outgoing	25/06/2024	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.			
		Email	Incoming	26/06/2024	Acknowledgement of receipt and revision commitment by requested date.			
		Email	Incoming	27/06/2024	Confirmation of receipt through subcablesenquiries email address with links to data for reference prior to response.			
		Email	Outgoing	1/07/2024	Invitation to consult resent with inclusion of RP's info email to widen distribution.			
								RP response to consultation. EMBA is not in the vicinity of ACMA protection zones. Noted engagement should occur with the following due to potential overlap with the EMBA: - Vocus - North West Cable System - Aus Hydro Office - location of existing submarine cables - Consideration for engagement with future projects based on timing of Petrel activity - BW Digital's Hawaiki Nui cable and Inligo Networks Asia Connect Cable. - Confirmed no further consultation required
		Email	Incoming	2/07/2024	RP sent email with Stop in the subject line per the guidance for relevant person to cease engagement efforts by Eni.			
Australian Fishing Management Authority (AFMA)	1	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult AFMA since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow AFMA to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for AFMA to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.	
		Email	Outgoing	25/06/2024	Follow up email to confirm receipt of information, online location for more detail and advance notice of phone call.			
					RP advised no concerns identified for comment. Requested that fishers with entitlement to fish within the proposed areas are consulted: - Northern Prawn Fishery - email provided - Commonwealth Fisheries Association - email provided			
		Email	Incoming	28/06/2024				
		Email	Outgoing	1/07/2024	Email acknowledgement of no comment regarding activity. Summary of other fishing bodies consulted provided for information. Confirm conclusion to consultation effort.			
		Email	Incoming	1/07/2024	Acknowledgement of email providing summary and conclusion of consultation effort.			
		Email	Outgoing	11/07/2024	Email inviting face to face consultation in Darwin late July 2024 to continue relationship build.			
		Email	Outgoing	12/07/2024	Email thanking RP for engagement to date. Request for assistance in arranging meeting with representative in Darwin. Relationship build.			
		Email	Incoming	12/07/2024	Email confirming current contact is the best contact. Darwin office focussed on foreign compliance.			
		Email	Outgoing	12/07/2024	Email to RP thanking for the advice and confirmation that Darwin branch of RP to be removed from Eni stakeholder register.			
Australian Hydrographic Office (AHO) (Cth)	1	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult AHO since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow AHO to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for AHO to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.	
					Invitation to consult acknowledged. Request for: - further updates once activities are confirmed - no concerns with any activities.			
		Email	Incoming	24/06/2024				
		Email	Outgoing	24/06/2024	Eni acknowledged receipt and request for further information when activities and timing has been confirmed. Consultation effort concluded.			
Australian Maritime Safety Authority	1	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult AMSA since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow AMSA to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for AMSA to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.	
		Email	Outgoing	25/06/2024	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.			
		Email	Outgoing	1/07/2024	Follow up to invitation to consult. activity flyer attached.			
		Phone	Outgoing	8/07/2024	Called different business unit to follow up on submission for engagement and query on feedback.			
		Email	Outgoing	8/07/2024	Forward invitation to consult to updated email address with flyer attached.			
		Email	Outgoing	19/07/2024	Email follow up to invitation to consult.			
		Email	Outgoing	25/07/2024	Email follow up to invitation to consult.			
					Email acknowledging persistence in engagement and advising contact information for future consultation efforts. Outline of notification requirements including: - Notification by vessels including support craft to RP's Response Centre for radio navigations warnings 24 - 48 hours before operations commence. - All details including name, callsign and Maritime Mobile Service Identity, satellite comms, area of operation, requested clearance from other vessels and notification of commencement and conclusion to activity. - AHO to be contacted through datacentre email no less than four working weeks before operations commence for the promulgation of notices to mariners. - Vessels to exhibit appropriate lights and shapes to reflect nature of operations. - Eni to evaluate and implement adequate anti-collision measures as listed by AHO (but not limited to that list). - RP provided links to shipping data in relation to activity, OA, ZPI and EMBA and online request forms - RP provided map of AIS data June to December 2023			
		Email	Incoming	29/07/2024				
		Email	Outgoing	6/08/2024	Email acknowledging receipt, capture of notification and mitigation requirements within EP and consultation undertaken with AHO. Consultation effort concluded.			

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25	
Department of Climate Change, Energy, The Environment and Water (DCCEEW)	3	Text	Incoming	6/08/2024	RP (Contact Centre) advice entity cannot provide a formal response without a referral except to ask Eni to be sure of relevant obligations including the significant impacts guidelines.	Y	Eni has been seeking to consult DCCEEW since it issued information regarding this EP in July 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow DNP to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for DCCEEW to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.	
		Text	Outgoing	6/08/2024	Eni requested this advice is provided in an email.			
		Phone	Outgoing	14/08/2024	Phone call to RP (Assistant Director) seeking a conversation to assist progression of consultation. No answer. Left message for return phone call.			
		Email	Outgoing	21/08/2024	Email to RP (Seadumping) requesting guidance on regulatory process for wellhead infrastructure removal options under consideration.			
		Text	Outgoing	21/08/2024	Text to RP (Assistant Director) requesting advice provided in text on 6/8/24 is provided in an email.			
		Text	Incoming	21/08/2024	Advice from RP that email requested was sent on 6/8/24 (no record of receipt) and will send again.			
		Text	Outgoing	21/08/2024	Eni acknowledged receipt of email.			
								RP (Assistant Director) confirmation of text advice stating entity cannot formally respond without a formal referral. Request that Eni is aware of - obligations under the Act, including whether the significant impact guidelines should be applied to potential impacts on protected matters.
		Email	Incoming	21/08/2024				
		Email	Outgoing	21/08/2024	Eni confirmed receipt of RP email.			
		Email	Outgoing	22/08/2024	Eni confirmed awareness of obligations and significant impact guidelines in development of the EP. Thanked for time. Consultation effort is concluded.			
		Email	Incoming	27/08/2024	RP (Sea Dumping) confirmed that Eni's understanding of regulatory process for wellhead infrastructure removal options under consideration is correct.			
		Email	Outgoing	27/08/2024	Eni acknowledged receipt of advice from RP Sea Dumping.			
Department of Defence	1	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult the Dept of Defence since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow the Dept of Defence to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for the Dept of Defence to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.	
		Email	Outgoing	25/06/2024	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.			
		Email	Outgoing	2/07/2024	Re-sent email with update EP name and flyer.			
		Phone call	Outgoing	8/07/2024	Rang main contact line (switch), advised call about petroleum activities offshore, transferred, on hold for 12 mins, picked up but not right location, making referral, didn't know they had an email address like that. Forwarded to a level 1 to return call.			
		Phone call	Incoming	11/07/2024	Call from reception at DoD to follow up if RP responded to email. Confirmed correct email address. Advised that it may be manned intermittently by a reservist and to give them a week to come back to us. Ref# for quoting 12012772.			
		Phone call	Outgoing	15/07/2024	Phone call to main switch, quoted reference number and briefed answerer on the purpose of the call. Only point of contact for that group is the offshore.petroleum email with no phone number. Provided an alternative email. Asked to resend to updated email address to forward on to an internal email to relevant person internally (couldn't provide direct email)			
		Email	Outgoing	15/07/2024	Resend invitation to email provided for internal follow up.			
		Email	Incoming	15/07/2024	Acknowledgement of email receipt and forwarding to achieve engagement. New reference number 12021683			
		Email	Outgoing	25/07/2024	Follow up email sent to the offshore.petroleum email with reference number and customer service email advising forwarding and reference number.			
		Email	Outgoing	2/08/2024	Email seeking engagement, noting commencement in June and unable to get progress. Option to opt out if consultation not required.			
		Email	Outgoing	6/08/2024	Email forwarded to RP (Directorate of Property Interests and Acquisition, Property Management Branch, Infrastructure Division, Security and Estate Group) outlining efforts to date and seeking assistance with progressing. Copied to existing DoD email. Includes map detailing RP activity intersect with OA, ZPI and EMBA.			
		Email	Incoming	6/08/2024	Response from email to Directorate - RP no longer works in offshore and directed Eni back to the general offshore petroleum email already in use.			
		Email	Outgoing	6/08/2024	Eni acknowledged RP email and direction to continue attempts through offshore petroleum email.			
		Email	Outgoing	9/08/2024	Email to RP (Land Planning and Regulation) (actively engaged with Eni Energy) to seek assistance in progressing consultation. Includes map showing intersect of OA, ZPI and EMBA with Defence training locations.			
		Text	Outgoing	15/08/2024	To RP (Officer) seeking assistance to consultation effort.			
		Text	Incoming	15/08/2024	From RP (Officer) confirming availability.			
		Text	Outgoing	15/08/2024	To RP (Officer) acknowledging availability.			
		Text	Incoming	16/08/2024	Notification of RP (Officer) available for discussion.			
		Text	Outgoing	22/08/2024	To RP (Officer) requesting email address.			
		Text	Incoming	22/08/2024	From RP (Officer) providing email address.			
		Text	Outgoing	22/08/2024	To RP (Officer) acknowledging receipt of email address.			
		Email	Outgoing	22/08/2024	To RP (Officer) to seek advice on consultation efforts and engaging.			
		Email	Outgoing	22/08/2024	Follow up to Defence contact in Land Planning and Regulation to see if any assistance can be provided in consultation contact. Included timeline of consultation and reference to previously included map showing DoD activities intersecting with the OA, ZPI and EMBA.			
		Email	Outgoing	22/08/2024	Email resent to offshore.petroleum email with copy of EMBA intersect map and reference number, noting no engagement effort has been successful. Importance of Eni engagement with RP's and requesting opportunity to provide further information or answer queries.			
		Email	Outgoing	27/08/2024	Email follow up to RP and copied to offshore petroleum email with copy of flyer and map showing DoD intersect with EMBA, ZPI and OA. Timing of consultation advised and offer to assist in progressing.			
		Text	Outgoing	27/08/2024	To RP (Land Planning and Regulation) to confirm receipt of email sent 22/8			
		Text	Incoming	27/08/2024	From RP (Officer) confirming investigation of where to send information on consultation internally.			
Text	Outgoing	27/08/2024	Eni acknowledged RP (Officer) confirmation of investigation for internal responsibility.					
Phone call	Outgoing	4/09/2024	Follow up call to RP (Officer).					

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
Department of Industry, Science and Resources (DISR)	4	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult DISR since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow DISR to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for DISR to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Phone call	Outgoing	25/72/24	Phone call to RP (Reception) to confirm receipt of email. RP (Reception) confirmed email address and advised departments don't have phone contacts and only communicate through email. RP (Reception) provided an additional email address to try.		
		Email	Outgoing	25/07/2024	Resend invitation to consult to original email and new email provided.		
		Email	Outgoing	2/08/2024	Follow up to request for consultation.		
		Email	Incoming	2/08/2024	Incoming email confirming no input to consultation.		
		Email	Outgoing	2/08/2024	Eni acknowledged response.		
Director of National Parks, Parks Australia, part of the Department of Climate Change, Energy, the Environment and Water (DCCEEW) (Cth)	3	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult DNP since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow DNP to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for DNP to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	26/06/2024	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Outgoing	3/07/2024	Resent invitation to consultation noting updated EP name and flyer		
		Email	Outgoing	15/07/2024	Resent invitation to consult.		
		Email	Incoming	17/07/2024	RP advised invitation to consult forwarded to EPBC for review and direct response to Eni.		
		Phone	Outgoing	24/07/2024	To DCCEEW seeking guidance after National Parks efforts were directed to EPBC at DCCEEW. (Also recorded in DCCEEW efforts)		
		Phone	Incoming	30/07/2024	Incoming call from DCCEEW to clarify consultation efforts and separate official approvals process. (Also recorded in DCCEEW efforts)		
		Email	Outgoing	9/08/2024	Eni confirmed consultation with DCCEEW and advice received that no formal assessment will be undertaken unless referred through the NOPSEMA assessment process. DCCEEW requested Eni awareness of relevant regulatory obligations and significant impact guidelines. Consultation efforts with National Parks to conclude based on DCCEEW feedback.		
Email	Incoming	21/08/2024	Email from DCCEEW referencing National Parks and DCCEEW and written confirmation of advice received by text. Originally sent by DCCEEW 6/8 but not received by Eni. (Also recorded in DCCEEW efforts)				
Maritime Border Command (MBC), part of Australian Border Force (ABF), part of the Department of Home Affairs (DHA)	1	Phone call	Outgoing	25/07/2024	Phone calls (x2) - notified longer wait times due to peak time. Referred to website. Contact information not available on website. Multiple options offered in auto response - no applicable selection (all visa, citizenship, trade & customs (options not applicable), passports, food transport and post)	N	Eni has been seeking to consult MBC since it issued information regarding this EP in July 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow MBC to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for MBC to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	30/07/2024	Email with invitation to consult and flyer following receipt of contact		
		Phone call	Outgoing	8/08/2024	Phone call to 131 number, 10:23am AEST - voicemail advises calling out of hours (incorrect - call was within working hours) and offers no option to progress.		
		Phone call	Outgoing	8/08/2024	Called Sydney number - for callers outside of Australia - no relevant options and no option to speak to an operator.		
		Email	Outgoing	8/08/2024	Resent following unsuccessful attempts to engage by phone.		
		Phone call	Outgoing	8/08/2024	Tried 131 number again, same options as Sydney number. Selected an option to try and seek assistance. Spoke to operator. Advised of office contacts on the ABF website -(checked and contacts for NT are 131 number).		
		Phone call	Outgoing	8/08/2024	Called Canberra regional office to seek guidance. Phone number no longer in use.		
		Email	Outgoing	9/08/2024	To ABF RP engaged on alternate Eni project to seek assistance in progressing consultation with MBC.		
		Email	Incoming	12/08/2024	Confirmation by RP (Border Force Inspector) of receipt and internal distribution of email to responsible department with request for acknowledgement of receipt to be returned to Eni.		
		Email	Outgoing	14/08/2024	Eni acknowledged receipt of email .		
		Email	Outgoing	22/08/2024	Eni follow up to RP (Border Force Inspector) advising no internal MBC acknowledgement email received and seeking guidance on how consultation with MBC might be progressed.		
		Email	Incoming	26/08/2024	Response from assisting RP that email has been resent with direction to acknowledge Eni correspondence directly to progress consultation.		
		Email	Outgoing	26/08/2024	Eni acknowledged receipt of advice.		
		Email	Outgoing	28/08/2024	Email to RP (Border Force Inspector) email to seek confirmation of receipt of information, background on consultation timing efforts, extension of conclusion to consultation effort to 6 September to allow for a full six weeks. Direct mobile number for Eni Rep provided. Activity flyer attached.		
		Email	Incoming	29/08/2024	RP following up the internal person responsible. RP (Mgr) confirmed following up with MBC to respond.		
		Email	Outgoing	29/08/2024	Eni acknowledge email from RP (Mgr) for the follow up with MBC.		
National Offshore Petroleum Titles Administrator (NOPTA)	1	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult NOPTA since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow NOPTA to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for NOPTA to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	25/06/2024	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Outgoing	2/07/2024	Re-sent invitation to consult with updated EP name and flyer.		
		Email	Incoming	2/07/2024	RP acknowledged receipt of email advising no further queries.		
		Email	Outgoing	2/07/2024	Eni acknowledged RP email.		
Northern Territory Government							
Aboriginal Areas Protection Authority (AAPA)	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult AAPA since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow AAPA to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for AAPA to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Incoming	21/6/24	RP responded advising predicted area does not impact the coastline regarding the potential damage to Aboriginal sacred sites. No further information required.		
		Email	Outgoing	24/6/24	Eni acknowledged RP advice and conclusion of consultation effort.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
Department of Environment, Parks and Water Security (DEPWS)	1	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult DEPWS since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow DEPWS to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for DEPWS to provide objections or claims in relation to the EP and for
		Phone	Outgoing	24/07/2024	To RP to confirm receipt of email. RP requested Eni send consultation email to NTEPA as the responsible department for consultation. Contact details provided for phone follow up with NTEPA RP contact. Conclusion of consultation following transfer to NEPTA.		
Department of Industry, Tourism and Trade (DITT) - NT Fisheries	1	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult DITT since it issued information regarding this EP in July 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow DITT to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for DITT to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Incoming	20/06/2024	Auto response confirming receipt.		
		Email	Outgoing	21/06/2024	Email follow up to recent engagement meeting with RP's on 20 June 2024. Reference to commencement of Petrel Decom consultation with copy of invitation to consult attached.		
		Email	Outgoing	25/06/2024	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Outgoing	26/6/24	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Incoming	25/6/24	Provision of 2024 list of fisheries licence holders for analysis against sent letters and identification of additional fishers to receive information.		
		Email	Outgoing	2/07/2024	Re-sent email with updated EP name and flyer.		
		Email	Outgoing	3/07/2024	Re-sent email invitation to consult with updated EP name and flyer		
		Email	Outgoing	10/07/2024	Email invitation offering face to face consultation in late July with dates.		
		Email	Incoming	15/07/2024	Email with timing options for consultation meeting.		
		Email	Outgoing	15/07/2024	Email confirming 9am, 24 July.		
		Meeting	In Person	24/07/2024	In person meeting took place as scheduled with RP in DITT NT Fisheries office, Berrimah, NT. Refer to file note 240724_FN_NT Fisheries_Consultation.		
Email	Outgoing	2/08/2024	Email with presentation. Consultation closed with invitation to reengage if required. - Noting that fishing operators will likely ask questions such as, "When is a vessel going out?; For what purpose?; What is the exclusion zone?; For how long will the vessel be out there?"; Eni will account within the EP documentation to ensure that this information is provided to Department of Fisheries and NTSC prior to any vessel heading out to the area. -Re before and after surveys and images to record the difference in the seabed floor, we will check as to whether this is articulated in the EP and ensure that it is embedded. -We will check the distances of Exclusion Zone to confirm that for both Jack-up MODUs and Semi-Sub MODUs (with wide reaching anchor chains) that the Exclusion zone will remain the same at 500m. If this is not the case, we will ensure that the EP reflects the accurate information as to differences in Exclusion Zones based on Rig choice.				
Department of Transport - Marine Safety (NT)	1	Email	Outgoing	19/07/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult DOT since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow DOT to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for DOT to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Incoming	19/07/2024	Auto response to email confirming receipt.		
		Phone call	Outgoing	24/07/2024	Called RP pollutions section, external messaging service for marine pollution reporting, request call back to ensure DoT-NT Marine Safety is correctly consulted. Left all contact information.		
		Email	Outgoing	30/07/2024	Follow up email to original invitation to consult.		
		Email	Incoming	30/07/2024	Auto response to email confirming receipt.		
		Phone call	Outgoing	8/08/2024	Phone call to confirm that engagement with AMSA is correct pathway. As AMSA assessment has been completed with no issues, no further consultation effort required.		
Northern Territory Environment Protection Authority (NTEPA)	4	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult NTEPA since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow NTEPA to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for NTEPA to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is
		Email	Incoming	24/07/2024	Incoming email acknowledging receipt - email came from NEPTA Waste email address - acknowledgement of forwarded information by DEPWS.		
		Phone call	Incoming	25/07/2024	RP (Senior Environment Officer) confirmed consultation unnecessary due to EMBA not impacting state waters. Consultation information forwarded to Strategic Services dept for assessment. RP in Strategic Services not available till 30 July.		
		Email	Incoming	25/07/2024	RP confirmed discussion and consultation transfer from DEPWS to NTEPA. Consultation not required due to EMBA not intersecting territory waters. Consultation material forwarded to Snr Policy Officer, Strategic Services for further assessment and comment.		
		Email	Outgoing	25/07/2024	Eni acknowledged receipt and timing of consultation effort with referred RP - Strategic Services once returned from leave.		
		Email	Outgoing	1/08/2024	Email to Strategic Services to follow up on consultation requirements for oil spill management and response.		
		Phone	Outgoing	7/08/2024	To main office number to speak to Strategic Services. No direct number and unable to transfer. Left message with contact details.		
		Email	Outgoing	7/08/2024	Follow up email advising of call and request for response.		
		Phone	Outgoing	15/08/2024	Phone call to individual RP direct line. No answer - left voicemail advising Eni had emailed Strategic Services contact three times to follow up and have received no response.		
		Phone	Outgoing	15/08/2024	Phone call to RP reception. Strategic Services RP not in the office. Alternate number provided.		
		Phone	Outgoing	15/08/2024	Phone call to Strategic Services RP. Brief discussion confirming EP development and efforts to ensure thorough consultation effort. RP committed to respond by 16/8 and requested a reminder if Eni rep has not received response by 19/8/24.		
		Phone call	Incoming	19/08/2024	Incoming call from Strategic Services RP. Voicemail left seeking return call.		
		Phone call	Outgoing	19/08/2024	Returned call to RP, no answer, no voicemail opportunity.		
		Phone call	Outgoing	20/08/2024	Phone call to Strategic Services RP - unavailable. Left message with reception.		
		Phone call	Outgoing	21/08/2024	Phone call to Strategic Services - working from other office. Recommended sending a follow up email.		
Email	Outgoing	21/08/2024	Follow up email to phone call to progress feedback.				

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
		Phone	Outgoing	26/08/2024	Call to RP office, Strategic Services RP unavailable all week. Eni rep asked if someone else is able to assist as the consultation efforts are due to close at the end of the week. Activity referred to strategic services a month ago. No alternative to RP currently away.		complete.
		Email	Outgoing	26/08/2024	Email to original RP that forwarded consultation effort to Strategic Services noting inability to engage over the previous four weeks. Request for assistance noting consultation effort is expected to conclude at the end of the week.		
		Email	Incoming	26/08/2024	Email from original RP requesting what further information is required.		
		Email	Outgoing	26/08/2024	Email advice to RP that consultation was referred to Strategic Services as the Department's main contact for marine oil spill response / emergency management matters.		
		Email	Outgoing	28/08/2024	Email follow up to RP to confirm if any further consultation required, how Eni Rep may assist in assessment or if no further information is required, request advice by email to conclude consultation effort.		
		Email	Incoming	28/08/2024	RP out of office notification returning end of the week. Direction to engage through alternate emails.		
		Email	Outgoing	28/08/2024	Follow up email to the alternate emails (environmental impact assessment and environmental regulations) to seek progress, provide background to outstanding information RP indicated would be sent, inability to engage with internal RP for over a month. Provided direct phone number and offer to assist with a conversation. Consultation timeline, activity sheet provided.		
		Email	Incoming	29/08/2024	Confirmation from RP (Senior Environment Officer) that there are no other queries given the activity and associated EMBA is solely within Commonwealth waters.		
		Email	Outgoing	29/08/2024	Confirmation of conclusion to consultation effort with thanks.		
Northern Territory Regional Harbourmaster, part of DIPL	4	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult DIPL since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow DIPL to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for DIPL to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Phone call	Outgoing	24/07/2024	To RP and provided background. RP advised unlikely to comment as activity is in commonwealth waters. Requested re-send to same general email as well as personal email provided.		
		Email	Outgoing	24/07/2024	Resent email as directed in phone call seeking confirmation of advice received during call and a written response.		
		Email	Incoming	24/07/2024	RP advice that consultation invitation has been forwarded to NTEPA as the appropriate department for consultation.		
		Email	Outgoing	24/07/2024	Email to RP advising of pursuit of consultation with NTEPA who had yet to respond to initial direct invitation in June 2024. Confirmation of conclusion to consultation effort.		
		Email	Outgoing	2/08/2024	Email follow up confirming efforts to consult with NTEPA since mid-June. Conclusion of consultation unless advised otherwise.		
West Australian Government							
Department of Biodiversity, Conservation and Attractions (DBCA)	1	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult DBCA since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow DBCA to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for DBCA to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	21/06/2024	Email follow up sending original invitation to Kununurra office.		
		Email	Outgoing	25/06/2024	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Outgoing	2/07/2024	Re-sent email with updated EP name and activity flyer.		
		Phone call	Outgoing	8/07/2024	Called RP reception, transferred to Environment and Biodiversity. Left voicemail.		
		Email	Outgoing	15/07/2024	Follow up email to RP EMBA email address with copy to Kununurra and Broome office		
		Email	Incoming	15/07/2024	Out of office notification from Kununurra office- away till end August.		
		Email	Outgoing	16/07/2024	Email to Broome RP (Regional Manager) offering face to face meeting in Broome early August and offer to speak on the phone.		
		Email	Outgoing	16/07/2024	Email to Kununurra RP (A/District Manager), offer face to face meetings and seeking support for North Kimberley Marine Park, Balangarra and MG Ranger engagement		
		Email	Incoming	16/07/2024	Confirmation of availability to meet in Kununurra subject to confirmed time.		
		Email	Incoming	16/07/2024	RP (Regional Manager) confirmation of availability in Broome with date options and opportunity to preliminary phone call.		
		Email	Outgoing	17/07/2024	Email confirming 5 August meeting in Broome and invitation to additional RP to join.		
		Email	Outgoing	17/07/2024	Email thanks sent confirming meeting 31 July 2024 in Kununurra		
		Email	Incoming	31/07/2024	Perth RP (Senior Environmental Officer) advice of no input for consultation. Conclusion of effort with Perth DBCA.		
		Email	Outgoing	1/08/2024	Eni acknowledged Perth RP (Senior Environmental Officer) advice of no comments.		
		Meeting	In Person	31/07/2024	In person meeting in Kununurra. Refer to File Note 240731_FN_DBCA KNX_Consultation		
		Meeting	In Person	5/08/2024	In person meeting in Broome. Refer to File Note 240805_FN_DBCA Kimberley_Consultation		
				Email to Kununurra RP (A/District Manager) following in person meeting on 31 July. Comments noted regarding: - Plume from Berkley River that moves with the tide. Eni to ensure tidal data is taken into account in oil spill modelling - EP to include information on high probability of cyclones during wet season and impact of cyclones in oil spill modelling. Conclusion of consultation effort.			
				Email follow up to meeting on 5 August. Commitment by Eni to copy correspondence to RP in role as Regional Manager for DBCA, Kimberley on activities in Kununurra and Broome. Request for direct contact information for Broome representative. Noted feedback: - Providing enough information to ensure that RP's are confident of the EMBA not reaching shore and why. - Conclusion of efforts based on the information in the email.			
				Email	Outgoing	19/08/2024	
Department of Jobs, Tourism, Science and Innovation (JTSI)	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult JTSI since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow JTSI to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for JTSI to provide objections or claims in relation to the EP and for consultation to
		Phone call	Outgoing	24/07/2024	Called RP main number to inquire after email invitation to consult. RP searched the email inbox for the invitation. Couldn't find it but confirmed email address is correct. Advised they have been having trouble with Outlook. Requested send again and RP will ensure it is forwarded correctly.		
		Email	Outgoing	24/07/2024	Resent original invitation to same address with updated flyer.		
		Phone call	Incoming	24/07/2024	RP advised email had been forwarded to internal officer who responded that RP invitation to consult should be directed to DEMIRS.		
		Email	Outgoing	24/07/2024	Resent email acknowledging phone call, confirming invitation to consult sent to DEMIRS and requesting formal close out.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
		Email	Incoming	24/07/2024	Confirmation of recommendation to consult with DEMIRS		occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	25/07/2024	Thank you email, confirmation of existing engagement efforts with DEMIRS, formal closeout of consultation with RP unless notified otherwise.		
Department of Energy, Mines, Industry, Regulations and Safety (DEMIRS)	1	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult DMIRS since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow DMIRS to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for DMIRS to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	25/06/2024	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Outgoing	2/07/2024	Resent email with updated EP name and flyer		
		Email	Outgoing	8/07/2024	Resent email with further follow up and copied in Team Leader Petroleum Environment.		
		Email	Outgoing	15/07/2024	Resent invitation to engage with opportunity to opt out.		
		Phone call	Outgoing	24/07/2024	Phone call to RP (Team Lead Petroleum Environment) following up on email and queries that RP may have.		
		Email	Outgoing	30/07/2024	Resent last email trail for follow up and option to opt out.		
		Phone call	Outgoing	7/08/2024	Spoke to RP (Team Leader). Acknowledged receipt of information and current resourcing constraints in the department (currently at 30% resourcing capacity). Commitment to refer email to assessing officer to respond. Thanked for time and will resend email to assist.		
		Email	Outgoing	7/08/2024	Resent email with flyer directly to RP (Team Leader) for internal forwarding to assessment officer and commitment to address by next week.		
		Email	Incoming	7/08/2024	Email acknowledging receipt of information and no further information required given location of EMBA in Commonwealth waters. - Link to Consultation Guidance Note for information pertaining to the reporting of incidents that could potentially impact on any land or water under State jurisdiction.		
		Email	Outgoing	8/08/2024	Eni confirmed receipt of guidance note. Conclusion to consultation effort.		
Department of Planning, Lands, Heritage (DPLH)	4	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult DPLH since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow DPLH to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for DPLH to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Incoming	20/06/2024	Auto response acknowledgement of receipt.		
		Email	Outgoing	26/07/2024	Resend email request for engagement with updated activity flyer.		
		Email	Incoming	26/07/2024	Auto response acknowledgement of receipt.		
		Email	Outgoing	2/08/2024	Resend email request for engagement.		
		Email	Incoming	2/08/2024	Auto response acknowledgement of receipt		
		Email	Incoming	7/08/2024	RP advised activity in Commonwealth waters, department only requires consultation on activities in state waters. No further information or consultation required.		
		Email	Outgoing	7/08/2024	Email acknowledged with thanks.		
		Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.		
		Email	Outgoing	21/06/2024	Forward invitation to consult to individual RP previously engaged to introduce Petrel Decommissioning activity.		
		Email	Outgoing	26/6/24	Follow up email to confirm receipt of provided information, Eni commitment to provision of adequate information for assessment of activity, offer to respond to any queries or concerns, online location for more detail and advance notice of phone call.		
		Phone call	Incoming	2/07/2024	Phone message left from RP through Petrel information line		
		Phone call	Outgoing	3/07/2024	Contact out of office, committed to returning call today.		
		Phone call	Incoming	3/07/2024	RP requested confirmation of fishing authorities included in the consultation process, particularly WAFIC. Eni confirmed invitations to consult sent to WAFIC, RecFishWest, fishing authorities for WA and NT. RP committed to providing a better email address for consultation. New EP name and flyer to be sent to the email address when received.		
		Email	Outgoing	15/07/2024	Sent follow up email to original address (updated email not provided).		
		Email	Outgoing	16/07/2024	Email to RP (Supervising Fisheries and Marine Officer) Kununurra for face to face meeting.		
		Text	Outgoing	18/07/2024	To RP (Supervising Fisheries and Marine Officer) re follow up of email 16th July and request to take a call		
		Email	Outgoing	28/07/2024	Email notification of arrival in Kununurra and scheduling of potential face to face.		
		Email	Outgoing	28/07/2024	Text notification of arrival in Kununurra and scheduling of potential face to face.		
		Email	Incoming	29/07/2024	Acknowledgement and scheduling of face to face.		
		Email	Outgoing	29/07/2024	Thanked for response. Confirmation of sending calendar invite per available timing.		
		Email	Outgoing	29/07/2024	Calendar invite for meeting 29 July		
		Email	Outgoing	29/07/2024	Correction to timing for calendar invite for meeting 29 July		
		Meeting	In Person	31/07/2024	In Person meeting with RP (Supervising Fisheries and Marine Officer) in Kununurra. Refer to File Note 240731_FN_Fisheries_KNX_Consultation		
		Email	Outgoing	8/08/2024	Email to RP Sustainability and Biosecurity contact. Eni referred by email to RP following receipt of advice direct Pearl Producers Australia contact no longer with organisation. Email seeks consultation with DPIRD as an RP and as directed for PPA consultation. Email included efforts to engage with RP head office.		
		Email	Incoming	8/08/2024	Auto response advising RP contact no longer valid.		
		Phone	Outgoing	8/08/2024	Call main office number, chose commercial fishing option, left voicemail with details and request for guidance to progress consultation.		
		Email	Outgoing	8/08/2024	Email re-sent to RP general email with copies of correspondence to DPIRD and Pearl Producers Australia seeking progression of consultation.		
		Email	Outgoing	13/08/2024	Email follow up to meeting with copy of presentation to RP Kununurra. Confirmation of EP including direction that - all chemicals and fluids used in the activity are selected on the criterion that they are lowest impact Conclusion of consultation efforts with RP Kununurra.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
Dept of Primary Industries and Regional Development (DPIRD)	1	Email	Outgoing	14/08/2024	Email forward to second contact at RP provided by PPA email to seek progress for both PPA and RP following regional RP cessation of effort.	Y	Eni has been seeking to consult DPIRD since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow DPIRD to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for DPIRD to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Phone	Outgoing	15/08/2024	Phone call to RP contact received from PPA auto-response. Not connected.		
		Phone	Outgoing	15/08/2024	Phone call to main RP number. Advised RP has not had a resource for three years until recently, making consultation efforts difficult as they are under resourced. Eni Rep confirmed consultation with RP in its own right and as representative for Pearl Producers Australia. RP invited resend of the information to the environment email and copied to RP direct email.		
		Email	Outgoing	15/08/2024	Email with attachments of consultation efforts with both RP and PPA sent to environment email and copied to direct RP.		
		Email	Incoming	20/08/2024	Email response from RP redirecting efforts for PPA to WAFIC. Copied to internal RPs already engaged to progress.		
		Email	Outgoing	21/08/2024	Email advising contact already engaged and Eni awaits input.		
		Email	Incoming	21/08/2024	Out of office notification - email had already been copied to alternative contact.		
		Email	Outgoing	21/08/2024	Follow up email to alternate contact to seek progression. Included timeline for consultation conclusion.		
		Phone	Incoming	21/08/2024	Incoming message from consultation phone number of RP phone call and requesting call back.		
		Phone	Outgoing	21/08/2024	Called RP, advised only in position for a week with a massive back log of consultation requests for a small team. Thanked Eni for their patience. Committed to reviewing provided information and requested a presentation online to the team - tentatively scheduled for 10:00am, 5 September and to be confirmed.		
		Email	Incoming	21/08/2024	Email from RP confirming assessment with appreciation for extension of timing due to only being in the position for one week. Tentative arrangements for 5 September to be confirmed.		
		Email	Outgoing	23/08/2024	Confirmation of meeting date and time with request for meeting to be face to face.		
		Email	Incoming	23/08/2024	RP confirmed meeting with thanks for in person capacity and location of offices.		
		Email	Outgoing	26/08/2024	Email to RP confirming meeting in person with names of attendees and calendar invite to follow.		
		Calendar Invite	Outgoing	26/08/2024	Calendar invite to DPIRD and Eni reps for meeting on 5 September.		
		Email	Incoming	26/08/2024	RP acknowledged attendee email.		
		Email	Outgoing	26/08/2027	Response to RP re meeting request		
		Email	Incoming	26/08/2024	Email from RP confirming invitation received and accepted.		
		Email	Outgoing	26/08/2024	Eni acknowledged RP email re meeting and facilities booking.		
		Calendar Invite	Incoming	27/08/2024	Acceptance of meeting by RP.		
		Email	Outgoing	3/09/2024	Update to RP on the names of attendees for the meeting on 5 September.		
		Email	Incoming	3/09/2024	Update acknowledged with thanks.		
		Email	Incoming	4/09/2024	Acceptance of meeting by second RP.		
		Meeting	In Person	5/09/2024	In person meeting held in DPIRD Environment in Perth. Refer to File Note 240905_FN_DPIRD-Perth Consultation.		
		Email	Outgoing	5/09/2024	Follow up email to meeting confirming: - general insights to challenge of "consultation fatigue" on parties with limited resources - DPIRD jurisdiction for fish stocks up to 200 NM to the Exclusive Economic Zone - DPIRD additional resources to better handle the number of EP's for offshore and onshore. - particular interest in the end state of the decommissioning and a focus on most minimised impact to seabed ecosystem - confirmation of generic email in the event of future staff changes. - DPIRD to provide information on associated activities in the area (eg movement of food stock for the fish) and how that may relate to fisher impact. - confirmation of timeline to 15 September for return of feedback prior to submission of EP.		
		Email	Incoming	5/09/2024	RP responded advising - assessment of slides to follow with request for further detail of the options for infrastructure removal - diagrams for review to assist in providing a picture of what could be left in the environment under different scenarios - fishery management by DPIRD and the potential overlap of Commonwealth fisheries and separate management of NT fisheries by the NT - commitment to provide information on relevant fisheries next week.		
Email	Outgoing	10/09/2024	Email to RP confirming: - the final determination of infrastructure removal and end state of decommissioning will be dependent on the monitoring surveys to understand the integrity of the infrastructure and the impacts that removal will have on the seabed environment. - confirmed that these will be assessed across environment, cultural heritage and other marine users. - confirmed DPIRD interest in the 'end state' of decommissioning and the focus on seeking the most minimised impact to the seabed ecosystem.				
Email	Incoming	13/09/2024	Incoming correspondence from RP with feedback. Refer to Sensitive Matters				
Email	Outgoing	16/09/2024	Eni acknowledged DPIRD as RP noting: - DPIRD has advised of the various fishing interests (including peak fishing bodies) that may be associated with the proposed activities. - DPIRD has offered recommendations of actions and requests for the associated Spill Contingency Plans. - DPIRD has provided information regarding specific fish species that may be spawning within the North Coast Bioregion where the proposed activities will take place. - DPIRD has provided advice regarding the requirement for all vessel managers and operators to minimise the risk of translocating pests and diseases into or within WA waters. - DPIRD has offered recommendations of actions and requests for all potential impacts to fisheries, fish resources and the aquatic environment including assessment of end state of the facilities.				

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
Department of Transport (DoT)	1	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult DOT since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow DOT to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for DOT to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Incoming	25/06/2024	Email requesting if there is a risk of a spill impacting state waters to ensure RP is consulted as outline in the included industry guidance note (July 2020)		
		Email	Outgoing	10/07/2024	Response email with updated flyer, noted EMBA does not impact state waters and therefore does not need to be consulted.		
		Email	Incoming	18/07/2024	RP replied acknowledging email of 10 July 2024.		
Department of Transport (DoT) - Marine Safety Branch (WA)	1	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult DOT Marine Safety since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow DOT Marine Safety to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for DOT Marine Safety to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	25/06/2024	Follow up email to confirm receipt of provided information, Eni commitment to provision of adequate information for assessment of activity, offer to respond to any queries or concerns, online location for more detail and advance notice of phone call.		
		Email	Outgoing	15/07/2024	Follow up on invitation to consult.		
		Email	Incoming	16/07/2024	Incoming email directing consultation efforts to Marine Pollution		
		Email	Outgoing	16/07/2024	Thanked for response. Advised already engaged with Marine Pollution. Confirmation of concluded engagement with RP.		
Northern Territory Local Government							
West Daly Regional Council - Wadeye	3	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult West Daly Regional Council since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow West Daly Regional Council to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for West Daly Regional Council to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Phone	Outgoing	27/6/24	Phoned landline. Confirmed receipt of information. RP queried if Traditional Owner groups are being contacted directly, RP will deal with shire issues. Noted the incoming email had been flagged and committed to following up with the right person. Left name, phone number for return call.		
		Email	Outgoing	3/07/2024	Email invitation to consult re-sent with update EP name and flyer.		
		Email	Outgoing	30/07/2024	Email follow up including advice of direct consultation effort with Thamurrurr DC and Wadeye community.		
		Phone	Outgoing	19/08/2024	Two attempts to call office line - first did not get through - second call ended after one ring.		
		Phone	Outgoing	19/08/2024	Spoke to RP (Regional Director West Daly Top End) who provided contact information for RP Council COO.		
		Text	Outgoing	19/08/2024	Text introduction before follow up call to progress invitation to consult.		
		Phone	Outgoing	20/08/2024	Phone call to RP COO, introduction and summary of invitation to consult. Provided information on extensive Tradition Owners consultation effort, face to face meetings. Commitment to engagement in the long term. Eni to send follow up email for RP COO to review and confirm no need to consult on this particular activity. RP COO sending email address via text.		
		Text	Incoming	20/08/2024	Receipt of direct email for RP COO.		
		Email	Outgoing	20/08/2024	Email to RP COO with invitations sent to date, activity flyer, confirmation of other engagements and option to opt out.		
		Email	Incoming	20/08/2024	Response from RP that that no further consultation is required for the Council. Consultation effort with Traditional Owners will be provided to council for their information and interest.		
		Email	Outgoing	20/08/2024	Response confirming engagement with TO's, conclusion to consultation.		
Western Australian Local Government							
Shire of Wyndham-East Kimberley	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Shire of Wyndham-East Kimberley since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Shire of Wyndham-East Kimberley to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Shire of Wyndham-East Kimberley to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	21/06/2024	Email to RP CEO follow up from previous engagement, introduction to Petrel consultation.		
		Email	Incoming	3/07/2024	Email response to invitation - after review no comments to offer at this time.		
		Email	Outgoing	3/07/2024	Email thanks for advice, conclusion to consultation effort.		
		Email	Outgoing	11/07/2024	Email inviting face to face consultation. Request for consideration of: - advertising on SWEK for wider access to RP's - Shire briefing - opportunity to connect with Dep President.		
		Email	Incoming	14/07/2024	RP acknowledged email, addressing requests - posting information through SWEK agreed - Petrel presentation - President and Deputy only as doesn't materially affect them - possible meeting on next visit for Economic Dev and Community Dev teams. - cc'd to Deputy President as contact.		
		Text	Outgoing	16/07/2024	To RP (CEO) re Eni's intended visit to Kununurra and agreement to consult face-to-face		
		Phone	Outgoing	16/07/2024	To RP (CEO) re Eni's intended face-to-face consultation and opportunity to have President and Vice President as a part of the consultation.		
		Phone	Outgoing	26/07/2024	To RP (CEO) following up re consultation meeting and best dates with President and Vice President also in attendance		
		Email	Outgoing	30/07/2024	Email confirming posting notice of consultation at SWEK with QR code (poster attached) and confirmation of meeting on 2 August.		
		Email	Incoming	31/07/2024	Confirmation of receipt of poster and instruction to print for reception, Wyndham and the library.		
		Email	Meeting	2/08/2024	In person meeting with RP in Kununurra. Refer to File Note 240802_FN_SWEK_Consultation		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
		Email	Outgoing	8/08/2024	Email to RP following meeting on 2 Aug 2024 and attending EKCCI event on 31 July. Copy of presentation with additional detailed information referenced for review (impacts and mitigations) and offer to present if additional information or explanation required. Conclusion of consultation efforts.		
		Email	Incoming	8/08/2024	RP acknowledge email and presentation receipt with thanks		
Fisheries							
National Fisheries							
Austral Fisheries	2	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult Austral Fisheries since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Austral Fisheries to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Austral Fisheries to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	25/6/24	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Outgoing	2/07/2024	Resent email invitation to consult with updated EP name and activity sheet.		
		Phone	Outgoing	8/07/2024	Called head office in Perth, provided name of person assigned. Left details for return call or email.		
		Phone	Incoming	9/07/2024	Missed call received, no message left.		
		Email	Incoming	9/07/2024	Response to phone call, given distance of activity from trap fishing locations, there is no concern for RP. Provided contact of Executive Officer for Northern Prawn as a relevant person for engagement.		
		Email	Outgoing	10/07/2024	Eni acknowledged receipt of email and provision of Northern Prawn contact information. Confirmed invitation to NP sent and will resend to direct email provided. Conclusion to consultation.		
Commonwealth Fisheries Association	1	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Commonwealth Fisheries Association since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Commonwealth Fisheries Association to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Commonwealth Fisheries Association to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	25/06/2024	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Phone	Outgoing	2/07/2024	RP phone number not available on AFMA site. RP website does not work. Contact listed on World Fishing Net website not connected. Further search for contact information found RP CEO mobile listing.		
		Text	Outgoing	2/07/2024	Text sent in advance of phone call.		
		Text	Incoming	2/07/2024	Person no longer in the position and requested number be removed from contact list.		
		Text	Outgoing	2/07/2024	Confirmed removal.		
		Email	Outgoing	2/07/2024	Resent invitation to consult with updated EP name and flyer.		
		Email	Outgoing	30/07/2024	Resent invitation to consult to RP CEO email address.		
		Phone call	Outgoing	8/08/2024	Called AFMA to see if they have contact information. Advised all phone numbers found are out of date. RP offered to call their contact number to check if valid prior to providing. Contact information operator had also out of date. Directed to email AFMA comms team to see if they can assist (unable to transfer as team in a meeting).		
		Phone call	Incoming	8/08/2024	Operator called back and advised email is the contact information they have, confirmed email address is correct.		
		Email	Outgoing	8/08/2024	Email to AFMA comms to see if phone number available.		
		Email	Outgoing	8/08/2024	Resend email to RP CEO email ahead of any response from AFMA.		
		Text	Outgoing	8/08/2024	Text introduction after receipt of mobile contact to introduce and follow up on consultation.		
		Phone	Outgoing	14/08/2024	Follow up phone call. RP in Hobart and not employed by CFA for several years. Provided current WA contact.		
		Text	Outgoing	14/08/2024	Text introduction after receipt of mobile contact for WA based representative to introduce and follow up on consultation.		
		Email	Incoming	14/08/2024	Receipt of advice from AFMA noting no contact information besides that already discovered by Eni.		
		Phone call	Outgoing	19/08/2024	Call to mobile provided for Perth based CEO following text intro. Left voicemail with reason for call and contact information.		
		Phone call	Outgoing	21/08/2024	Call to RP CEO - call connected and then cut off.		
		Phone call	Outgoing	21/08/2024	Phone call straight to voicemail with message and contact details.		
		Text	Outgoing	21/08/2024	Outgoing text to follow on from voicemail advising of attempts to call, offer to discuss and address any issues that may arise.		
		Phone call	Outgoing	26/08/2024	Phone call to RP CEO. Sent to voicemail. Left reason for call including timeline.		
		LinkedIn	Online	26/08/2024	Message and request to connect with RP CEO on LinkedIn as another means of contact following no success to date.		
		Email	Outgoing	26/08/2024	Email to RP CEO following phone call. Request to engage and understand any issues for CFA in the preparation of the EP. Timeline for consultation effort provided and option to opt out if preferred.		
Email	Outgoing	26/08/2024	Immediate follow up to previous email with flyer attachment.				
Phone call	Outgoing	28/08/2024	Phone call to RP CEO. No answer. Left voicemail with reason for call and contact information.				
Email	Outgoing	29/08/2024	Follow up email to RP CEO seeking opportunity to engage by phone, provision of consultation timeline and opt out option.				
		Email	Outgoing	3/09/2024	Email sent to RP post consultation effort conclusion with commitment to addressing issues for the RP prior to submission. Option to opt out offered.		
Northern Prawn Fishery Industry (NPF)	2	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult Northern Prawn Fisheries since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Northern Prawn Fisheries to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Northern Prawn Fisheries to provide objections or claims in relation to the EP and for
		Email	Outgoing	25/6/24	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Outgoing	2/07/2024	Resent invitation to consult with updated EP name and activity sheet		
		Email	Outgoing	2/07/2024	Second email sent offering meeting with Eni reps to understand how we may best consult active licenced fishers in the activity area.		
		Email	Outgoing	10/07/2024	Resent last email direct to Executive Officer following receipt of direct email from Austral Fisheries.		
		Email	Outgoing	19/07/2024	Follow up email inquiring on assessment with opt out option.		
		Phone	Outgoing	24/07/2024	Phone call to head office number. Left voicemail with details and contact info,		
		Email	Outgoing	30/07/2024	Resent invitation to consult.		
		Email	Outgoing	6/08/2024	Email sent to two new RP emails provided to seek consultation or guidance to individuals who can assess and provided feedback.		
		Email	Incoming	6/08/2024	Notification received that email sent 10 July to EO is no longer valid and message could not be sent.		
		Text	Outgoing	8/08/2024	Text to RP introducing Eni and request for phone call to discuss consultation.		
		Phone call	Incoming	8/08/2024	Contact no longer works for RP. Provided mobile for current RP CEO.		
		Text	Outgoing	8/08/2024	Text to current CEO to intro and request for phone call to discuss consultation.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
		Email	Incoming	9/08/2024	Confirmation by RP CEO of receipt and assessment. - No fishing effort within immediate vicinity - advises the preference for operational activity pertaining to the preference for decommissioning to be scheduled with a view to limiting any impacts on the NPF fishing operations during transit operations. JBG fishery is closed from 1st December to 1st August each year which provides a large window of opportunity for ENI vessels to transit the fishery without any disruption to fishing operations.		consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	19/08/2024	Response to RP CEO with thanks for feedback. Based on email, conclusion to consultation effort with contact information provided should any issues arise or RP wishes to re-engage.		
		Email	Incoming	21/08/2024	Acknowledged by RP with thanks.		
Pearl Producers Australia (PPA)	2	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Pearl Producers Australia since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Pearl Producers Australia to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Pearl Producers Australia to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	25/6/24	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Outgoing	2/07/2024	Searched for phone number. Site only lists email. Re-sent invitation to consult with updating EP name and activity flyer		
		Email	Outgoing	15/07/2024	Resent invitation to consult.		
		Email	Outgoing	25/07/2024	Resent invitation to consult.		
		Text	Outgoing	30/07/2024	Text introduction to RP Executive Officer mobile found through research (WAFIC site) and request for phone conversation to progress consultation invitation.		
		Phone	Outgoing	2/08/2024	Phone call to mobile number found on WAFIC site - incorrect number.		
		Email	Outgoing	2/08/2024	Email to WAFIC contact to get current contact information for RP.		
		Email	Incoming	5/08/2024	Incoming email from WAFIC, no other contact information available, directed to RP website. Eni already using contact information from that site.		
		Phone	Outgoing	8/08/2024	Called PPA office number - voicemail not available and disconnects.		
		Email	Outgoing	8/08/2024	Email sent to RP CEO direct email following further research		
		Email	Incoming	8/08/2024	Email response that RP no longer in the position or contactable at that address. Directed to DPIRD Sustainability and Biosecurity		
		Email	Outgoing	8/08/2024	Email to DPIRD Sustainability and Biosecurity contact referred in email response to Pearl Producers Australia engagement through previous executive officer's direct email. Email included efforts to engage with DPIRD head office.		
		Email	Incoming	8/08/2024	Email address for Sustainability and Biosecurity contact no longer valid.		
		Email	Outgoing	8/08/2024	Email re-sent to DPIRD general email with copies of correspondence to DPIRD and Pearl Producers Australia seeking progression of consultation.		
		Email	Outgoing	14/08/2024	Email forward to second contact at DPIRD provided by PPA email to seek progress for both PPA and DPIRD following regional DPIRD cessation of effort.		
		Phone	Outgoing	15/08/2024	Phone call to DPIRD contact received from PPA auto-response. Not connected.		
		Phone	Outgoing	15/08/2024	Phone call to main DPIRD number. Transferred internally. Advised that this area of DPIRD has not had a resource for three years until recently making consultation efforts difficult. Under resourced. Eni Rep confirmed with RP consultation with DPIRD as RP in its own right and as representative for Pearl Producers Australia. RP invited resend of the information to the environment email and copied to his direct email.		
		Email	Outgoing	15/08/2024	Email with attachments of consultation efforts with both DPIRD and PPA sent to environment email and copied to direct RP.		
		Email	Incoming	20/08/2024	Email response from DPIRD contact redirecting efforts to WAFIC as oversight for Pearl Producers Association.		
Email	Outgoing	21/08/2024	Email to WAFIC RP explaining re-engagement to cover PPA, attachment of flyer for ease of access and offer to discuss by phone.				
Email	Incoming	21/08/2024	Out of office notification - email had already been copied to alternative contact.				
Email	Incoming	22/08/2024	Email from WAFIC noting consultation position statement and confirming information had not been provided to pearl and oyster fishers without a Fee for Service agreement. Confirmation that there has been not pearl / oyster fishing within the operation area and efforts are restricted to shallow waters, WAFIC does not regard PPA as an RP. Guided to DPIRD public data for determination of activity prior to identifying RP.				
Email	Outgoing	22/08/2024	Email thanking RP for response, noting industry position for future consultation consideration and PPA not considered an RP in the location. Conclusion to consultation effort.				
Raptis & Sons	1	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Raptis & Sons since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Raptis & Sons to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Raptis & Sons to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Registered post	Outgoing	21/6/24	Hardcopy of cover letter and flyer (2 locations) - copies in Fisher letters with proof of postage.		
		Email	Outgoing	25/6/24	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Outgoing	2/07/2024	Resent email with updated EP name and flyer. Noted in email that RP may have received hardcopies by registered post.		
		Phone	Outgoing	19/07/2024	Phone call to head office number. Left voicemail with details and contact info,		
		Email	Outgoing	19/07/2024	Re-sent invitation to consult.		
		Registered Post	Outgoing	23/07/2024	Letter, flyer and NOPSEMA guidelines sent by post - two locations. Copies in Fisher letters with proof of postage.		
		Email	Outgoing	2/08/2024	Resent email noting information provided by email, registered post and providing online landing page link.		
		Phone	Outgoing	8/08/2024	Call to Sydney office. No answer, call disconnected. Checked and confirmed number.		
		Phone	Outgoing	8/08/2024	Tried Sydney number again, went to voicemail. Left details and asked for a return call.		
		Email	Outgoing	8/08/2024	Email sent to RP Group Marketing Manager		
		Phone	Outgoing	15/08/2024	Phone call to main number. No answer after on hold. Left voicemail with details, reason for call and requesting call back.		
		Email	Outgoing	15/08/2024	Email to RP Group Marketing Manager and sales email. Follow up on previous invitation. Direct reference to information in the flyer including coordinates, ocean depths and risk/mitigation list.		
		Phone call	Outgoing	21/08/2024	Phone call to head office in Brisbane. Spoke to RP reception. Names found through research are old and not applicable. Email address for the RP Northern Fleet Manager provided for follow up.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
		Email	Outgoing	21/08/2024	Email to RP Northern Fleet Manager with flyer		
		Email	Outgoing	26/08/2024	Follow up email to RP NFM with offer to discuss by phone (number provided) or online. Timeline for consultation provided.		
		Email	Outgoing	28/08/2024	Email follow up to RP NFM with offer to discuss by phone, ability to record responding email with any identified issues.		
		Phone	Incoming	29/08/2024	RP NFM called Eni Rep to discuss activity. RP confirmed that the organisation avoids locations with sub-sea wells and do not operate within the area of the activity. RP confirmed support for the decommissioning of subsea wells in general. Eni Rep confirmed conclusion of consultation effort will come through by email.		
		Text	Outgoing	29/08/2024	Text to RP NFM to advise Eni Rep will confirm conversation by email with conclusion of effort to relieve RP of any additional work.		
		Email	Outgoing	29/08/2024	Email to RP NFM with thanks for the call, confirmation of discussion earlier that morning, conclusion of effort and option to re-engage if required.		
		Email	Incoming	29/08/2024	Email from RP NFM following phone call confirm no issues with the activity.		
		Email	Outgoing	29/08/2024	Thank you to RP NFM for his email and confirming conclusion to effort per Eni Rep email outlining conversation.		
Seafood Industry Australia (SIA)	2	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult SIA since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow SIA to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for SIA to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Incoming	22/06/2024	Email Bounced - error in the address.		
		Email	Outgoing	25/6/24	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call. No bounce notification.		
		Email	Outgoing	2/07/2024	Resent invitation to consult with updated EP name and activity flyer		
		Email	Outgoing	15/07/2024	Resent invitation to consult with opt out option		
		Email	Outgoing	30/07/2024	Resent invitation to consult with opt out option		
		Email	Outgoing	9/08/2024	Email sent direct to RP Stakeholder Engagement Manager following further research for contact information.		
		Text	Outgoing	9/08/2024	Intro text to RP Stakeholder Engagement Manager with request for phone call and notification email sent to direct address.		
		Email	Incoming	9/08/2024	Email for RP Stakeholder Engagement Manager failed.		
		Email	Outgoing	9/08/2024	Email forwarded to RP Communications Manager.		
		Text	Outgoing	9/08/2024	Text introduction to RP Communications Manager and notification of email sent to direct address. Request to call to progress consultation.		
		Phone	Outgoing	14/08/2024	Phone call to RP Communications Manager, left voicemail.		
		Phone call	Outgoing	22/08/2024	Phone call, left voicemail with reason for call and commitment to follow up by text and email,		
		Text	Outgoing	22/08/2024	Follow up text message to phone call with confirmation of resent invitation and request for opportunity to discuss.		
		Email	Outgoing	22/08/2024	Re-sent invitation to consult with flyer, timeline for conclusion to effort and request for phone call to discuss.		
		Email	Incoming	22/08/2024	Email received and distributed to NTSC and WAFIC for direct response.		
Email	Outgoing	22/08/2024	Email to RP with thanks and confirmation that WAFIC and NTSC have already been engaged and efforts concluded. Advice of conclusion to effort with opportunity to reengage if required.				
Tuna Australia	3	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult Tuna Australia's since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Tuna Australia's to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Tuna Australia's to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	26/6/24	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Incoming	1/07/2024	Email response from RP Program Manager with position statement for Tuna Australia that requires a service agreement to continue consultation. Consultation raised in TA weekly meeting.		
		Email	Outgoing	1/07/2024	Eni acknowledged response and receipt of industry statement. Requested a copy of the services agreement template to review and understand RP expectations.		
		Email	Incoming	2/07/2024	Email with draft services agreement for review.		
		Email	Outgoing	1/08/2024	Email response acknowledging position statement. Review of information provided for consultation, links to website, services agreement declined as information provided adequate for consultation, request for response by 2 August with option to extend if required. Request phone call to Eni Snr Advisor to discuss if extension required.		
		Email	Incoming	13/08/2024	Email from RP Program Manager copied to RP CEO and NOPSEMA establishing limited resourcing for consultation amid a tight timeline and respect for follow up. Restatement of RP process for consultation with energy sector and open to continued engagement to meet obligations of Eni to RP in consultation.		
		Email	Outgoing	13/08/2024	Acknowledgement of receipt with thanks and notification that, as with services agreement request, email has been distributed internally for considered response.		
		Email	Outgoing	13/08/2024	Email to RP Program Manager acknowledging limited resources for consultation. Extension of consultation to 15 September. Eni commitment to phone call with RP to discuss opportunities to progress and ensure RP has enough information for consultation consideration.		
		Text	Outgoing	14/08/2024	Text to RP Program Mgr to arrange a time to call		
		Text	Incoming	14/08/2024	Text from RP Program Mgr with availability		
		Text	Outgoing	14/08/2024	Text to RP Program Mgr with altered time and confirmation will send a meeting request		
		Text	Incoming	14/08/2024	Text from RP Program Mgr confirming time and date,		
			Outgoing	14/08/2024	Text to RP Program Mgr with thanks.		
		Phone call	Outgoing	15/08/2024	Phone call to RP Program Manager to discuss response, extension of consultation. Refer to File Note 240815_FN_TA Phone call_Meeting		
		Email	Outgoing	19/08/2024	Email to RP Program Manager with thanks for time on phone, restatement of Eni ethical position for paid consultation, options for immediate and future engagement to progress authentic and genuine dialogue, online meeting offered. Request for consideration of engagement process dependant on the scope of an activity.		
Email	Incoming	20/08/2024	Response to email from RP CEO restating position for paid services to engage, existing relationship with energy companies and consultation efforts under a service agreement to cover potentially affected fishers. Willingness to work collaboratively with Eni.				

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25	
		Email	Outgoing	20/08/2024	Eni response to RP CEO with thanks and advice that email will be reviewed internally for a response before responding.			
					Email to RP (CEO) with thanks for email, appreciation of RPs broad industry position, restatement of genuine effort to engage within Eni code of ethics. Proposal of two previously provided options for immediate engagement on Petrel Decom with future agreement negotiation, based on activity, for potential future consultation. Eni confirmed existing engagement with fishing organisations and commercial fishers. Offer extended for face to face online presentation for current consultation. Confirmation that any information provided not be published if preferred by RP. Request RP re-consider Eni position.			
		Email	Outgoing	23/08/2024				
		Email	Incoming	26/08/2024	RP CEO response to Eni outlining process for consultation and expectation by RP of an agreement being signed to progress consultation.			
		Email	Outgoing	26/08/2024	Email to RP CEO confirming receipt of email and addressees currently in remote locations travelling with limited if any access.			
					Email to RP CEO responding to email of 26/8 and apologising for delay due to travel in remote locations. Noted TA's acknowledgement of time constraints and EP assessments based on risk and potential impact and the short duration of activities and low risk state of the wellheads being P&A'd. Confirmation of Eni Rep willingness to provide information and discussion through multiple forms of consultation for this activity and with more time if operationally viable. Request for negotiation of agreement for long-term collaboration.			
		Email	Incoming	5/09/2024	RP CEO response that a service agreement could have been arranged in the time since consultation commenced. Considers current proposal for assessment further impacts TA resources. Advice of TA sharing international fish stocks and management through various regional fisheries and impact of activities on fish stocks due to a flawed environmental plan. Remain willing to help but not under the terms proposed.			
		Email	Outgoing	6/09/2024	Eni responded to RP CEO that, with regards to the Petrel-3 and Petrel-4 Monitoring and Decommissioning, the company's position remains unchanged. Eni confirmed separate engagement for future EP activities.			
Northern Territory Fisheries								
Northern Territory Seafood Council	1	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult NTSC since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow NTSC to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for NTSC to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.	
		Email	Outgoing	21/06/2024	Forwarding of initial consultation email to CEO following previous engagements to introduce Petrel activity.			
								Email to RP CEO and copied to administration and projects emails following meet and greet. Reference commencement of Petrel Decom Consultation, potential to broadcast activity notification and information on the NTSC website, offer to present in late July as a group or individually to members online where requested.
		Email	Outgoing	25/06/2024				
		Email	Outgoing	10/07/2024	Invitation for face to face consultation meeting in late July with date options.			
		Phone call	Outgoing	12/07/2024	Phone call to NTSC to follow up on email - CEO not available.			
		Email	Outgoing	16/07/2024	Email follow up invitation to consult face to face			
		Phone call	Outgoing	16/07/2024	Called to follow up email, advised to set a meeting for 17 July.			
		Appt	Outgoing	16/07/2024	Phone call appointment send for 17 July.			
		Appt	Incoming	17/07/2024	RP proposed new time and date - 19 July			
		Appt	Outgoing	17/07/2024	Phone call rescheduled for 19 July.			
		Appt	Incoming	17/07/2024	Calendar invite acceptance			
		Phone call	Outgoing	19/07/2024	Called RP to hold scheduled meeting, mobile number given not working. Called to get correct number.			
		Text	Outgoing	19/07/2024	Noted RP was held up in another meeting and missed scheduled meeting. Requested opportunity to reschedule.			
		Phone call	Incoming	19/07/2024	RP called to apologise for missing the meeting. Confirmed has not read Eni email and revert within the hour.			
		Text	Outgoing	19/07/2024	Request for availability and offer to meet in Darwin on 22 July between 11am and 5pm.			
		Text	Outgoing	22/07/2024	Sought feedback as to whether a meeting could occur same day.			
		Phone call	Outgoing	22/07/2024	Spoke to RP to discuss meeting. RP to reach out to RP CEO.			
		Phone call	Outgoing	23/07/2024	Left voicemail for RP CEO to see if available this week.			
		Phone call	Outgoing	23/07/2024	Spoke to RP. Agreed to attempt to send RP CEO a tentative invite for Thursday, 25 July			
		Appt	Outgoing	23/07/2024	Appt schedule for 25 July			
		Appt	Incoming	23/07/2024	Incoming acceptance of appointment with RP CEO for 25 July.			
		Meeting	In person	25/07/2024	Attended meeting with RP as scheduled at RP offices, Fisherman's Wharf, Darwin. Refer to File Note 240725_FN_NTSC_Consultation			
Email	Outgoing	25/07/2024	Email to RP following in person meeting. Attached copy of the poster for the NTSC "weekly rap"					
Email	Incoming	25/07/2024	Confirmation of receipt of email and flyer.					
				Follow up to meeting with copy of consultations slides, commit to: - EP to include consideration of notification to fishers for activity timing including when, why, for how long and explanation of an Exclusion Zone. Close out of consultation unless otherwise advised.				
		Email	Outgoing	4/08/2024				
		Email	Outgoing	4/08/2024	Membership email with link to information on the Petrel Consultation process.			
Northern Wildcatch Seafood Australia (NWSA)	3	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult NWSA since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow NWSA to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for NWSA to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.	
		Email	Outgoing	26/06/2024	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.			
		Email	Outgoing	3/07/2024	Resent invitation to consult with updated EP name and flyer			
		Phone call	Outgoing	24/07/2024	Spoke to RP who advised the Director would notify Eni if there were any concerns. Eni offered to resend the invitation to assist with close out confirmation.			
		Email	Outgoing	24/07/2024	Email to confirm phone call and request for: - activity notifications prior to commencement			
		Email	Outgoing	24/07/2024	Immediate follow up email to the above attaching latest flyer.			
								Confirmation of discussion with RP regarding information provided and approval to conclude consultation effort with no more queries for the development of the Environment Plan.
				Email	Incoming			26/07/2024
		Email	Outgoing	30/07/2024	Eni acknowledged RP email.			

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
Western Australian Fisheries							
West Australian Fishing Industry Council (WAFIC)	2	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult WAFIC since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow WAFIC to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for WAFIC to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	25/6/24	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Incoming	27/6/24	Response to email inviting consultation from Industry Liaison Officer. Request for further information regarding the process to contact WA licence holders that may be effected.		
		Email	Outgoing	10/07/2024	Response email with updated flyer, list of fishing entities engaged, confirmation of consultation on EP with RP is for spill engagement and emergency preparation that affects their member interests, offered summarised OPEP and sought guidance on RP for engaging commercial fishers in the activity location.		
		Email	Incoming	10/07/2024	Auto response advising one RP in email distribution no longer with entity.		
		Email	Incoming	10/07/2024	Auto response advising RP Industry Liaison Officer on leave till end of week.		
		Email	Incoming	16/07/2024	Email from RP Industry Liaison Officer requesting - confirmed research of any overlap of the operational area with commercial capture efforts - OPEP summary.		
		Email	Outgoing	24/07/2024	Email response confirming - The operational area only intersected with the Commercial Wild Catch component and did not intersect with the 10NM and 60NM Tour Operator or Commercial Collector components. - Similarly, the Monitoring EMBA did not intersect with the 10NM Commercial Collector component. Research and results in OA show no commercial capture. Eni advised OPEP can be provided post regulatory approval.		
		Phone Call	Incoming	24/07/2024	Phone call from RP Industry Liaison Officer, new in position, satisfaction with information provided. WAFIC interest in approved OPEP and confirming conclusion of consultation effort to be sent by email.		
		Email	Incoming	24/07/2024	Email confirmation of request for OPEP when approved and formal close out of consultation for this activity.		
		Email	Outgoing	24/07/2024	Email response of thanks.		
		Email	Outgoing	21/08/2024	Email to RP Industry Liaison Officer explaining re-engagement to cover PPA, attachment of flyer for ease of access and offer to discuss by phone.		
		Email	Incoming	22/08/2024	Email from RP Industry Liaison Officer noting consultation position statement and confirming information had not been provided to pearl and oyster fishers without a Fee for Service agreement. Confirmation that there has been not pearl / oyster fishing within the operation area and efforts are restricted to shallow waters, RP does not regard PPA as an RP. Guided to DPIRD public data for determination of activity prior to identifying RP.		
		Email	Outgoing	22/08/2024	Email thanking RP Industry Liaison Officer for response, noting industry position for future consultation consideration and PPA not considered an RP in the location. Conclusion to consultation effort.		
Individual Fishing Licensees by Fishery							
Aboriginal Coastal Fishers (5 individual licensees)							
Fisher 1	2	Registered Post	Outgoing	28/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.	N	Eni has been seeking to consult five individual Aboriginal Coastal Fishers since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow the five individual Aboriginal Coastal Fishers to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for the five individual Aboriginal Coastal Fishers to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 2	Registered Post	Outgoing	28/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.			
	Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.			
Fisher 3	Registered Post	Outgoing	28/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.			
	Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.			
Fisher 4	Registered Post	Outgoing	28/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.			
	Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.			
Fisher 5	Registered Post	Outgoing	28/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.			
	Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.			
	Phone Call	Incoming	14/08/2024	Call through established contact line from Fisher 5 with request for return call.			
	Phone call	Outgoing	14/08/2024	Call to fisher responding to query leaving voicemail advising reason for call and contact information.			
	Text	Outgoing	3/09/2024	Follow up to RP to confirm if there were any issues or concerns that needed to be recorded and/or addressed.			
		Phone call	Incoming	3/09/2024	Phone call with RP confirming attendance at an Eni meeting and receipt of information. Confirmation that activities for the Monitoring and Decommissioning are too distant to affect him. RP thanked for his time.		
Coastal Line Fishers (35 individual licensees)							
Fisher 6		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
Fisher 39		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 40		Registered Post	Outgoing	28/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Demersal Fishers (15 individual licensees - includes RP20)							
Raptis & Sons	2	Registered Post	Outgoing	Refer to Raptis & Sons	Consultation effort under Raptis & Sons	N	Eni has been seeking to consult 15 individual Demersal Fishers since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow the 15 individual Demersal Fishers to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for the 15 individual Demersal Fishers to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
Fisher 41		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 42		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 43		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 44		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 45		Registered Post	Outgoing	28/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 46		Registered Post	Outgoing	28/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 47		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 48		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 49		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 50		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 51		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 52		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 53		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 54		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Kimberley Prawn Fishers (1 licensee)							

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
Fisher 55	2	Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.	N	Eni has been seeking to consult an individual Kimberley Prawn Fisher since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow the individual Kimberley Prawn Fisher to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for the individual Kimberley Prawn Fisher to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Mollusc Fishers (1 licensee)							
Fisher 56	2	Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.	N	Eni has been seeking to consult an individual Mollusc Fisher since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow the individual Mollusc Fisher to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for the individual Mollusc Fisher to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Offshore Net & Line Fishers (6 individual licensees)							
Fisher 57	2	Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.	N	Eni has been seeking to consult six individual Offshore Net & Line Fishers since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow the six individual Offshore Net & Line Fishers to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for the six individual Offshore Net & Line Fishers to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 58		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
Fisher 59		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
Fisher 60		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
Fisher 61		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
Fisher 62		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Timor Reef Fishers (3 individual licensees)							
Fisher 63	2	Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.	N	Eni has been seeking to consult three individual Timor Reef Fishers since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow the three individual Timor Reef Fishers to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for the three individual Timor Reef Fishers to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 64		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Fisher 65		Registered Post	Outgoing	20/06/2024	Registered post containing cover letter and activity flyer inviting engagement if receiver has any issues or feedback.		
		Registered Post	Outgoing	23/07/2024	Registered post containing cover letter, activity flyer, NOPSEMA "Consultation on offshore petroleum environment plans; Information for the community", NOPSEMA, May 2023 inviting engagement if receiver has any issues for feedback.		
Western Deepwater Trawl (1 licensee)							
Fisher 65	2	Registered Post	Outgoing	Refer to Raptis & Sons	Consultation effort under Raptis & Sons	N	Refer to Raptis & Sons

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
Aboriginal and Torres Strait Islander/ First Nations Community							
National							
Indigenous Land and Sea Corporation (ILSC)	2	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult ILSC since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow ILSC to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for ILSC to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Incoming	20/6/24	Auto acknowledgement of receipt and response as soon as possible.		
		Phone	Outgoing	2/07/2024	Phone call to confirm receipt of consultation invitation. Two attempts. Operator advised Eni to send to centraloffice@ilsc.gov.au and it will be distribute internally.		
		Email	Outgoing	2/07/2024	Resent invitation to consult with updated EP name and flyer to distribute internally.		
		Email	Outgoing	15/07/2024	Email advising of engagements travel and offer for face to face consultation with opt out option.		
		Phone	Outgoing	8/08/2024	Call directed to Perth office as regional office attendant away. Requested resend of information to Western and Central offices.		
		Email	Outgoing	8/08/2024	Email resent to both emails provided with thanks for assistance.		
		Phone	Outgoing	15/08/2024	Phone call to central office to follow up. RP Reception unsure who the internal person would be and requested email be sent RP direct address for action for follow up.		
		Email	Outgoing	15/08/2024	Forwarded email trail of invitation to consult with activity flyer to central office and western office receptions and central office reception direct email. Reception offered to review and distribute to the right person.		
		Phone Call	Outgoing	22/08/2024	Answered by Western Officer voicemail. Left message with reason for call and will also try Central Office and resend invitation to consult.		
		Phone Call	Outgoing	22/08/2024	Phone call to Central Office directed to voicemail, left message for RP reception with reason for call and commitment to re-send invitation to consult. Requested a return call to discuss.		
		Email	Outgoing	22/08/2024	Email to Central and Western offices, direct reception and generic contact email to follow up on phone call, provide timing and activity flyer and invite any issues or queries. Opportunity to opt out provided if preferred.		
		Email	Incoming	22/08/2024	Out of office notification from direct email only.		
		Email	Outgoing	26/08/2024	Email follow up marked High Importance with timeline, direct contact number for Eni Rep.		
		Phone Call	Outgoing	29/08/2024	Call to Central office. Sent to voicemail. Left message with reason for call with contact information.		
Email	Outgoing	3/09/2024	Email to Central and Western offices with commitment to receiving input post consultation effort conclusion and prior to EP submission.				
Northern Australia Indigenous Land & Sea Management Alliance (NAILSMA)	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult NAILSMA since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow NAILSMA to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for NAILSMA to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	30/07/2024	Follow up email to consult on EP with updated flyer.		
		Text	Outgoing	8/08/2024	Text intro ahead of phone call to consult.		
		Text	Incoming	8/08/2024	Text response advising activity not something they would normally engage in and opting out of further consultation.		
		Text	Outgoing	8/08/2024	Text response with thanks for advice and confirmation of preference.		
National Indigenous Australians Agency (NIAA) - Kununurra	3	Email	Outgoing	12/07/2024	Follow up email to stakeholder engagement efforts in May and June. Notification of consultation commencement for Petrel Decommissioning and dates for face to face meetings in Kununurra. Eni seek assistance including specific follow up with RP, distribution of attached Petrel Flyer and contact information for TO RP's.	N	Eni has been seeking to consult NIAA since it issued information regarding this EP in July 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow NIAA to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for NIAA to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Incoming	12/07/2024	Notification of leave and availability for face to face. Provision of contact information across TO's. Agreement to accompany Eni to Wyndham and Kalumburu. Liaison contacts provided to cover RP absence.		
		Email	Outgoing	12/07/2024	Acknowledgement and progress with contact provided during leave with commitment to set up engagements.		
		Meeting	In Person	29/07/2024	In person meeting and presentation in Kununurra, WA. Refer to File Note 240729_FN_NIAA Kununurra_Meeting		
		Email	Outgoing	30/07/2024	Follow up to meeting with copy of presentation, confirmation of meeting with Traditional Owners in Kalumburu. Invitation to attend meeting in Kalumburu.		
		Email	Outgoing	30/07/2024	Follow up email to clarify the date of the Kalumburu visit is the 28th August.		
		Phone Call	Outgoing	8/08/2024	To RP re Eni's intended visit to Kalumburu and checking as to whether RP is planning to attend.		
		Phone Call	Outgoing	12/08/2024	To RP re discussion about Eni's intended visit to Kalumburu – still under consideration by RP. Also about how to contact other RPs.		
		Email	Outgoing	13/08/2024	Eni provided RP with progress of meeting arrangements in Kalumburu and request for assistance in contacting a TO RP to continue consultation efforts. Request for RP confirmation to attend meeting in Kalumburu and assistance with contact information for the Rangers in the region.		
		Email	Incoming	13/08/2024	Confirmation of Assistant Director for NIAA attendance at Kalumburu meeting along with additional representative. Contact information for Healthy Country Manager/Ecologist.		
		Email	Outgoing	13/08/2024	RP confirmed attendance and contact information provided for requested TO consultation assistance.		
		Email	Outgoing	13/08/2024	Eni acknowledged receipt of contact information.		
		Phone Call	Outgoing	19/08/2024	To RP re planning discussion about Eni's intended visit to Kalumburu and meeting with 3 other RPs – logistics, communication, catering, venue.		
Meeting	In Person	28/08/2024	Attendance at Kalumburu meeting - refer to File Note 240828_FN_Kalumburu Community Consultation Meeting				

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
		Email	Outgoing	5/09/2024	<p>Follow up email to Kalumburu meeting and RP support and attendance of the on-Country meeting where Eni consulted directly with 30 representatives from Balangarra AC, Wunambal Gaambera AC and Kalumburu AC. Copy of presentation attached. Confirmation of</p> <ul style="list-style-type: none"> - individual follow up with each community present at the meeting - summary of comments from individual TO groups - request from a TO group in attendance that consideration for 'peer review' support for future development clarifying the relatively low impact of the decommissioning activities, submission timing and confirming unlikely vessel collision EMBA does not impact the coast - commitment to ongoing, positive engagement with the communities into the future. - commitment to hold further consultation efforts with opening for submission of feedback by 15 September. 		
Northern Territory							
Larrakia Development Corporation	3	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Larrakia Development Corporation since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Larrakia Development Corporation to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Larrakia Development Corporation to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	21/06/2024	Sent invitation to consult to engaged RP's to confirm consultation commencement for Petrel Decom.		
		Phone Call	Outgoing	28/06/2024	Spoke to RP rep. who advised she isn't always available. Offer to re-send the email and RP would distribute internally. Thanked for time.		
		Email	Outgoing	28/06/2024	Re-sent email to RP with cover advising of the courtesy forward to RP CEO		
		Email	Outgoing	3/07/2024	Resent invitation to consult with update EP name and flyer		
		Email	Outgoing	10/07/2024	Email to RP CEO inviting face to face meeting in late July with date offers.		
		Phone call	Incoming	12/07/2024	Phone call from RP Business Mgr		
		Email	Outgoing	12/07/2024	Email to RP Business Mgr providing previous correspondence for reference and coordination for meetings.		
		Email	Incoming	12/07/2024	Response with offer to meet on 22 July. Request for confirmation and details.		
		Email	Outgoing	15/07/2024	Eni acknowledge receipt and confirmed meeting.		
		Email	Meeting	22/07/2024	Face to face consultation meeting with LDC in LDC office, East Arm, NT. Refer to File Note 240722_FN_LDC_Meeting		
Email	Outgoing	22/07/2024	Post meeting email with copy of presentation, flyer and original email invite to consult for distribution to other potential relevant persons.				
Larrakia Nation Aboriginal Corporation	3	Email	Outgoing	21/06/2024	Email sent with cover referencing recent meeting and confirming official consultation commencement of Petrel 3 and 4 Mon and Decom.	N	Eni has been seeking to consult Larrakia Nation Aboriginal Corporation since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Larrakia Nation Aboriginal Corporation to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Larrakia Nation Aboriginal Corporation to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	10/07/2024	Email sent to RP CEO, DCEO and EA offering face to face meeting and presentation on Petrel 3 & 4 Mon and Decom in late July. Request for time with the Ranger Groups for potential collaboration.		
		Email	Incoming	10/07/2024	Response to email invitation advising RP currently focussed on NAIDOC week and will respond end of following week.		
		Email	Outgoing	10/07/2024	Response acknowledged by Eni. Well wishes for NAIDOC. Commitment to reconnect prior to travel.		
		Meeting	In-Person	23/07/2024	Attended meeting with RP Deputy CEO in RP office, Coconut Grove NT. Refer to File Note 240723_FN_Larrakia Nation_Consultation		
		Email	Outgoing	31/07/2024	Email follow up thanking RP Deputy CEO for attending meeting, copy of slides presented in the meeting and confirmation of RP advice that no further consultation is necessary.		
Northern Land Council	3	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult NLC since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow NLC to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for NLC to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Text	Outgoing	27/6/24	Text advance notice of phone call regarding invitation to consult sent to RP EA.		
		Text	Incoming	27/6/24	Text response from RP EA requesting the email be sent to her directly so she can check receipt and distribution.		
		Text	Outgoing	27/6/24	Acknowledged request with thanks.		
		Email	Outgoing	27/6/24	Resent email - email bounced.		
		Text	Outgoing	28/6/24	Advised RP of bounce back. RP responded that it is a common occurrence due to the double letters in name. Email corrected.		
		Email	Outgoing	28/6/24	Re-sent email to updated address.		
		Email	Outgoing	3/07/2024	Email follow up thanking RP EA and providing updated flyer and EP name.		
		Email	Incoming	3/07/2024	Out of office		
		Email	Outgoing	10/07/2024	Email to RP EA and cc'd for Top End AC capture for consultation to confirm meeting on 24 July.		
		Email	Incoming	23/07/2024	Email from RP EA requesting meeting timing change		
		Email	Outgoing	23/07/2024	Email to RP EA confirming options for preferred date.		
		Email	Incoming	24/07/2024	Email thanks for alteration to timing and confirming available for one hour.		
		Meeting	In-Person	25/07/2024	Face to face meeting with RP Interim CEO in boardroom, Darwin, NT. Refer to File Note 240725_FN_NLC_Consultation		
		Email	Outgoing	31/07/2024	Email to RP Interim CEO with thanks for meeting on 25th, copy of presentation, confirmation of conclusion to consultation following meeting unless notified otherwise.		
Email	Incoming	1/08/2024	Response confirmation no further consultation required. Request for notification in the event of an accident, incident or hazard associated with the activity that may impact the NT coastline or sea country and consulted on any mitigation activities.				
Email	Outgoing	1/08/2024	Email commitment to RP to ensure notification in the event of an accident, incident or hazard associated with the project that may impact the NT coastline or sea country and that RP will be consulted on relevant mitigation activities.				
		Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
Thamarrurr Development Corporation	3	Phone call	Outgoing	27/6/24	Called RP main number. Advised person responsible for the email address sent to is away, provided alternate email to forward and offer to address internally.	N	Eni has been seeking to consult Thamarrurr Development Corporation since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Thamarrurr Development Corporation to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Thamarrurr Development Corporation to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	27/6/24	Forward the invitation to consult to the advised email address with thanks for assistance.		
		Email	Incoming	27/6/24	Automatic response acknowledging receipt of invitation to consult.		
		Email	Outgoing	3/07/2024	Resent invitation to consult with update EP name and flyer.		
		Email	Outgoing	11/07/2024	Invitation to join Wadeye community update on 23 July for face to face consultation. Include offer to meet with Thamarrurr Rangers and Wadeye Coastal Fishers. Offer to opt out of consultation if not required.		
		Phone	Incoming	11/07/2024	From RP (D/CEO) re intended visit to Wadeye on 23 July. There is a major funeral and that its best to steer clear for the entire week.		
		Email	Outgoing	11/07/2024	Email thanks for phone call and reissue of invite to meet in Darwin late July. Query on meeting with reps in the TDC office in Winnellie or Wadeye.		
		Email	Incoming	22/07/2024	Advice from RP all in Wadeye and next board meeting 31 July.		
		Email	Outgoing	23/07/2024	Timing of consultation options to include online meeting due to conflicting schedules. Offer to meet in person at Wadeye 6, 8 August or 22 August.		
		Email	Incoming	9/08/2024	RP response copied to EA to provide Eni with information on timing for next Board meeting.		
		Email	Outgoing	12/08/2024	Email to RP EA seeking information on meeting with TDC at earliest convenience to continue consultation on Petrel activity. Provision of options for online meeting between 4 and 16 September or in person board meeting (date tbc) if those dates don't work.		
		Text	Outgoing	14/08/2024	Follow up with RP (EA) to follow up email sent 12/08/24 and asking for a good time to call.		
		Text	Incoming	15/08/2024	Reply from RP (EA) apologising for delay and informing CEO will contact by COB today.		
		Phone	Incoming	16/08/2024	From RP CEO to discuss upcoming visit to Wadeye.		
		Email	Outgoing	16/08/2024	Email follow up to RP and request for face to face engagement online or in person in September.		
		Email	Incoming	16/08/2024	Out of office notification directing incoming emails to admin support email address.		
		Email	Outgoing	16/08/2024	Forwarded follow up email to admin support email address as guided by out of office notification.		
		Email	Incoming	16/08/2024	Auto response to email sent to admin support.		
		Text	Outgoing	16/08/2024	To RP (CEO) to update availability over September for Wadeye meetings.		
		Text	Incoming	19/08/2024	From RP (CEO) re TDC availability – 18/19 preference.		
		Text	Outgoing	19/08/2024	To RP (CEO) acknowledging text and commitment to follow up with an email.		
		Email	Outgoing	19/08/2024	Eni Rep response to text confirming advice received and continuation of working towards face to face meeting in mid-September.		
		Email	Outgoing	20/08/2024	Confirmation of meetings with RP and others in Wadeye on 18 and 19 September. Opportunity to meet with Wadeye Aboriginal Coastal Licensees. Travel arrangements almost complete.		
		Email	Incoming	27/08/2024	Confirmation of meeting in Wadeye on 18/19 September. Room availability with AV. Additional support available for inviting TO's.		
		Email	Incoming	27/08/2024	Incoming calendar invitation for 18 and 19 September to Eni Reps with confirmed location.		
		Email	Incoming	6/09/2024	RP EA advised Eni of three funerals scheduled for planned week of engagement and requested a reschedule to the following week.		
		Email	Outgoing	9/09/2024	Eni Rep acknowledged email and commitment to advise following internal discussion.		
		Text	Outgoing	9/09/2024	To RP to seek time for phone call		
		Phone call	Outgoing	9/09/2024	Eni Rep called RP EA to discuss options for engagement - no answer, left voicemail.		
		Email	Outgoing	9/09/2024	Eni Rep followed up phone call with email to RP EA confirm the visit had been cancelled and could not be rescheduled prior to end of September and the submission of the EP. Confirmation of extensive effort to engage face to face during consultation period. Request for phone call to discuss future options for face to face consultation. Direct mobile provided.		
		Calendar Invite	Incoming	9/09/2024	Cancellation of meeting for 18 and 19 September per RP advice.		
		Email	Incoming	9/09/2024	RP EA responded to email advising of annual leave for requested RP response and alternate RP will be in contact later in the week to discuss future options.		
		Email	Outgoing	9/09/2024	Email acknowledged with thanks.		
Text	Outgoing	13/09/2024	Text to RP to schedule a call.				
Text	Incoming	16/09/2024	RP advice to Eni of bereavement leave				
Text	Outgoing	16/09/2024	Eni acknowledgement of text.				
Phone Call	Outgoing	16/09/2024	Phone call with RP.				
Email	Outgoing	16/09/2024	Eni request for RP return date from leave to discuss activity.				
Email	Incoming	16/09/2024	RP confirmed return date from leave.				
Email	Outgoing	16/09/2024	Eni rep acknowledged advice and schedule alignment to arrange a meeting for 24 September.				
Tiwi Land Council	3	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult TLC since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow TLC to make an informed assessment of the possible consequences of the activities the subject of this EP on their
		Email	Outgoing	21/06/2024	Email to RP previously engaged and introducing Petrel Decom activity and consultation.		
		Email	Outgoing	26/6/24	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Outgoing	3/07/2024	Re-sent email invitation to consult with updated EP name and flyer		
		Email	Incoming	5/07/2024	Email acknowledgement of receipt. RP will review and provide feedback in due course. Updated email address.		
		Email	Outgoing	10/07/2024	Invitation for face to face consultation meeting in July with dates and details re engagement for Petrel Decommissioning, proposed cultural heritage study agreement. Petrel Decom Activity Flyer attached.		
		Phone	Outgoing	12/07/2024	Voicemail left with RP (EA) to discuss upcoming visit to Darwin		
		Text	Outgoing	12/07/2024	Follow up with RP (EA) to discuss upcoming visit to Darwin		
		Text	Outgoing	12/07/2024	To alternative RP (Officer) to discuss upcoming visit to Darwin 22-26 July		
		Text	Incoming	12/07/2024	From alternative RP (Officer) who is on leave today but has texted CEO		
		Text	Outgoing	12/07/2024	To alternative RP (Officer) acknowledging message.		
		Email	Incoming	12/07/2024	Email from RP RE follow up. Advice of Full Council meeting in Wurrumiyanga 23/24 July which will include TIC position on sea country engagement and potential for consultation meeting on 26 July to progress first and second points raised in email.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
		Text	Incoming	15/07/2024	Reply from RP (EA) to discuss availability and timing		possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for TLC to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Text	Outgoing	15/07/2024	Immediate reply to RP (EA) to inform replying directly to CEO		
		Text	Incoming	15/07/2024	Acknowledgement from RP (EA)		
		Email	Incoming	16/07/2024	RP acknowledge Eni email confirming meeting.		
		Email	Incoming	17/07/2024	Request to reschedule meeting as 26 July is a public holiday in the NT.		
		Email	Outgoing	17/07/2024	Confirmation of meeting at slightly later time than requested with flexibility available.		
		Email	Incoming	17/07/2024	RP confirmed meeting time for 25 July		
		Email	Outgoing	17/07/2024	Eni acknowledged receipt and RP flexibility		
		Meeting	In-Person	25/07/2024	Attended meeting with RP as scheduled in TLC offices, Winnellie, NT. Refer to File Note 240725_FN_TLC_Consultation		
		Email	Outgoing	4/08/2024	Thanks for time and confirmation of: - internal TLC classification of consultation activities with Petrel an information only and not for council review. Consultation close out confirmation.		
Email	Incoming	5/08/2024	Thanks and not that internal TLC categories referred to remain a work in progress with council members however current position accurately reflected in email of 4/8.				
Top End (Default PBC/CLA) Aboriginal Corporation RNTC	3	Phone Call	Outgoing	20/6/24	Phone call to landline, RP confirmed contact email.	N	Eni has been seeking to consult Top End AC since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Top End AC to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Top End AC to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.		
		Phone Call	Outgoing	27/6/24	Rang to thank for help. Noted call was to follow up on information provided and offering further assistance. Left phone number for return call with thanks.		
		Email	Outgoing	3/07/2024	Re-sent email invitation with updated EP name and flyer		
		Email	Outgoing	10/07/2024	Email with cc for Top End capture invitation consultation to confirm meeting on 24 July.		
		Email	Outgoing	9/08/2024	Email to new contact for Top End AC seeking consultation progression, noting parallel consultation efforts with NLC.		
		Email	Incoming	9/08/2024	RP response advising RP is an agent PBC and cannot make decisions on behalf of NT holders. Offer for Eni to present to RP directors in December 2024.		
		Email	Outgoing	12/08/2024	Eni query to RP to confirm his previous advice in NLC engagements, that information would not be passed on to TO's at this time due to competing priorities, also applies to Top End AC whom RP also represents. Provision of activity flyer noting EMBA location is unlikely to NT owners land and seas. Acknowledgement of opportunity to address Top End Board in December post submission remains a target for Eni in ongoing relationship and two way dialogue.		
		Email	Incoming	12/08/2024	RP out of office notification returning 19 August.		
		Email	Outgoing	23/08/2024	Email to RP to confirm advice received in NLC engagements regarding TO priorities and information distribution, the same advice applies to Top End AC as RP acts as a representative for that organisation also. Appreciation for the potential to present to the Top End AC Directors in December.		
		Phone call	Outgoing	26/08/2024	Phone call to the main number listed on ORIC Notification of change to corp address and contact details. Message left on voicemail with reason for call and contact details.		
		Phone call	Outgoing	29/08/2024	Phone call to the main number, left message. (No voicemail message just a beep but not a hang up so message left).		
		Email	Outgoing	29/08/2024	Email to RP following up on advice provided on NLC engagement and confirming same advice applies for Top End AC as RP also represents that organisation. Noted Eni reps looking forward to presenting to RP directors in October or early in 2025.		
		Phone call	Outgoing	5/09/2024	Phone call to main office number. Left message. (No voicemail message just a beep but not a hang up so message left).		
Text	Outgoing	10/09/2024	Text to RP to follow up on email and phone call.				
Western Australia							
		Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.		
		Text	Outgoing	27/6/24	Text advance notice of phone call regarding invitation to consult sent to admin.		
		Phone	Outgoing	1/07/2024	Phone call went to voicemail - message with detail for call left and advice that email would be re-sent.		
		Email	Outgoing	1/07/2024	Email re-sending invitation to consult following voicemail left with RP.		
		Email	Outgoing	12/07/2024	To RP confirming consultation commencement for Petrel Decommissioning. Details of face to face meetings in Kununurra, Wyndham and Kalumburu in late July early August. Request for - assistance with meeting arrangements with Balanggarra people in Kalumburu - face to face with email recipients - opportunity to present to BAC board - face to face meetings in the community - visit to Balanggarra Ranger facility in Wyndham.		
		Phone	Outgoing	18/07/2024	Left voice message for RP (Chair) to follow up on email sent 12 July and mentioned intention to visit Kalumburu.		
		Text	Outgoing	18/07/2024	Texted RP (CEO) to follow up on email sent 12 July.		
		Text	Outgoing	18/07/2024	Texted RP (Chair) to follow up on email sent 12 July. Asked if available to take a call.		
		Phone	Outgoing	22/07/2024	Left voice message for RP (CEO) to try set up a time to meet.		
		Phone	Outgoing	22/07/2024	Left voice message for RP (Chair) to try set up a time to meet, discuss Kalumburu and a potential meeting in Wyndham.		
		Text	Outgoing	22/07/2024	Texted RP (CEO) to try set up a time to meet.		
		Phone	Outgoing	24/07/2024	Left voice message for RP (CEO) re Eni in Kununurra next week and trying to set up a meeting with RP. Also requested to talk about visit to Kalumburu.		
		Text	Outgoing	24/07/2024	Texted RP (CEO) re Eni in Kununurra next week and trying to set up a meeting with RP. Also requested to talk about visit to Kalumburu. Asked for a good time to call.		
		Phone	Outgoing	24/07/2024	Left voice message for RP (Chair) re Eni in Kununurra next week and hoping to set up a meeting with RP. Also requested to talk about visit to Kalumburu.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
Balanggarra Aboriginal Corporation	3	Text	Outgoing	24/07/2024	Texted RP (Chair) re Eni in Kununurra next week and hoping to set up a meeting with RP. Also requested to talk about visit to Kalumburu. Asked for a good time to call.	Y	Eni has been seeking to consult Balanggarra Aboriginal Corporation since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Balanggarra Aboriginal Corporation to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Balanggarra Aboriginal Corporation to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Phone	Outgoing	24/07/2024	Left voicemail for RP (Secretary) re Eni in Kununurra next week and hoping to set up a meeting with RP. Unable to contact CEO or Chair. Also requested to talk about visit to Kalumburu.		
		Text	Outgoing	24/07/2024	Texted RP (Secretary) re Eni in Kununurra next week and hoping to set up a meeting with RP. Unable to contact CEO or Chair. Also requested to talk about visit to Kalumburu. Asked for a good time to call.		
		Phone	Outgoing	24/07/2024	Called RP (Board member) to introduce and discuss the opportunity to meet. He is a Balanggarra TO that lives in Wyndham and heads out to Kalumburu often. He is going there for 2 weeks next week. He can catch up with CEO in Wyndham on Sundays at the local football. Agreed we would send him the materials for Petrel. Agreed to keep in contact in the future.		
		Text	Incoming	25/07/2024	RP (CEO) replied to say she would be away next week. But she is meeting with Chair today and will notify him that Eni is looking to meet him.		
		Text	Outgoing	25/07/2024	Texted RP (CEO) to thanks for response, and informed that we had also had a good chat with RP (Board Member) (showing as read)		
		Phone	Outgoing	26/07/2024	Left voice message for RP (Chair) re Eni in Kununurra this week and hoping to set up a meeting and discuss visit to Kalumburu.		
		Text	Incoming	27/07/2024	Texted RP (Chair) apologising for the constant attempted contact but requesting a time to talk about meeting the following week.		
		Phone	Outgoing	29/07/2024	Call to RP - no answer		
		Phone	Outgoing	30/07/2024	Call to RP with no response, directed to voicemail. Left voice message to RP informing of Eni team visit to Kununurra and opportunity to meet.		
		Phone	Outgoing	30/07/2024	Attempted to call RP (Chair) – no answer.		
		Phone	Outgoing	30/07/2024	Quick discussion with RP (Board Member) – to say unable to get Chair on phone. Committed to send an information email to him.		
		Text	Outgoing	30/07/2024	Texted RP (Board Member) thanking for the chats and committing to send an email.		
		Phone	Outgoing	30/07/2024	Phone call to RP to discuss engagement efforts.		
		Email	Outgoing	30/07/2024	Email follow up to phone call with opportunities for face to face in Kalumburu late August.		
		Meeting	Face to Face	2/08/2024	Met RP (Chair) by coincidence at Wild Mango Café, Kununurra. Discussed the difficulty in getting in contact and acknowledged his competing commitments. He suggested that he will put Eni on to RP (Board Member) to handle consultations and engagements if he is not in a position to handle. Said he would put in email or text.		
		Text	Outgoing	2/08/2024	RP (Chair) to hopefully save him time. Said it was good to catch up at Wild Mango this morning and sought confirmation about whether it was okay for Eni to deal with RP (Board Member) if he (Chair) was too busy. Proposed we can copy him (Chair) in on any email so he knows what's going on. Sought confirmation.		
		Text	Outgoing	8/08/2024	To RP (CEO) notifying that we have locked down visiting some of their group in Kalumburu and suggesting we visit Home Valley station – an RP enterprise, on the way		
		Text	Outgoing	8/08/2024	To RP (Board Director) asking if available to discuss visit to Kalumburu.		
		Phone	Outgoing	8/08/2024	With RP (Board Director) to discuss visit to Kalumburu.		
		Phone	Outgoing	12/08/2024	left voicemail for RP (CEO) re we have locked down visiting some of their group in Kalumburu and suggesting we visit Home Valley station.		
		Email	Outgoing	12/08/2024	To RP following phone call with information on visit to Kalumburu and provision of itinerary for opportunity to consult in person. Request for assistance in contacting additional RP representative with option for meeting 2 September in Wyndham.		
		Email	Outgoing	13/08/2024	Email to RP restating commitment to meeting with RP given proximity to Eni operations. Offer to call to discuss opportunities in visit to Wyndham in early September.		
		Email	Incoming	13/08/2024	RP acknowledged receipt and possibility of in person meeting between Kalumburu and Wyndham.		
		Phone	Outgoing	16/08/2024	Left voicemail for RP (Board Director) to see if available for a call.		
		Text	Outgoing	16/08/2024	To RP (Board Director) to see if he might be in Kalumburu on 28/09/24, for when we visit there to meet some of their group. Also to potentially set up a meeting in Wyndham to meet some more of their group on 2 or 3 September.		
		Phone	Outgoing	16/08/2024	Left voicemail for RP (CEO) to please call.		
		Text	Incoming	16/08/2024	From RP (CEO) notifying she'd been away for the past few weeks and will give a call.		
		Text	Incoming	16/08/2024	From RP (CEO) saying she's been caught up and will call in the morning.		
		Phone	Outgoing	19/08/2024	Left voicemail for RP (CEO) that trying to get in contact regarding visiting some of their group in Kalumburu and suggesting we visit Home Valley station.		
		Text	Outgoing	19/08/2024	To RP (CEO) following up to see if available for a call.		
		Text	Outgoing	19/08/2024	To RP (Board Director) to discuss visit to Kalumburu 28/09/24 and setting up a meeting in Wyndham to meet some more of their group.		
		Phone	Incoming	19/08/2024	With RP (Board Director) re logistics for visit to Kalumburu 28/09/24, setting up a meeting in Wyndham 02/09/24 and engaging with Rangers .		
		Text	Outgoing	19/08/2024	To RP (Board Director) request for Rangers contact		
		Text	Incoming	19/08/2024	From RP (Board Director) re contact details for Rangers.		
		Email	Outgoing	19/08/2024	Confirmation of phone discussion regarding Kalumburu visit, location for presentation, separate meetings with various groups in Kalumburu, meeting in Wyndham in Shire offices for 2 September. Contact details for Balanggarra Rangers in Wyndham.		
		Phone	Incoming	21/08/2024	From RP (CEO). Discussed difficulty in getting in contact; protocols for working with and attempting to visit other members; visiting Home Valley Station, and her dissatisfaction with us not choosing to stay at Home Valley Station on the trip to Kalumburu despite its close proximity to Kununurra.		
		Text	Incoming	21/08/2024	from RP (CEO) providing contact details for Home Valley Station.		
		Text	Outgoing	21/08/2024	to RP (CEO) thanking for contact details and for discussion.		
		Text	Outgoing	22/08/2024	To RP (Board Member) query on numbers attending Balanggarra meeting		
Email	Outgoing	22/08/2024	Email following phone call to advise on arrangements for visit to Kalumburu, attendees and contact information. Copy of consultation poster attached.				
Email	Incoming	22/08/2024	RP responded to email with thanks.				
Email	Outgoing	22/08/2024	Email to RP confirming arrangements for face to face meeting on 2 September, request for assistance with catering contacts and Ranger information. Thanks to all those who have assisted.				

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
		Text	Outgoing	24/08/2024	To RP (Board Member) head of Kalumburu meeting and Eni arrival in Kununurra.		
		Text	Incoming	24/08/2024	RP (Board Member) provided arrival time at Kalumburu		
		Meeting	In Person	28/08/2024	In person meeting on-Country in Kalumburu refer to File Note		
		Email	Incoming	29/08/2024	Confirmation from RP that Rangers had put posters up around Wyndham for BAC members.		
		Email	Outgoing	1/09/2024	Email to RP confirming arrangements for meeting on 2 September, location and time. Confirmation of call to RP once Eni Reps are in Wyndham.		
		Email	Incoming	1/09/2024	RP responded confirming meeting.		
		Text	Outgoing	2/09/2024	To RP (Board Member) advising of arrival in Wyndham.		
		Meeting	In Person	2/09/2024	In person meeting held in Wyndham with Balangarra PBC, IPA, DBC, Ranger and community representatives. Refer to File Note 240902_FN_Wyndham_Balangarra Community Consultation Meeting		
		Email	Outgoing	5/09/2024	Follow up email to meeting and copy of presentation attached. Comments noted that - RP has not had a chance to review information in detail. - timeline of commencement of consultation from June 2024. - confirmation that the EMBA does not impact the coast (all factors being taken into account). - commitment to hold further consultation effort in advance of receipt of feedback by 15 September.		
		Email	Incoming	5/09/2024	RP thanks for email follow up and future engagement.		
		Email	Outgoing	6/09/2024	Follow up to face to face meeting in Wyndham Balangarra Community on 2 September. Eni rep confirmed the extensive effort being made to consult with the PBC and community through multiple channels and appreciation for ability to engaged directly. Eni agreed to: - include notifications to Balangarra Rangers in the event of an activity related incident. - continuation of liaison with DBCA and RP regarding attendance and opportunity to learn from the Balangarra/DBCA Joint Management Board.		
		Email	Incoming	6/09/2024	RP thanks for email and for face to face engagement.		
		Email	Incoming	10/09/2024	Confirmation of approval by BAC Chair for reimbursement of time spent by BAC consultant to assisting Eni with face to face engagements with the RP organisation.		
		Text	Outgoing	10/09/2024	Text to RP (Board Member) regarding emails sent and offering phone call if required.		
Dambimangari Aboriginal Corporation	3	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Dambimangari Aboriginal Corporation since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Dambimangari Aboriginal Corporation to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Dambimangari Aboriginal Corporation to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Incoming	20/6/24	Failure of email recipient address. Alternate contact at Dambimangari to address consultation invitation		
		Email	Outgoing	21/6/24	Re-sent Initial outgoing consultation email to Dambi via EA and recaption emails with cover explaining why the information has been forwarded.		
		Phone	Outgoing	27/6/24	Phone call to Dambi to follow up on email and hopes for assistance in engagement with the right people. Left phone number and thanks.		
		Email	Outgoing	3/07/2024	Resent email seeking assistance and providing updated EP name and flyer		
		Phone	Outgoing	26/07/2024	To RP (EA) to see if Eni could visit on upcoming visit to the West Kimberley 5-9 August. Response was that we would need to wait until the Board meeting in August for them to decide.		
		Email	Outgoing	26/07/2024	Follow up email after phone call re consultation for Petrel, offer of face to face in August West Kimberley		
		Phone	Outgoing	5/08/2024	To RP (EA) to follow up to see if Eni could visit between 5-9 August. RP reiterated that they are is being approached by numerous titleholders and that whilst committed to consider meetings, has been inundated with requests in what is already a packed portfolio for the group. RP stated that the Board will meet in late August and only after that, might Eni be invited to meet with the RP.		
		Email	Outgoing	5/08/2024	Follow up to phone call, acknowledgement that RP will not be able to advise on opportunity to meet till after August board meeting if at all. RP has multiple proposals to review and not enough resources. Provided address with thanks for hard copy of the Dambimangari Health Country Plan, links to further information on Petrel and advice of consultation close out end August.		
		Phone	Outgoing	15/08/2024	Phone call to main number. RP reception transferred to RP Healthy Country Manager. Call cut off mid conversation.		
		Phone	Outgoing	15/08/2024	Reconnection of call. Offered to provide email and Healthy Country Manager will send digital copy. Provided info email with thanks.		
		Email	Incoming	15/08/2024	Provision of Dambimangari Healthy Country Plan		
		Email	Outgoing	15/08/2024	Return email thanking RP for the information.		
		Phone	Outgoing	22/08/2024	Board meeting in progress this week. Request to resend email and reach out next week to see if there is an opportunity to present face to face.		
		Email	Incoming	23/08/2024	Email from engaged RP representative (advisor) with confirmation of opportunity to meet in October or early 2025. Request for Eni to advise why DAC may be considered an RP for this plan.		
		Email	Outgoing	23/08/2024	Thanks to RP advisor for intro and opportunity for Eni to meet DAC in October or early 2025. Engagement with DAC made to ensure no presumption of sea country knowledge by Eni.		
Email	Outgoing	29/08/2024	Email to RP rep advising Eni Reps are in travelling in remote locations. Eni thanked RP for opportunity to present to the board in October 2024 or early 2025.				
Email	Incoming	2/09/2024	RP responded that DAC consider consultation occurs with meeting the Board and aware that does not align with Eni's timeline.				

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
		Email	Outgoing	4/09/2024	Email to RP confirming Eni availability for presenting to the Board and for ongoing engagement between the parties. Clarification on consultation process and submission deadline for the EP, provision of activity information and time to assess for the purposes of this EP. Advice that in person approach is in addition to the consultation and part of commitment for ongoing engagement and extension for feedback to 15 September. Reassurance of commitment to ongoing consultation with DAC throughout the duration of EP activities and process for Management of Change should updates need to be made to the EP.		
Kalumburu Aboriginal Corporation	3	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Kalumburu Aboriginal Corporation since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Kalumburu Aboriginal Corporation to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Kalumburu Aboriginal Corporation to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	21/6/24	Email thanking for time to meet and providing information that had been distributed to the info email for her organisation.		
		Email	Incoming	22/06/2024	Email bounced, could not be sent. Error in address.		
		Phone	Outgoing	27/6/24	Phone call to landline, no answer, left voicemail with reason for call, name and number.		
		Email	Outgoing	1/07/2024	Re-sent email invitation to consult using updated address and providing explanatory cover.		
		Email	Incoming	1/07/2024	Email bounced, could not be sent, address rejected.		
		Email	Outgoing	16/07/2024	Introduction (contact provided by NIAA), engagement invitation, face to face late July.		
		Phone	Outgoing	18/07/2024	Left voicemail for RP (CEO) - following up on email re 16 July.		
		Text	Outgoing	18/07/2024	To RP (CEO) - following up on email re 16 July and requesting a quick call		
		Phone	Outgoing	18/07/2024	Left voicemail for RP (CEO) - following up on email re 16 July (also tried landline).		
		Phone	Incoming	18/07/2024	Call by RP from Landline. RP confirmed she received the information re Petrel. Discussed visiting Kalumburu to meet with RP. Refer to File Note 240718_FN_Kalumburu_AC_Phone Call		
		Email	Outgoing	27/07/2024	Email following phone call re logistics for face to face meeting. Date range offered with request for names of directors and other KAC members that should be included.		
		Email	Outgoing	29/07/2024	Advice of updated schedule for arrival and confirming face to face options.		
		Phone call	Outgoing	30/07/2024	Left voicemail for RP (CEO) - following up on email re 16 July, and keen to discuss visiting Kalumburu (also tried landline).		
		Email	Outgoing	30/07/2024	Update to availability for face to face meetings.		
		Text	Outgoing	2/08/2024	to RP (CEO) following up to request confirmation email to confirm we can visit Kalumburu for a meeting.		
		Email	Incoming	2/08/2024	Email confirming dates for face to face meetings, confirmation of accommodation and offer of further assistance if required.		
		Email	Outgoing	2/08/2024	Thanks for confirmation and clarity around accommodation arrangements. Request for assistance to contact Wunambaal Gambera RP.		
		Phone call	Outgoing	12/08/2024	With RP (CEO) to discuss visiting Kalumburu; who to meet; others to contact; Chair is also a TO for another RP.		
		Text	Outgoing	16/08/2024	To RP (CEO) to see if available for a call to further discuss logistics of meeting in Kalumburu.		
		Text	Incoming	16/08/2024	From RP (CEO) to ask to please call Monday as busy concluding Kalumburu Day (15/08/24).		
		Text	Outgoing	16/08/2024	To RP (CEO) acknowledging above.		
		Phone call	Outgoing	19/08/2024	Left voicemail for RP (CEO) – to please call back (also tried landline).		
		Text	Outgoing	19/08/2024	To RP (CEO) asking when a good time is to call to discuss logistics of Kalumburu visit.		
		Text	Outgoing	20/08/2024	To RP (CEO) following up yesterday's text.		
		Text	Incoming	20/08/2024	From RP (CEO) apologising for delay as has been unwell and agreed to call tomorrow.		
		Phone call	Incoming	21/08/2024	Missed call from RP (CEO)		
		Text	Outgoing	21/08/2024	Follow up text to RP (CEO) for catering contact information.		
		Phone call	Outgoing	21/08/2024	Phone call to RP to discuss all logistics of Kalumburu meeting.		
		Email	Outgoing	21/08/2024	Follow up to phone call with a community flyer. Summary of engagements and arrangements for face to face meeting the following week.		
Meeting	In Person	28/08/2024	In person meeting on-Country in Kalumburu attended by 30 representatives of two Aboriginal Corporations including Kalumburu AC, PBC's and community. Refer to File Note 240828_FN_Kalumburu Community Consultation Meeting				
Email	Outgoing	5/09/2024	Follow up email to meeting w on-Country and copy of presentation attached. Comments noted that - RP has not had a chance to review information in detail - Timeline of commencement of consultation from June 2024 - Confirmation that the EMBA does not impact the coast (all factors being taken into account). - Commitment to hold further consultation effort in advance of receipt of feedback by 15 September.				
Email	Incoming	5/09/2024	RP acknowledged receipt of email.				
Kimberley Land Council	3	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Kimberley Land Council since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Kimberley Land Council to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Kimberley Land Council to provide
		Email	Outgoing	21/06/2024	Forward of invitation to consult to individual RP previously engaged introducing Petrel Decommissioning consultation commenced. Flyer attached.		
		Email	Outgoing	21/06/2024	Forward email following correction to a recipient email address.		
		Email	Outgoing	24/6/24	Email with invitation to host in Perth, reference to Petrel Decom and offer to present to KLC in August during road trip.		
		Text	Outgoing	27/6/24	Text advance notice of phone call regarding invitation to consult sent to RP EA		
		Text	Incoming	27/6/24	Text response from EA advising she is unwell, confirming receipt of information and distribution to RP (CEO) and RP (DCEO) with follow up on her return to the office.		
		Text	Outgoing	27/6/24	Thanked EA for taking the time to reply when she is unwell, look forward to following up when she is able to return to the office the following day and wished her a speedy recovery.		
		Email	Outgoing	3/07/2024	Invitation to consult resent noting the updated EP name and attached flyer.		
		Email	Outgoing	28/07/2024	Email to RP referencing pre-consultation phone call with offer for face to face meeting in Broome with presentation.		
		Email	Incoming	30/07/2024	Notification from EA that CEO and Chair are unable to meet on suggested dates.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
		Email	Outgoing	31/07/2024	Acknowledged with request for interest in presentation or any concerns with regards to the project.		Eni has provided a reasonable period for MG Corporation to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Meeting	In Person	31/07/2024	Attendance of RP (Ranger Coordinator) at Business After Hours event organised with EKCCI with presentation on proposed activity.		
		Phone	Outgoing	15/08/2024	Call to reception and requested transfer to EA. Advised unavailable - in the middle of preparations for AGM.		
		Email	Outgoing	15/08/2024	Email follow up to phone call to RP (EA) and copied to RP (Chair) and RP Deputy CEO acknowledging KLC current focus, confirming consultation period ending end August but ongoing relationship and engagement important to Eni.		
		Phone call	Outgoing	22/08/2024	Phone call to RP mobile. Still on country for AGM till next week. Eni Rep apologise for the call and committed to following up on 26/8 when RP is back in the office.		
		Email	Outgoing	22/08/2024	Follow up email to phone call thanking RP and confirming reaching out again on 26th.		
		Email	Incoming	22/08/2024	Out of office notification returning to the office from 26/8		
		Phone call	Outgoing	3/09/2024	Phone call to RP EA after AGM to follow up on consultation following attendance at After Hours Event.		
		Email	Outgoing	3/09/2024	Email follow up to phone call to follow up on consultation efforts.		
MG Corporation	3	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.		Eni has been seeking to consult MG Corporation since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow MG Corporation to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for MG Corporation to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	21/06/2024	Forward email invitation to consult to previously engaged RP's to confirm commencement of consultation for Petrel Decommissioning. Activity Flyer attached.		
		Phone call	Outgoing	27/06/2024	Called landline for MG Corp. RP is unavailable. Left message with name, number and reason for call.		
		Phone call	Incoming	28/06/2024	RP confirmed receipt of email and commitment to respond in writing. Correction of title.		
		Email	Incoming	3/07/2024	Email from RP advising correct relationship between RP's.		
		Email	Outgoing	3/07/2024	Eni acknowledged receipt and correction.		
		Email	Outgoing	3/07/2024	Email resent acknowledging phone call and providing updated EP name and flyer.		
		Email	Incoming	3/07/2024	RP reviewed activity sheet, related parties within the organisation will be notified, thanks for continued engagement and information,		
		Email	Outgoing	3/07/2024	Thanked, provided updated flyer and advice that it had been distributed to adminuser email earlier that day.		
		Email	Incoming	3/07/2024	Advice from RP that he has multiple questions to raise for consideration at a later date and will be in touch.		
		Email	Outgoing	12/07/2024	Email offer for face to face meeting in Kununurra to intro Petrel activity, opportunity to address items indicated need discussion (refer email incoming 3 July 2024), presentation opportunity to MG Board, opportunity to learn more about MR Rangers program.		
		Email	Incoming	16/07/2024	RP confirmed liaison to assist with advising if relevant RP's are available to meet. Request for generalisation of information in presentation to avoid confusion		
		Phone Call	Outgoing	18/07/2024	Called and left voice message for RP (Corp Services) to follow up on email sent 12 July.		
		Text	Outgoing	18/07/2024	Texted RP (Chair) to follow up on email sent 12 July.		
		Phone Call	Outgoing	22/07/2024	Called RP (Office number) no answer.		
		Phone Call	Outgoing	22/07/2024	Attempted to call RP (Chair). Phone busy and a text message 'Can I call you back Later?'		
		Text	Outgoing	22/07/2024	Texted RP (Chair) re Eni in Kununurra next week and trying to set up a meeting with RP. Informed RP that cannot get through on Corp Services office number. Requested Corp Services Mobile		
		Phone Call	Outgoing	24/07/2024	Called RP (Office) no answer.		
		Phone Call	Outgoing	24/07/2024	Called RP (Alternative office number 2) no answer.		
		Phone Call	Outgoing	24/07/2024	Called RP (Alternative office number 3) no answer.		
		Phone Call	Outgoing	24/07/2024	Attempted to call RP (Chair). Phone busy and a text message 'Can I call you back Later?'		
		Text	Outgoing	24/07/2024	Texted RP (Chair) re Eni in Kununurra next week and hoping to set up a meeting with RP. Asked for a good time to call.		
		Phone Call	Outgoing	26/07/2024	Called RP (Office) no answer.		
		Phone Call	Outgoing	26/07/2024	Called RP (Alternative office number 2) no answer.		
		Phone Call	Outgoing	26/07/2024	Attempted to call RP (Chair). Phone busy.		
		Phone Call	Incoming	29/07/2024	RP (Chair) said he was involved with a Cultural Survey this week but would be able to meet Friday morning 2nd August.		
		In Person	In Person	29/07/2024	Met RP (Corp Services) on site at RP Offices to follow up in person regarding email sent 12 July and to share that RP (Chair) had tentatively agreed to Friday 2 August. Reason no one picking up Office number was that there is no receptionist. Retrieved Mobile contact number from RP (Corp Services) for future contact.		
		Email	Outgoing	29/07/2024	Forward email invitation to consult to updated contact with activity flyer		
		Email	Outgoing	29/07/2024	Calendar invitation for 2 August with appreciation for time.		
		Text	Outgoing	29/07/2024	Texted RP (Corp Services) thanking for mobile number and confirmed an invite for meeting 2 August was sent.		
		Text	Incoming	29/07/2024	RP (Corp Services) thanked and acknowledged text.		
		Text	Incoming	2/08/2024	RP (Chair) texted to inform he had to cancel the meeting due to a funeral.		
		Text	Outgoing	2/08/2024	Responded to RP (Chair) to give condolences and respects to families. Stated that we may be back into Kununurra late August and would seek to meet then.		
		Email	Outgoing	12/08/2024	Acknowledgement of inability to attend 2 August. Provision of dates for opportunity to meet in person in early September, requesting confirmation of availability so Eni representative can adjust travel commitments to accommodate.		
		Phone Call	Outgoing	14/08/2024	To RP (Corp Services) to follow up regarding email sent 12/08/24		
		Phone Call	Outgoing	15/08/2024	To RP (Corp Services) – no answer.		
		Text	Outgoing	15/08/2024	To RP (Corp Services) to request discussion for meeting on 2 or 3 September due to Eni returning to Kununurra (for other meetings) at that time.		
		Text	Incoming	15/08/2024	Newsletter distribution		
		Text	Incoming	15/08/2024	From RP (Corp Serv) saying she would be able to check as to whether a meeting could occur and call back before COB 16/08/24.		
		Email	Outgoing	15/08/2024	Email to confirm potential opportunity to meet with MG Corp Board on 2 or 3 September.		
Phone Call	Outgoing	16/08/2024	To RP (Corp Services) – no answer.				
Text	Outgoing	16/08/2024	To RP (Corp Serv) to following up to see if there'd been any progress on organising a meeting for 2 or 3 September.				
Text	Outgoing	19/08/2024	To RP (Corp Serv) asking if available for a call (Read).				
Phone Call	Outgoing	19/08/2024	To RP (Corp Services) – no answer.				

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
		Text	Outgoing	19/08/2024	To RP (Chair) to see if he could liaise internally to see if RP can meet on 2 or 3 September		
		Phone Call	Outgoing	20/08/2024	To RP (Corp Services) – no answer.		
		Phone Call	Outgoing	20/08/2024	To RP (Chair) – no answer.		
		Email	Outgoing	20/08/2024	Follow up to phone calls to seek opportunity to meet on 3 September and continuation of Eni commitment to engage. Provision of travel timing to facilitate meeting.		
		Email	Incoming	20/08/2024	RP thanked Eni for email and advised the Board is not available on 3 September due to other commitments.		
		Email	Outgoing	20/08/2024	Thanked RP for email with offering to provide information on line if that is suitable. Commitment to consultation process and continuance of follow up through to EP submission date. Option to opt out if preferred.		
		Email	Outgoing	4/09/2024	Email follow up on offering of online presentation. Option to opt out if preferred.		
Wunambal Gaambera Aboriginal Corporation	3	Email	Outgoing	21/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult Wunambal Gaambera Aboriginal Corporation since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Wunambal Gaambera Aboriginal Corporation to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Wunambal Gaambera Aboriginal Corporation to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Phone call	Outgoing	27/6/24	Called landline on website. No answer. Unable to leave voicemail as message bank is full.		
		Email	Outgoing	3/07/2024	Re-sent email with update EP name and flyer		
		Email	Outgoing	16/07/2024	Email with details provided by NIAA. Introduction and invitation for engagement late July. Confirmation also reaching out to Kalumburu AC and Balanggarra AC for engagement across community.		
		Phone	Outgoing	18/07/2024	Phone call to discuss consultation and opportunity to meet in Perth. Refer to File Note 240718_FN_Wunambal Gaambera AC_phone call		
		Email	Outgoing	18/07/2024	Confirmation of meeting in Perth on Friday, 19 July.		
		Meeting	In Person	19/07/2024	In person consultation meeting in Eni offices. Refer to File Note 240719_FN_Wunambal Gaambera AC_Meeting		
		Email	Outgoing	27/07/2024	Follow up email post meeting with thanks and copy of the presentation. Confirmation of visit to Kalumburu and request to lock in a confirmed date to assist with travel arrangements during high tourist season.		
		Email	Outgoing	29/07/2024	Email advising change to schedule for arrival in Kalumburu and offer of dates for face to face meetings.		
		Email	Outgoing	2/08/2024	Email advising meeting on 28 August will include Balanggarra Kwini TO's and Kalumburu AC and checking if this works for Wunambal Gaambera. Travel details provided.		
		Email	Outgoing	2/08/2024	Email to Kalumburu seeking assistance with contacting WBAC RP.		
		Phone call	Outgoing	14/08/2024	Phone call with RP		
		Email	Outgoing	14/08/2024	Confirmation of meeting arrangements, request for assistance meeting another RP		
		Phone call	Outgoing	20/08/2024	Phone call with RP		
		Email	Outgoing	22/08/2024	Email to RP to provide arrangements for Kalumburu visit, attendees and contact information. Information on Traditional Owners payment fees policy within Eni and to whom those may apply to, catering availability and appreciation for meeting opportunity.		
Meeting	In Person	28/08/2024	In person meeting on-Country in Kalumburu. Refer to File Note 240828_FN_Kalumburu Community Consultation Meeting.				
Email	Outgoing	5/09/2024	Follow up email to meeting with thanks to RP for support in meeting on-Country and copy of presentation attached. Comments noted that RP - has not had a chance to review information in detail. - Timeline of commencement of consultation from June 2024. - Confirmation that the EMBA does not impact the coast (all factors being taken into account). - Acknowledged RP request seeking Eni support for a 'peer review' of the EP on behalf of RP by independent qualified environmental scientist. This request, while difficult to implement for the Decommissioning EP given submission timing and the unlikely scenario of a vessel collision, will be a discussion point under future development activities. - Commitment to hold further consultation effort in advance of receipt of feedback by 15 September as well as ongoing, close and positive engagement into the future.				
Business							
National Business							
Monsoon Aquatics	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Monsoon Aquatics since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Monsoon Aquatics to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Monsoon Aquatics to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	30/07/2024	Follow up email to invitation to consult with update flyer		
		Text	Outgoing	8/08/2024	Intro text to follow up on consultation		
		Text	Incoming	8/08/2024	Text response advising alternative number for consultation.		
		Text	Outgoing	8/08/2024	Thankyou text for contact information.		
		Text	Outgoing	8/08/2024	Intro text to follow up on consultation		
		Text	Incoming	8/08/2024	Response text advising no further consultation required.		
		Text	Outgoing	8/08/2024	Thanked and confirmed preference will be recorded.		
Vocus	2	Email	Outgoing	216/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Vocus since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Vocus to make an informed assessment of the possible consequences of the activities the subject of this
		Email	Outgoing	25/6/24	Follow up email to confirm receipt of provided information, Eni commitment to provision of adequate information for assessment of activity, offer to respond to any queries or concerns, online location for more detail and advance notice of phone call.		
		Email	Incoming	26/6/24	Acknowledgement from RP National Field Ops Manager and commitment to review and revert.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
		Email	Incoming	26/6/24	Advice of assessment of location against North West Cable System and confirmed there is not concerns for Vocus, activity is 140km away.		EP on their functions, interests or activities. Eni has provided a reasonable period for Vocus to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	26/6/24	Thanked for swift response and notification of infrastructure distance of 140km and closure of consultation. Opportunity to re-engage offered if required.		
Northern Territory Businesses							
Anglers Choice Fishing Safaris	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Anglers Choice Fishing Safaris since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Anglers Choice Fishing Safaris to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Anglers Choice Fishing Safaris to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	30/07/2024	Resent initial invitation to consult with updated flyer.		
		Phone	Outgoing	2/08/2024	Called, RP in Bali. Discussed consultation request and activity location. RP confirmed no consultation required.		
		Text	Outgoing	2/08/2024	Follow up text apologising for disturbing holiday, confirming close out.		
Arafura Bluewater Charters	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Arafura Bluewater Charters since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Arafura Bluewater Charters to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Arafura Bluewater Charters to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	30/07/2024	Resent invitation to consult with updated flyer.		
		Phone	Outgoing	2/08/2024	Transferred to RP. Confirmed consultation is not required as they are not affected. Confirmed Eni will send a conclusion email.		
		Email	Outgoing	2/08/2024	Confirmation of conclusion to consultation effort.		
Cannon Charters	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Cannon Charters since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Arafura Cannon Charters to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Cannon Charters to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	30/07/2024	Resent initial invitation to consult with updated flyer.		
		Phone	Outgoing	2/08/2024	Spoke to RP. Confirmed no further information required, activity does not affect them. Eni to send confirmation of close out.		
		Email	Outgoing	2/08/2024	Confirmation of conclusion to consultation effort.		
Chamber of Commerce Northern Territory	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult the Chamber of Commerce Northern Territory since it issued information regarding this EP in June 2023. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow the Chamber of Commerce Northern Territory to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for the Chamber of Commerce Northern Territory to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	30/07/2024	Resent initial invitation to consult with updated flyer.		
		Phone call	Outgoing	8/08/2024	Voicemail - left details and message for return phone call.		
		Phone call	Outgoing	15/08/2024	Phone call to main line, unavailable. Left voicemail with reason for call and contact information and will re-send invitation to consult.		
		Email	Outgoing	15/08/2024	Follow up email to phone call with activity flyer attached. Timing of consultation included for reference.		
		Phone call	Outgoing	21/08/2024	Phone call to main line, no answer. Left message with reason for call, contact information, committed to resending invitation for follow up.		
		Email	Outgoing	21/08/2024	Follow up email to phone call with activity flyer and history of invitations to consult. Advice on consultation timeline.		
		Phone call	Outgoing	26/08/2024	Call to main number to follow up on invitation to consult. Spoke to RP who apologised for the lack of engagement. Requested email be sent to alternate address which will be received directly by the answering RP to progress.		
		Email	Outgoing	26/08/2024	Email sent to alternate address with attached flyer and engagement attempts. Invitation to discuss, timeline for consultation effort and option to opt out.		
		Email	Incoming	26/08/2024	Email from RP (CEO) confirming RP has considered the information provided and have no issues or concerns. Conclusion to engagement.		
		Email	Outgoing	26/08/2024	Email to RP with appreciation for their time, recording of advice and conclusion to effort.		
		Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.		
		Email	Outgoing	30/07/2024	Resent initial invitation to consult with updated flyer.		
		Phone call	Outgoing	2/08/2024	Called and left voice mail inviting return call or to opt out of consultation by text.		
		Email	Outgoing	2/08/2024	Follow up email to invitation to consult.		
		Email	Incoming	3/08/2024	Contact information provided for internal RP to address		
		Text	Outgoing	5/08/2024	Text to internal RP advising reason for proposed call.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
Equinox Fishing Charters	4	Phone call	Outgoing	2/08/2024	Spoke to RP, couldn't find email, confirmed sent to correct address. May have been deleted by other office staff. Requested resent. Confirmed will action with option to opt out if they do not require further info.	N	Eni has been seeking to consult Equinox Fishing Charters since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Equinox Fishing Charters to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Equinox Fishing Charters to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	2/08/2024	Follow up email to Nicole with information and option to opt out if desired.		
		Phone call	Outgoing	15/08/2024	Spoke to RP who advised they are receiving a large number of these invitations and don't have time for them. RP requested a resend of the email for review. Eni Rep confirmed email to be forwarded.		
		Email	Outgoing	15/08/2024	Email with activity flyer resent to RP with acknowledgement of the high level of consultation across the industry.		
		Phone call	Outgoing	21/08/2024	Called to speak to RP. Conversation ended when RP had to take another call.		
		Email	Outgoing	21/08/2024	Follow up email to RP to elaborate on call and invitation to consult. Included activity sheet and options for discussion, further information or to opt out		
		Phone call	Outgoing	26/08/2024	Called RP. Out of office, asked if Eni call had been returned. Advised it had not. RP committed to returning call same day.		
		Phone call	Outgoing	27/08/2024	Called RP. Eni Rep provided context to location and queried RP activity which RP advised is within Darwin Harbour area and not within the EMBA. Eni Rep offered to confirm that information in an email for the RP.		
		Email	Outgoing	27/08/2024	Email follow up with RP to confirm discussion and seeking RP acknowledgement.		
		Email	Outgoing	30/08/2024	Email to RP seeking confirmation of phone call advice on 27th August.		
		Email	Outgoing	3/09/2024	Follow up email post consultation effort conclusion and offer to address any issues or, if the RP prefers, option to opt out.		
		Email	Outgoing	10/09/2024	Email confirming phone discussions and conclusion of effort unless otherwise advised.		
Fish Darwin	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Fish Darwin since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Fish Darwin to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Fish Darwin to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Phone	Outgoing	2/08/2024	Phone call to RP. Voicemail. Left message with contact details.		
		Text	Outgoing	2/08/2024	Text notification of reason for call and option to opt out if consultation not required.		
		Phone	Outgoing	15/08/2024	Call to owner mobile. No answer. Left voice mail with contact information and reason for call along with follow up text and email.		
		Text	Outgoing	15/08/2024	Follow up text to phone call explaining call and offer to progress with option to opt out if preferred.		
		Email	Outgoing	15/08/2024	Resent email with activity flyer as promised in voicemail inviting consultation progress or option to opt out if preferred.		
		Phone call	Outgoing	21/08/2024	Call to RP mobile. No answer. Voicemail left with contact details and reason for call.		
		Email	Outgoing	21/08/2024	Follow up email to voicemail providing activity sheet and offer to discuss any issues, option to opt out.		
		Phone call	Outgoing	26/08/2024	Phone call to main number. Provided mobile number of alternative internal RP.		
		Text	Outgoing	26/08/2024	Text introduction prior to call the following day.		
		Phone call	Outgoing	27/08/2024	Phone call to updated RP following text intro. Voicemail left with name, number and reason for the call.		
		Text	Outgoing	27/08/2024	Follow up text to RP. Request for short call to provide context and progress.		
				Email	Outgoing		
Northern Territory Guided Fishing Industry Association (NTGFIA)	2	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult NTGFIA since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow NTGFIA to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for NTGFIA to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	25/6/24	Follow up email to confirm receipt of provided information, Eni commitment to provision of adequate information for assessment of activity, offer to respond to any queries or concerns, online location for more detail and advance notice of phone call.		
		Email	Outgoing	2/07/2024	Re-sent email with invitation to consult, updated EP name and activity flyer.		
		Phone	Outgoing	15/07/2024	Phone call from Eni to RP (secretary) to introduce Eni, its upcoming activities and offer for a face to face consultation. Confirmed by RP that Petrel information was received. Agreed to send follow up email regarding visit to Darwin.		
		Phone	Outgoing	15/07/2024	Phone call with RP		
		Email	Outgoing	15/07/2024	Confirmation of phone call and RP awareness of consultation invitation. Provision of face to face opportunities in Darwin to meet with RP and interested members. Relationship build request with ongoing activities for the company in the area.		
		Phone call	Outgoing	19/07/2024	Called RP (secretary) to follow up on email. RP communicated there would be an appetite to meet and would follow up with Assoc Chair.		
		Phone call	Outgoing	23/07/2024	Left voicemail with RP (secretary) to follow up regarding progress for set up of face to face consultation.		
		Phone	Incoming	23/07/2024	Missed call from RP (secretary) - no message left.		
		Email	Outgoing	23/07/2024	Follow up email to RP advising of changes in availability since last email offer. Provision of updated availability along with an offer to opt out of consultation if preferred.		
		Phone	Outgoing	23/07/2024	Phone call with RP (secretary) missed call 30 minutes after. Left voicemail.		
		Phone	Outgoing	24/07/2024	Left voicemail for RP (secretary) to follow up regarding progress for set up of face to face consultation. Informed that consultation time in Darwin would close tomorrow on 25 July.		
		Phone	Outgoing	24/07/2024	Called RP (chair) to attempt to meet.		
		Email	Outgoing	27/07/2024	Email to RP with thanks for time and acknowledgement of internal capacity and strong efforts in consultation by Eni. Timing of visits to Darwin with potential for face to face presentation if required.		
		Email	Incoming	28/07/2024	Thanks for efforts and understanding. Acknowledgment of future opportunities to meet in Darwin.		
		Email	Outgoing	1/08/2024	Email confirming next Darwin visit will be post consultation close as discussed with RP and acknowledged in phone call of 24 July along with agreement to close out the consultation with NTGFIA unless otherwise notified. Commitment to reach out next time Eni is in Darwin.		
		Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.		
		Email	Outgoing	25/06/2024	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Text	Outgoing	2/07/2024	Courtesy text follow up.		
		Phone	Outgoing	8/07/2024	Spoke to RP. Text not received as he has work phone forwarded to his personal phone. Provided his email address (confirmed as email used in previous correspondence).		
		Email	Outgoing	8/07/2024	Re-sent email to RP with updated flyer and EP name.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
NT Port and Marine	1	Email	Incoming	8/07/2024	Acknowledgement of receipt by RP, apology for delay, will revert with any queries.	Y	Eni has been seeking to consult NT Port and Marine since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow NT Port and Marine to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for NT Port and Marine to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	8/07/2024	Return email thanking RP.		
		Email	Outgoing	30/07/2024	Follow up on consultation and requirement for any further information.		
		Text	Outgoing	8/08/2024	Courtesy text follow up on consultation, provision of conclusion date and offer to provide any assistance to help progress.		
		Phone	Outgoing	15/08/2024	Follow up call to RP. RP apologised for not responding due to workload. RP did not see any issues however noted that the business was coming under new ownership and he will run the information past them for thoroughness and respond asap.		
		Email	Outgoing	15/08/2024	Resent email with activity flyer for internal follow up with new owners to ensure full and complete consultation.		
		Phone	Outgoing	21/08/2024	Confirmed receipt of email and distribution to owners. RP confirmed won't need to provide feedback as activity doesn't directly affect the port parameters.		
		Email	Outgoing	27/08/2024	Follow up email to RP to see if owners have confirmed feedback.		
		Email	Incoming	27/88/24	Email from RP confirming new owners have been provided information and will continue to remind them, hopes for a response in the next few days.		
		Email	Outgoing	28/08/2024	Email to RP with thanks and advice. Re-stated scheduled conclusion of consultation effort for Friday, 30th August.		
		Email	Incoming	29/08/2024	RP advised opting out of consultation following discussion with new owners. - Request for updates if scope of activity changes - Request Eni continues to engage with Tiwi Land Council regarding the activity.		
Email	Outgoing	29/08/2024	RP thanks for advice. Eni Rep confirmed engagement with Tiwi Land Council and to provide updates if the scope changes. Confirmed conclusion to consultation effort.				
Offshore Boats Fishing Charter (Diversity Charters)	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Diversity Charters since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Diversity Charters to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Diversity Charters to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	30/07/2024	Resent invitation to consult with updated flyer.		
		Phone	Outgoing	2/08/2024	Phoned and provided reception with full explanation of call and contact information. Put through to RP. Requested resent email to direct email to review.		
		Email	Outgoing	2/08/2024	Resent email direct to RP with flyer and options for addressing issues or opting out of consultation.		
		Phone call	Outgoing	15/08/2024	Phone call, responder advised owner unavailable, took message to pass on. Eni rep advised a follow up email would be provided.		
		Email	Outgoing	15/08/2024	Follow up email with activity flyer, options for consultation or opt out if preferred.		
		Phone call	Incoming	15/08/2024	Returned phone call from RP. Queried refresh on consultation information. Business focussed on Roly Shoals so unlikely to be any issues. Invited to respond to email confirming that stance and Eni will conclude consultation efforts as requested. RP will send email.		
		Email	Incoming	16/08/2024	RP advised they are happy for the decommissioning to go ahead.		
Email	Outgoing	19/08/2024	Eni rep thanked RP for advice, conclusion to efforts with contact information should the RP wish to re-engage.				
Sea Darwin	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Sea Darwin since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Sea Darwin to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Sea Darwin to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	30/07/2024	Resent invitation to consult with updated flyer		
		Phone	Outgoing	2/08/2024	Called RP, advised to send email to RP General Manager.		
		Email	Outgoing	2/08/2024	Resent email to General Manager email provided with activity flyer.		
		Email	Incoming	2/08/2024	Email failure - address to be confirmed		
		Phone	Outgoing	15/08/2024	Phone call to reception who requested email re-sent to generic email and will forward to RP GM.		
		Email	Outgoing	15/08/2024	Email follow up to phone call to generic and RP GM email.		
		Phone call	Outgoing	21/08/2024	Spoke to RP reception. Asked that contact is by email to the RP GM.		
		Email	Outgoing	21/08/2024	Re-sent email with inquiry of opportunity to assess, options to address any queries that may arise or opt out if that is the RP preference.		
		Email	Outgoing	26/08/2024	Follow up email with timeline of consultation effort, offer to address any issues or queries, flyer attached and option to opt out.		
		Email	Incoming	26/08/2024	Email from RP with apology for delayed response. Confirmation that Sea Darwin have no concern with the plan and no need for further consultation.		
Email	Outgoing	26/08/2024	Email to RP with thanks for time and conclusion to consultation effort.				
The Amateur Fishermen's Association of the Northern Territory (AFANT)	3	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult AFANT since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow AFANT to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for AFANT to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	26/6/24	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Outgoing	3/07/2024	Email re-sent with updated EP name and flyer		
		Email	Outgoing	30/07/2024	Follow up email on consultation invitation.		
		Phone call	Outgoing	8/08/2024	Voicemail. Provides contact information for RP CEO and RP President.		
		Text	Outgoing	8/08/2024	Intro text and request for phone call to progress sent to RP CEO.		
		Phone call	Outgoing	15/08/2024	RP unavailable, left VM with commitment to text and email for ease of reference.		
		Text	Outgoing	15/08/2024	Text follow up to phone call with explanation and confirmation of information being resent by email.		
		Email	Outgoing	15/08/2024	Resent email noting phone and text to RP CEO and follow up consultation efforts and option to opt out if preferred.		
		Phone call	Outgoing	22/08/2024	Call to RP mobile. RP unwell and not working. Back in the office next week. Call did not progress activity consultation due to RP illness with commitment to follow up on 26/8.		
		Phone call	Outgoing	26/08/2024	Call to RP mobile. No answer, left message.		
		Text	Outgoing	26/08/2024	Text to RP with request to consider invitation to consult, with option to opt out if no concerns or does not wish to be consulted.		
		Phone call	Outgoing	28/08/2024	Phone call to RP mobile. Voicemail message advises text follow up. Left voicemail.		
		Text	Outgoing	28/08/2024	Text follow up to call and voicemail.		
		Phone call	Outgoing	28/08/2024	Phone call to main office number. Went to voicemail - does now allow for messages to be left.		
Email	Outgoing	28/08/2024	Email follow up to office email providing consultation timeline and continuing effort to engage.				

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
		Email	Outgoing	3/09/2024	Email follow up on consultation post consultation effort conclusion and prior to submission.		
Yknot Fishing Charters	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Yknot Fishing Charters since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Yknot Fishing Charters to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Yknot Fishing Charters to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	30/07/2024	Resent invitation to consult with updated flyer.		
		Phone	Outgoing	2/08/2024	Called - unavailable.		
		Text	Outgoing	2/08/2024	Follow up text to phone call explaining call and option to opt out.		
		Phone call	Incoming	2/08/2024	RP returned call. Asked for email to be resent and will bring it to the attention of the skipper for review.		
		Email	Outgoing	2/08/2024	Resent email with activity flyer.		
		Phone call	Outgoing	15/08/2024	Phone call to provided mobile- auto forwarded to alternate RP. Refresh on invitation to consult and discussion around RP's area of activity. Operates out of Darwin and Dundee. Eni Rep to resend information for ease of reference and option to opt out if no issues or RP preference with invitation for ongoing consultation if required.		
		Email	Outgoing	15/08/2024	Follow up email to phone call with activity flyer and option to consult or if preferred, opt out.		
		Email	Incoming	16/08/2024	Email from RP thanking Eni for call and advising there are no issues to be addressed for the RP		
		Email	Outgoing	19/08/2024	Email response thanking RP with conclusion to effort based on the advice received. Contact information for issues that may arise.		
Western Australian Businesses							
CGL (Wyndham Port)	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult CGL since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow CGL to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for CGL to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Incoming	21/06/2024	Automatic response acknowledgement of receipt		
		Email	Outgoing	21/6/24	Initial email forwarded to Port Manager previously engaged and introducing Petrel consultation.		
		Email	Incoming	26/6/24	Response to direct email providing the Wyndham Port Handbook		
		Email	Outgoing	10/07/2024	Response acknowledging information provided. Updated flyer sent with query for any other information that may be required, offer to close out with note that engagement can recommence if any new issues are realised.		
		Email	Outgoing	16/07/2024	Outgoing email offer face to face meeting in Kununurra late July, understanding of port capabilities and RP CEO engagement (also Dep President of Shire of Wyndham East Kimberley).		
		Email	Incoming	16/07/2024	Response confirming engagement during visit to East Kimberley and seeking CEO attendance.		
		Email	Incoming	16/07/2024	Confirmation of availability to meet with RP CEO, dates and locations provided.		
		Phone call	Outgoing	17/07/2024	Phone discussion prior to meeting and port tour arrangements.		
		Email	Outgoing	17/07/2024	Confirmation of meeting time and port tour on 1 August. 2024		
		Event	In Person	31/07/2024	RP x 2 attended event coordinated with EKCCI with presentation on proposed activity.		
		Meeting	In Person	1/08/2024	In person meeting and tour of facilities. Refer to File Note 240801_FN_CGL Wyndham Port_Consultation		
		Email	Outgoing	12/08/2024	Email with thanks for the site tour, time taken to meet on 1 August and RP acting as MC at the EKCCI event. Copy of presentation with additional detail (separate to that presented at event due to audience engagement). Notice of cessation of consultation effort unless otherwise advised. Invitation to engage if any issues arise amid continuing relationship. Attached photos of the EKCCI event.		
		Email	Incoming	12/08/2024	Confirmation CGL considers they have been thoroughly consulted and continued offer of operational assistance if required.		
		Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.		
		Email	Outgoing	21/06/2024	Send email invitation to consult to RP's previously engaged to introduced Petrel consultation.		
		Email	Outgoing	11/07/2024	Thanks for invoice and advice on internal systems. Offer for face to face consultation in late July, consideration for advertising on the EKCCI forum, facilitation off group meetings, attendance at Kimberley Forum.		
		Email	Incoming	15/07/2024	Email response to requests for assistance, confirmation of advertising of consultation through EKCCI, facilitation of a business community event, potentially with other businesses for efficiency and increased reach, potential business connection event presentation, sponsorship opportunities for 2024 Kimberley Economic Forum (29/30 August), potential opportunities as arise through discussions.		
		Text	Outgoing	17/07/2024	To RP (CEO) to reestablish contact regarding face-to-face consultation and update regarding membership payment.		
		Phone	Outgoing	18/07/2024	To RP (CEO) to discuss Eni's intended membership, potential Chamber advertising of consultation process, and potential for a face-to-face Chamber networking consultation event		
		Text	Outgoing	18/07/2024	To RP (CEO) to confirm interest in face-to-face 'Chamber Connect - Business After Hours' consultation event, but need to understand costs in the context of membership.		
		Email	Outgoing	18/07/2024	Email confirmation of advertising artwork progressing, membership confirmation, Chamber Connect event 31 July, engagement reach, Economic Forum and meeting timing (30 July)		
		Phone	Incoming	19/07/2024	From RP (Events) to discuss Eni's intended face-to-face 'Chamber Connect - Business After Hours' consultation event for 31 July – Advertising an Eni notice; budget for venue, food, and drinks; what will be presented on the night; invitation; meeting with EKCCI Officers		
		Email	Incoming	19/07/2024	Requirements for function arrangements for networking event.		
		Email	Outgoing	19/07/2024	Sending information required for the event to EKCCI		
		Email	Incoming	22/07/2024	Email draft for review and approval with registration methodology for EKCCI event.		
		Email	Outgoing	22/07/2024	Edits to invitation to Business After Hours event.		
		Email	Incoming	22/07/2024	Acknowledgement of edits and sending of invitation to event.		
		Email	Outgoing	22/07/2024	Eni acknowledged RP email.		
		Phone	Incoming	22/07/2024	Voicemail to RP (CEO) to follow up on membership confirmation.		
		Text	Outgoing	22/07/2024	To RP (CEO) to follow up on membership confirmation so as to progress 'Business After Hours' consultation event for 31 July.		
		Phone	Incoming	22/07/2024	Missed call from RP (CEO).		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
East Kimberley Chamber of Commerce and Industry	4	Phone	Outgoing	22/07/2024	To RP (CEO) to provide confirmation of membership progression.	N	Eni has been seeking to consult EKCCI since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow EKCCI to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for EKCCI to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Facebook	Post	23/07/2024	Invitation on EKCCI Facebook inviting members to the Business After Hours Even hosted by Eni.		
		Email	Outgoing	23/07/2024	Request for copy of the invitation for records.		
		Email	Incoming	23/07/2024	Receipt of invitation for records from the RP		
		Email	Outgoing	23/07/2024	Eni acknowledged receipt.		
		Text	Outgoing	29/07/2024	To RP (CEO) to get RP (Events) contact details to discuss how we can present slide-show.		
		Text	Incoming	29/07/2024	From RP (CEO) to confirm they have a projector.		
		Meeting	In Person	30/07/2024	With RP (CEO) and RP (Events) to finalise details for 'Chamber Connect - Business After Hours' consultation event for 31 July.		
		Email	Incoming	30/07/2024	Copy of Business After Hours invitation for meeting on 31 July. Public Notification included in Newsletter issued to all EKCCI members.		
		Facebook	Post	30/07/2024	Invitation on EKCCI Facebook inviting members to the Business After Hours Even hosted by Eni.		
		Email	Incoming	31/07/2024	List of attendees prior to the event provided by RP		
		Email	Outgoing	31/07/2024	Receipt of list acknowledged		
		Meeting	In Person	31/07/2024	With RP and Members - 'Chamber Connect - Business After Hours' Petrel consultation event (5pm to 7.30pm)		
		Email	Incoming	6/08/2024	RP provided photos from the Network Connect event.		
		Email	Outgoing	6/08/2024	Thanked RP for the pictures. Update of meeting with Broome CCI and membership with RP. Request for list of confirmed attendees, particularly contact information for the Balangarra Rangers.		
		Email	Incoming	6/08/2024	List of attendees and contact information provided by RP. Records for individual RP's at the event updated.		
		Email	Outgoing	6/08/2024	Eni acknowledged receipt of attendee list and contact information		
		Email	Incoming	7/08/2024	Request for copy of the presentation for EKCCI newsletter.		
		Email	Outgoing	8/08/2024	Eni responded to request for copy of presentation regarding distribution limits. Proposal for a thankyou in the newsletter for attendance of the event with contact information for those that wish to receive a copy of the presentation.		
		Email	Incoming	8/08/2024	Confirmation of including Eni contact information with request for abridged version of the presentation or a copy of the activity flyer. Request for understanding of the decommissioning process.		
		Email	Incoming	8/08/2024	Provision of update by RP notifying Eni rep had been "tagged" in a post and comments have been received which need to be fed back to Eni, including some requests for copies of presentation. Query on process for addressing self-identified RP's.		
		Email	Outgoing	8/08/2024	Question on location of post and provision of process for self-identified RP's to contact Eni directly through contacts provided, welcoming direct feedback and comment from RP.		
		Email	Incoming	8/08/2024	Confirmation RP will collate feedback and grateful for the genuine interest shown by Eni in the community.		
Email	Outgoing	8/08/2024	Follow up on receipt of notifications for social media, confirmation of email address for self-identified RP's.				
Newsletter	Outgoing	9/08/2024	Follow up on receipt of notifications for social media, confirmation of email address for self-identified RP's.				
Email	Outgoing	13/08/2024	Email thanks for support organising the Business After Hours event and copy of presentation slides in two formats - as presented to a larger audience and with additional detail for RP. Offer to present to RP board if required. Follow up to provision of feedback received by RP. Conclusion of consultation effort by Eni team subject to specific feedback prior to end August. Commitment for continued engagement as part of ongoing relationship.				
Email	Outgoing	2/09/2024	Email follow up post consultation conclusion for feedback from Chamber and attendees at Business After Hours event as advised by RP.				
Marine Tourism WA	3	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult Marine Tourism WA since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Marine Tourism WA to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Marine Tourism WA to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	26/6/24	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Outgoing	3/07/2024	Re-sent invitation to consult with request for follow up or offer to close out.		
		Email	Outgoing	15/07/2024	Re-sent invitation to consult with updated EP name and activity flyer.		
		Email	Outgoing	30/07/2024	Resent invitation to consult with option to opt out.		
		Text	Outgoing	9/08/2024	Text introduction and follow up of invitation to consult sent by email ahead of phone call to progress.		
		Phone	Outgoing	15/08/2024	Phone call to RP. Not available, left voice mail explanation for phone call and follow up with email.		
		Email	Outgoing	15/08/2024	Email follow up to phone call providing information for ease of reference with invitation to discuss any issue and option to opt out if preferred.		
		Phone call	Outgoing	22/08/2024	Call to RP mobile. Straight to voicemail. Left message with reason for the call.		
		Text	Outgoing	22/08/2024	Follow up text to phone call with explanation for call and commitment to re-send consultation invitation.		
		Email	Outgoing	22/08/2024	Follow up email with flyer and timeline for consultation. Invitation to discuss any issues or queries with option to opt out if preferred.		
		Phone	Outgoing	26/08/2024	Phone call to RP - confirmed information not read. Asked if Eni had consulted with DPIRD and RecFishWest which Eni Rep confirmed included conclusion to RecFishWest effort and multiple meetings with DPIRD (regionally and upcoming in head office). RP commented that they should not be considered an RP as they are a sector body of RecFishWest and DPIRD fisheries. If those entities are consulted and issues addressed where raised MTAWA do not require being considered and RP. Offer to respond to call with email to confirm the advice and assist with conclusion to effort. RP agreed.		
		Email	Outgoing	26/08/2024	Email sent to RP to confirm phone discussion, items raised and RP, as a sector body of RecFishWest, should not be considered an RP		
		Email	Incoming	27/08/2024	Confirmation by RP of email content and no further requirement for consultation.		
Email	Outgoing	27/08/2024	Email thanking RP, concluding consultation as promised.				
					Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.		Eni has been seeking to consult RecfishWest since it issued information

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
RecfishWest	3	Email	Outgoing	26/6/24	Follow up email to noting error in original email address and resending information with invitation to engage, Eni commitment to provision of adequate information for assessment of activity, offer to respond to any queries or concerns, online location for more detail and advance notice of phone call.	Y	Eni has been seeking to consult RecfishWest since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow RecfishWest to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for RecfishWest to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Incoming	28/6/24	Response from RP noting - it is unlikely that the activity will have any impact on recreational fishers over time - it is important to continue to update them on activity timing and any significant changes.		
		Email	Outgoing	1/07/2024	Email response with thanks for swift reply and noting request to receive any updates. Confirmation of conclusion to consultation effort.		
Unreel Adventure Safaris	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Unreel Adventure Safaris since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Unreel Adventure Safaris to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Unreel Adventure Safaris to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	30/07/2024	Resent invitation to consult with updated flyer.		
		Text	Outgoing	2/08/2024	Text message outlining consultation follow up and seeking phone call. Offer to opt out if preferred.		
		Text	Incoming	2/08/2024	Advice that RP is at sea still 10 August.		
		Text	Outgoing	5/08/2024	Advise acknowledged with thanks and will retry following week.		
		Phone call	Outgoing	15/08/2024	Phone call to RP. No issues and sincere respect for efforts of industry to engage but he has no objections and does not need to be consulted going forward. RP thanked for time with request for text of provided advice to assist with conclusion to consultation. RP agreed to respond as requested.		
		Text	Outgoing	27/08/2024	Follow up text to phone call to see if confirmation of conversation requiring no further consultation could be sent to assist consultation records.		
		Text	Incoming	27/08/2024	RP confirmed by text that they do not operate in the area of consultation and require no further information.		
Wyndham Wildcatch	3	Email	Outgoing	11/07/2024	Offer to engage as a fishing business in the area.	Y	Eni has been seeking to consult Wyndham Wildcatch since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Wyndham Wildcatch to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Wyndham Wildcatch to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Phone	Outgoing	11/07/2024	To RP to introduce Eni and inform that Fisheries KNX gave us his number on his approval. Said would follow up with an email.		
		Phone	Outgoing	17/07/2024	To RP to check he received email, and to ask if it was possible to meet with him face to face in Wyndham.		
		Email	Outgoing	17/07/2024	Confirmation of visit to Wyndham and meeting on 1 August.		
		Text	Outgoing	31/07/2024	To RP to confirm we were catching up tomorrow (01/08).		
		Text	Incoming	31/07/2024	From RP confirming.		
		Text	Incoming	1/08/2024	From RP inviting Eni to visit him at his address. With directions.		
		Text	Outgoing	1/08/2024	To RP to confirm we would visit him at his address.		
		Text	Incoming	1/08/2024	Address details provided.		
		Text	Outgoing	1/08/2024	To RP - acknowledgement of receipt.		
		Meeting	In Person	1/08/2024	Face to face meeting with commercial fisher RP recently returned from fishing activity. Refer to File Note 240801_FN_Wyndham Wildcatch_Consultation		
					Email thanks for time to meet in person to discuss the proposed activity. Confirmed comments advising - commercial fisher engagement - preference for industry newsletters and advertising, multiple emails regarding consultation causes information to be missed. - Noted hardcopies are useful but may not be received in a timely manner due to extended fishing activities. - Confirmation that area of RP's fishing activity will not be affected by the EMBA.		
		Email	Outgoing	14/08/2024	- Conclusion of consultation effort with thanks and invitation to reengage with additional comments prior to end of August.		
Oil & Gas							
Beach Energy	1	Email	Outgoing	4/06/2024	Update to RP as JV partner	N	Eni has been seeking to consult Beach Energy since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Beach Energy to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Beach Energy to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Meeting	In Person	3/07/2024	Petrel-3 and 4 Decommissioning TCM meeting with JV partners, activity discussed.		
		Email	Outgoing	29/07/2024	Email follow up to consultation discussion in TCM with copy of Activity flyer and requesting feedback by 12 August.		
		Email	Outgoing	16/08/2024	Email to JV partners requesting a response to the consultation process for Petrel Decom and assistance with conclusion to effort.		
		Email	Incoming	20/08/2024	Confirmation from JV partner of no feedback on the consultation process. Conclusion of effort.		
EOG Resources Australia	3	Email	Outgoing	20/06/2024	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult EOG since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow EOG to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for EOG to provide objections or claims in relation to the EP and for consultation
		Email	Outgoing	26/06/2024	Follow up email to confirm receipt of provided information, Eni commitment to provision of adequate information for assessment of activity, offer to respond to any queries or concerns, online location for more detail and advance notice of phone call.		
		Email	Outgoing	3/07/2024	Resent invitation to consult noting updated EP name and Flyer		
		Email	Outgoing	15/07/2024	Resent invitation to consult with opt out option		
		Email	Outgoing	30/07/2024	Resent invitation to consult with option to opt out.		
		Email	Outgoing	9/08/2024	Email sent to two new contact addresses per EOG's own consultation efforts to seek assistance to progress.		
		Email	Incoming	9/08/2024	Email to direct RP failed. Generic email also used and will be followed up next week.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
		Email	Incoming	9/08/2024	Email advice RP direct email no longer with company. Confirmation of receipt of information and no issues in relation to the activity. - Request for updates given the proximity to WA-488-P and any (unlikely) potential for simultaneous operations.		to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	14/08/2024	Email response with thanks for the feedback, acknowledgement of request and conclusion to consultation efforts.		
		Email	Incoming	10/08/2024	Email from RP Beehive Project Consultation Team confirming no issues and requesting material updates.		
Inpex	2	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult INPEX since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow INPEX to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for INPEX to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	25/6/24	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Outgoing	2/07/2024	Re-sent invitation to consult with updated EP name and activity flyer.		
		Email	Outgoing	15/07/2024	Resent invitation to consult.		
		Email	Outgoing	30/07/2024	Resent invitation to consult.		
		Phone	Outgoing	19/08/2024	Phone call to 1800 consultation number for RP. Voicemail (located in Darwin) with reason for call, contact information and commitment to provide invitations to consultation email.		
		Email	Outgoing	19/08/2024	Follow up email sending trail of consultation effort to consultation email address with activity flyer, timeline and opt out options.		
		Phone	Outgoing	22/08/2024	Phone call to consultation hotline, left message with reason for call and contact details.		
		Email	Outgoing	22/08/2024	Email sent to RP Regulatory and Government Approvals Manager and consultation email seeking guidance for the right internal INPEX person to address the consultation with. Invitation to follow up on any issues or queries with an option to opt out if preferred. Timeline for conclusion of effort and activity flyer included.		
		Phone	Incoming	22/08/2024	Phone call from RP as correct person to engage. Email address missing a letter and not received (no bounce back notifications received by Eni). Resent invitation to direct RP with activity flyer and offer to extend assessment into first week September. Discussion re INPEX upcoming consultation in Bonaparte that will be sent to Eni in October.		
		Email	Outgoing	22/08/2024	Email to direct RP address with thanks for consideration and assessment. Activity flyer and timing into early September noted.		
		Text	Incoming	27/08/2024	Text from RP that information has not been received.		
		Text	Outgoing	27/08/2024	Text response confirming sent and to the right address. Follow-up text to advise email may have gone to junk folder due to being sent from an info email.		
		Email	Outgoing	27/08/2024	Resent email to RP.		
		Text	Incoming	27/08/2024	RP confirmed email not received. Requested landing page information to progress.		
		Text	Outgoing	27/08/2024	Eni rep provided website address confirming activity sheet available on that site.		
		Text	Incoming	28/08/2024	RP responded by text due to IT issues with Eni info email. RP has identified concurrent activities in the area and wishes to establish lines of communication. Requested direct email.		
		Text	Outgoing	28/08/2024	Eni rep provided direct email (external to Eni system) with request that advice is provided by email so direct communication link can be set up with the correct person within Eni.		
		Email	Outgoing	30/08/2024	Follow up email to RP to link to direct Eni Rep email to assist with IT issues receiving from info@petreleni.com.au email and ensure receipt of INPEX feedback and link RP to internal Eni contact for planning purposes for concurrent activities in the Bonaparte Basin.		
		Email	Incoming	31/08/2024	Email from RP IT department to check receipt issues and confirm emails are now getting through.		
		Email	Incoming	30/08/2024	Email from RP confirming potential for concurrent activities in the area and requesting - establishment of a communications protocol to provide each other with notifications in advance of conducting activities in the area. RP to be added as point of contact and requested Eni point of contact for consultation in return for proposed CCS project in October 2024.		
		Email	Outgoing	2/09/2024	Confirmation of receipt of email following IT issues. Acknowledgement of request and advice confirming information will be turned around following an internal Eni meeting. Query for any further issues INPEX may have.		
		Email	Outgoing	3/09/2024	Email from internal Eni rep confirming contacts for INPEX for collaborative consultation on activities within the same area.		
		Email	Incoming	3/09/2024	RP acknowledged information provision with thanks.		
		Email	Outgoing	10/09/2024	Post consultation effort follow up.		
Melbana (Formerly MEO International)	3	Phone	Outgoing	20/06/2024	Phone call to Melbourne office number and left message	N	Eni has been seeking to consult Melbana since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Melbana to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Melbana to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.		
		Email	Outgoing	26/6/24	Follow up email to confirm receipt of provided information, online location for more detail and advance notice of phone call.		
		Email	Outgoing	3/07/2024	Resent invitation to consult with updated EP name and flyer.		
		Email	Outgoing	15/07/2024	Resent invitation to consult with opt out option.		
		Email	Outgoing	30/07/2024	Resent invitation to consult with opt out option		
		Phone	Outgoing	16/08/2024	Phone call to registered office in Sydney. Straight to voicemail. Left explanation for call and invitation to return or provide feedback.		
		Email	Outgoing	16/08/2024	Email resent with activity flyer to follow up engagement efforts and offer to discuss any issues that may arise. Option to opt out included.		
		Phone	Outgoing	22/08/2024	Phone call to Melbourne office - straight to voicemail. Left message with explanation for call and invitation to consult. Confirmed email invitation will be re-sent.		
		Email	Outgoing	22/08/2024	Follow up email with invitation to consult, timeline for conclusion of effort and activity flyer.		
		Email	Outgoing	22/08/2024	Email to Exploration Manager with attached emails to date, activity flyer, consultation timeline and option to opt out if preferred.		
		Email	Incoming	22/08/2024	Email from RP with apology for delayed response and confirmation that Melbana has no issues with the proposed activity.		
		Email	Outgoing	23/08/2024	Email response to RP with thanks for advice and conclusion to consultation effort.		
		Email	Outgoing	4/06/2024	Update to RP as JV partner		
		Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.		Eni has been seeking to consult Santos since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Santos to make an informed

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
Santos	1	Meeting	In Person	3/07/2024	Petrel-3 and 4 Decommissioning TCM meeting with JV partners, activity discussed.	N	provided sufficient information to allow Santos to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Santos to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	29/07/2024	Email to JV partner to confirm consultation and seek close out by 12 August.		
		Email	Outgoing	16/08/2024	Email to JV partners requesting a response to the consultation process for Petrel Decom and assistance with conclusion to effort.		
		Email	Incoming	20/08/2024	Confirmation from JV partner of no feedback on the consultation process. Conclusion of effort.		
NGO's							
Australian Marine Conservation Society NT	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Australian Marine Conservation Society NT since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Australian Marine Conservation Society NT to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Australian Marine Conservation Society NT to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	30/07/2024	Resent invitation to consult with updated flyer.		
		Phone	Outgoing	9/08/2024	Phone call to RP to follow up. Not available. Left voicemail with full details and reason for the call.		
		Phone	Outgoing	15/08/2024	Phone call to RP to follow up. Not available. Left voicemail with full details and reason for the call.		
		Email	Outgoing	15/08/2024	Follow up email to phone call seeking progression of consultation.		
		Phone	Outgoing	22/08/2024	Phone call to RP to follow up on consultation invitation. Not available - left message with reason for call and Eni rep direct mobile.		
		Email	Outgoing	22/08/2024	Follow up email to invitation with activity flyer.		
		Phone	Outgoing	26/08/2024	Phone call answered by RP reception. Confirmation that invitation and information was distributed internally but individual contact information can not be provided. Eni Rep advised consultation effort is scheduled to conclude on Friday, 30th and seeking opportunity to discuss with internal RP to ensure all information required has been provided and understand if any issues or concerns. Eni Rep provided direct mobile number.		
		Email	Outgoing	27/08/2024	Email follow up to phone call confirming consultation timeline, offer phone call to discuss and provide immediate assistance in progressing.		
				3/09/2024	Follow up email to seek post consultation effort conclusion feedback prior to submission. Option to opt out offered.		
Environs Kimberley	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Environs Kimberley since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Environs Kimberley to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Environs Kimberley to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	30/07/2024	Resent invitation to consult with updated flyer		
		Phone	Outgoing	2/08/2024	Call to RP - answered by EKCCI CEO who confirmed knowledge of consultation and assistance in organising KCCCI event.		
		Email	Outgoing	9/08/2024	Email to EKCCI CEO to clarify follow up for Environs Kimberley and correctness of contact to ensure thoroughness of consultation efforts.		
		Email	Incoming	9/08/2024	Confirmation Environs Kimberley don't have a presence in the East Kimberley and suggestion for follow up through Broome CCI or generic email (already in use).		
		Phone	Outgoing	13/08/2024	Phone call to RP. Advised Environs Kimberley at capacity with a focus on North West Shelf and onshore fracking. Pleased to hear of a program to P&A abandoned wells in the Bonaparte Basin. Not in a position to consult due to resourcing issues but asked Eni to continue emailing info email and they will do best to address.		
		Email	Outgoing	14/08/2024	Resent invitation to consult as requested with activity flyer acknowledging work load limitations. Duration and cessation of consultation efforts noted within email.		
		Email	Outgoing	26/08/2024	Resent invitation with timeline indicated for conclusion at the end of the week. Option for opt out and contact information for engagement.		
		Email	Outgoing	3/09/2024	Email follow up post consultation effort conclusion and prior to submission.		
Greenpeace Australia Pacific	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Greenpeace Australia since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Greenpeace Australia to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Greenpeace Australia to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Incoming	20/06/2024	Auto acknowledgement of receipt of email.		
		Email	Outgoing	30/07/2024	Resent invitation to consult with updated flyer.		
		Email	Incoming	30/07/2024	Auto acknowledgement of receipt of email.		
		Phone	Outgoing	9/08/2024	Phone call to RP to follow up on consultation invitation. Emails had not been forwarded. Receptionist committed to forwarding to internal person responsible. Recommended follow up in a week.		
		Phone	Outgoing	15/08/2024	Phone call to RP, outside of hours due to time difference. No option to leave a message.		
		Phone	Outgoing	16/08/2024	Phone call to RP to follow up on consultation information. Confirmation email had been forwarded to internal person responsible but RP would resend on their internal comms to remind assessor. Eni rep offered to resend email with update on consultation timing, reiterating the companies genuine efforts to engage and understand any issues.		
		Email	Outgoing	16/08/2024	Resent email with invitation to consult and activity flyer, consultation timeline and company's genuine desire to engage and understand any relevant issues.		
		Email	Incoming	16/08/2024	Acknowledgement of response and forwarding of email direct to staff member in charge of external consultations along with a direct message advising the upcoming consultation conclusion.		
		Email	Outgoing	16/08/2024	RP thanked sincerely for assistance in progressing consultation.		
		Phone	Outgoing	22/08/2024	Phone call to RP main number. Accidental hang up. Recalled. Spoke to previous RP that assisted with internal distribution. RP could not provide internal RP contact details - against policy - but offered to send a direct internal message with reason for call and invitation for chat to assist in provided information and context for assessment.		
		Email	Outgoing	27/08/2024	Email drawing RP attention to conclusion of effort date and providing opportunity to discuss with internal RP to assist with queries.		
		Email	Outgoing	3/09/2024	Email to RP post consultation effort conclusion and prior to submission seeking input from RP. Option to opt out offered.		
		Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.		
		Email	Outgoing	30/07/2024	Resent invitation to consult with updated flyer		
		Phone	Outgoing	2/08/2024	Phone call to RP to follow up. Left voicemail.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
Sea Turtle Foundation	4	Phone	Outgoing	16/08/2024	Phone call to RP to follow up. Left voicemail with details for call. Will aim to	N	Eni has been seeking to consult the Sea Turtle Foundation since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow the Sea Turtle Foundation to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for the Sea Turtle Foundation to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Website	Outgoing	16/08/2024	Submission of online form to supplement contact efforts to engage.		
		Email	Outgoing	16/08/2024	Re-sent email with activity flyer and notification of attempts to engage. Time line for consultation provided.		
		Email	Incoming	21/08/2024	Acknowledgement of receipt and advice of distribution to the Chair and Board of Directors.		
		Email	Outgoing	21/08/2024	Email acknowledged and commitment to follow up early the following week ahead of the conclusion to consultation efforts. Contact phone number provided to assist with any requirements for additional information or questions the Board and Chair may have.		
		Email	Outgoing	27/08/2024	Follow up email to RP regarding consideration by Board and Chair of the activity and inviting a phone call to discuss and provide immediate assistance in progressing. RP notified of scheduled conclusion to the consultation effort.		
		Email	Incoming	28/08/2024	RP responded that the foundation has determined it does not have the capacity to engage. Request for retention as an interested stakeholder for further consultation phases.		
				28/08/2024	Email to RP thanking them for the advice provided and concluding consultation effort based on that advice. Commitment to retain Sea Turtle Foundation as a stakeholder for further consultation phases. Contact information provided for re-engagement post consultation if required.		
Wilderness Society	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	Y	Eni has been seeking to consult Wilderness Society since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Wilderness Society to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Wilderness Society to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	30/07/2024	Resent invitation to consult with updated flyer.		
		Email	Incoming	2/08/2024	RP advised email only just distribute internally. Noted closure of 2 August and committed to a response next week. TWS consider themselves an RP and have particular interest in decommissioning activities.		
		Email	Outgoing	2/08/2024	Thanks for attention and commitment to revert the following week.		
		Phone	Outgoing	16/08/2024	No answer. Left voicemail with explanation for call, extension of consultation timing, invitation to call and discuss or provide any relevant issues by email to be addressed.		
		Phone	Incoming	16/08/2024	RP returned call. Refresh on invitation consult and extension of consultation period. RP apologised for not reverting as promised and appreciated both the extension and offer to resend the invitation for ease of reference.		
		Email	Outgoing	16/08/2024	Resent email with activity flyer, extended consultation date and offer to discuss any issues that may arise.		
		Phone	Outgoing	22/08/2024	Phone call to RP to follow up on assessment of activity, left message with reason for call and contact information.		
		Text	Outgoing	22/08/2024	Text follow up with explanation for the call and invitation to discuss when RP is available.		
		Email	Outgoing	22/08/2024	Follow up email to RP offering opportunity to discuss information provided and assist with any issues or queries.		
		Email	Incoming	23/08/2024	Email from RP with request for: - confirmation that P&A is part of the decom plan - reference to Best Practice document and guidelines - support for decommissioning to occur asap.		
		Email	Outgoing	27/08/2024	Email response to RP confirming P&A, receipt of Best Practice doc, operations to be conducted in line with act and regulations.		
		Email	Outgoing	30/08/2024	Email to RP to follow up on further feedback for the consultation with direct number provided.		
		Email	Outgoing	3/09/2024	Follow up to answers provided to initial queries post consultation effort conclusion and prior to submission.		
		Email	Incoming	4/09/2024	Email from RP querying - infrastructure removal - confirming an objection to anything other than full removal to seabed floor. RP copied email to NOPSEMA contact to register RP's interest and objection.		
		Email	Outgoing	6/09/2024	RP advised that monitoring activities will be required prior to final determination of infrastructure removal (full, partial or otherwise) to assess the condition of the equipment and the potential impacts to environment, cultural heritage and other marine users. RP's objection to anything other than full removal to be recorded in consultation feedback and assessed accordingly.		
		Email	Incoming	6/09/2024	NOPSEMA representative copied into emails out of office till end September received.		
		Email	Incoming	9/09/2024	RP acknowledged Eni response and inclusion of objection to anything but full removal of the subsea infrastructure. RP requested - an update on the planned activities once monitoring surveys are completed.		
		Email	Outgoing	9/09/2024	Eni Rep responded to email with thanks and queried if any further consultation required prior to submission.		
		Email	Incoming	9/09/2024	RP confirmed ongoing consultation required post survey activities.		
Email	Outgoing	9/09/2024	Eni Rep confirmed ongoing consultation remains open for updates to RP following surveys and how the results impact on plans for infrastructure removal.				
Email	Outgoing	11/09/2024	Confirmation to RP of statement regarding ongoing consultation in the EP. Provided explanation of monitoring required to assess the infrastructure integrity and impacts on final deliberation of end state of facilities. Eni Rep confirmed EP approval required to progress monitoring and survey activities that will support that decision making process. RP position on full removal of all subsea infrastructure noted in the submitted EP and commitment to ongoing consultation for the duration of EP activities. Avenues for additional feedback on the EP via publication on NOPSEMA website for public comment and consideration of feedback and Management of Change process to update EP if required.				
World Wildlife Fund (WWF)	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult WWF since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow WWF to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for WWF to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is
		Email	Outgoing	30/07/2024	Resent invitation to consult with updated flyer.		
		Email	Incoming	30/07/2024	Auto response acknowledging receipt. Allocated ticket number 203294.		
		Phone	Outgoing	9/08/2024	Call to mainline for RP. Responder confirmed receipt of email and ticket allocation. Committed to sending to oceans division for review and will confirm consultation is due to close end August.		
		Phone	Outgoing	16/08/2024	Phone call to main number to follow up on consultation efforts. Refresh on consultation invitation and request to speak to assessor. Oceans team has not provided a response. Offered to resend email and RP reception committed to resending to oceans team to follow up.		
		Email	Outgoing	16/08/2024	Resent invitation to consult with activity flyer.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Relevant Person	Target Group	Consultation Type	Outgoing or Incoming	Date	Summary of correspondence	Relevant matter or claim	Consultation status as per Section 25
		Email	Incoming	16/08/2024	Auto response acknowledgement and ticket allocation 205138.		complete.
		Email	Incoming	16/08/2024	RP advised opt out preference for consultation on this activity due to resourcing challenges.		
		Email	Incoming	17/08/2024	Email advising resolution of ticket 204478.		
		Email	Outgoing	19/08/2024	Eni Rep acknowledged conclusion to consultation effort.		
		Email	Incoming	19/08/2024	Auto response following conclusion to consultation		
Research							
Northern Territory Research							
Australian Marine Sciences Association (NT Branch)	4	Email	Outgoing	20/6/24	Initial outgoing consultation email to relevant persons including a summary of the Petrel-3 and Petrel-4 Decommissioning activities, consultation timing, links to relevant information and contact details. Correspondence included an activity flyer with more detailed information.	N	Eni has been seeking to consult Australian Marine Sciences Association NT since it issued information regarding this EP in June 2024. Eni has made subsequent consultation efforts in accordance with its consultation approach outlined in Appendix C1. Eni has provided sufficient information to allow Australian Marine Sciences Association NT to make an informed assessment of the possible consequences of the activities the subject of this EP on their functions, interests or activities. Eni has provided a reasonable period for Australian Marine Sciences Association NT to provide objections or claims in relation to the EP and for consultation to occur. In these circumstances, Eni considers consultation is complete.
		Email	Outgoing	30/07/2024	Resent invitation to consult with updated flyer.		
		Website	Outgoing	9/08/2024	Send contact request with context through online form on AMSA website - no phone number available.		
		Email	Outgoing	16/08/2024	Eni email to AIMS to see if a contact number can be provided for AMSA to follow up consultation invitation.		
		Online	Online	22/08/2024	Online search for contact information.		
		Email	Outgoing	22/08/2024	Email to RP Chair seeking guidance following unsuccessful engagement attempts seeking guidance for correct person to engage with. Timeline for consultation effort and activity flyer included with Eni rep direct mobile.		
		Email	Incoming	22/08/2024	Out of office email returning 26/8.		
		Email	Outgoing	27/08/2024	Group email to 11 RP's listed in downloadable contacts for AMSANT, offer to provide immediate assistance by phone and confirming consultation timeline scheduled for conclusion.		
		Email	Outgoing	27/08/2024	Group email to 11 RP's listed in downloadable contacts for AMSANT, offer to provide immediate assistance by phone and confirming consultation timeline scheduled for conclusion.		
		Email	Outgoing	27/08/2024	Group email to 11 RP's listed in downloadable contacts for AMSANT, offer to provide immediate assistance by phone and confirming consultation timeline scheduled for conclusion.		
		Email	Outgoing	27/08/2024	Group email to 11 RP's listed in downloadable contacts for AMSANT, offer to provide immediate assistance by phone and confirming consultation timeline scheduled for conclusion.		
		Email	Outgoing	27/08/2024	Group email to 11 RP's listed in downloadable contacts for AMSANT, offer to provide immediate assistance by phone and confirming consultation timeline scheduled for conclusion.		
		Email	Outgoing	27/08/2024	Group email to 11 RP's listed in downloadable contacts for AMSANT, offer to provide immediate assistance by phone and confirming consultation timeline scheduled for conclusion.		
		Email	Outgoing	27/08/2024	Group email to 11 RP's listed in downloadable contacts for AMSANT, offer to provide immediate assistance by phone and confirming consultation timeline scheduled for conclusion.		
		Email	Outgoing	27/08/2024	Group email to 11 RP's listed in downloadable contacts for AMSANT, offer to provide immediate assistance by phone and confirming consultation timeline scheduled for conclusion.		
		Email	Outgoing	27/08/2024	Group email to 11 RP's listed in downloadable contacts for AMSANT, offer to provide immediate assistance by phone and confirming consultation timeline scheduled for conclusion.		
		Email	Incoming	27/08/2024	Failed message sending for one AMSA RP - user does not exist.		
		Email	Incoming	27/08/2024	Out of office notification till June 2025 from one RP on the list.		
		Email	Outgoing	3/09/2024	Email to main email for RP post consultation effort conclusion and prior to submission to seek feedback.		

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Organisation	Relevance or reasoning for engagement	Date Raised	Type of Feedback	Consultation Summary	Summary of Titleholder Correspondence	Relevant matter, Objection or Claim	Assessment of Merits	Outcome of Assessment
Government								
Commonwealth Government								
Australian Communications & Media Authority (ACMA) within the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDC) (Cth)	ACMA can provide advice on whether the activities may have impact on subsea cables.	2/07/2024	Relevant matter	Relevant person confirmed the EMBA is not in the vicinity of any existing protection zones declared by the ACMA; and requested Eni contact the owners of any submarine cables inside and within the vicinity of the EMBA regarding proposed activities. Relevant person recommended engagement with Vocus' North-west Cable System and provided a link to further information. Relevant person recommended Eni contact the Australian Hydrographic Office (AHO) for geospatial coordinates of all active and out-of-service submarine cables. Relevant person recommended consideration of future cable projects and timing in relation to EP activity timing.	Eni noted the EMBA does not overlap with any existing protection zones declared by ACMA. Eni confirmed engagement effort with Vocus had been initiated and concluded confirming infrastructure is 140km distant and no further engagement required. Eni confirmed engagement effort with AHO had been initiated and concluded with a request for activity timing notifications to be provided by Eni.	Relevant person recommended consultation with: 1. Vocus - North West Cable System 2. Aus Hydro Office - location of existing submarine cables 3. Consideration for engagement with future projects based on timing of Petrel activity - BW Digital's Hawaiki Nui cable and Inligo Networks Asia Connect Cable.	Relevant matter has merit: 1. The presence of subsea marine cables within the region of the activity should be considered within the EP. 2. Relevant person identified additional relevant persons (Vocus and AHO) for engagement.	1. Existing and proposed cables within the EMBA have been described in Section 4.6.6. Impact to subsea cables was considered and not evaluated further in Section 7.1 and 8.1. Impact to subsea cables was assessed in Section 8.6 (Accidental release - MDO) of the EP. 2. AHO and Vocus were engaged as part of consultation for the EP.
Australian Fishing Management Authority (AFMA)	Commonwealth Fishery boundaries extend from 3nm to the EEZ within which Eni Australia activities occur.	28/06/2024	Relevant matter	Relevant person stated they have no specific comment regarding the Petrel activities; but encourage Eni to contact fishers with entitlement to fish in the proposed area, specifically Northern Prawn Fishery and Commonwealth Fishing Association. Relevant person provided contact details for both entities.	Eni provided Relevant Person with a summary of the fishing bodies (Commonwealth, WA and NT) invited to consult including the recommended organisations, Northern Prawn Fishery and Commonwealth Fishing Association.	Relevant person raised: 1. That fishers with entitlement to fish within the proposed areas are consulted: - Northern Prawn Fishery - Commonwealth Fisheries Association	Relevant matter has merit: 1. Relevant person identified additional relevant persons who should be consulted: - Northern Prawn Fishery - Commonwealth Fishing Association	NPFI and CFA were engaged as part of consultation for the EP. No change required to EP.
Australian Hydrographic Office (AHO) (Cth)	Need to be kept informed of location of activities so the notice to mariners can be published.	24/06/2024	Relevant matter	Relevant Person requested notification of activity timing as it becomes available.	Eni acknowledged the request for notifications and confirmed they would be provided as activities and timing became available.	Relevant person raised: 1. Requirement for activity notifications to be provided.	Relevant matter has merit: 1. Activity notifications should be provided in line with Maritime Safety Information compliance.	Notification to AHO is included as a routine reporting requirement prior to the activity in Table 10-3 (Section 10.8).
Australian Maritime Safety Authority (AMSA)	AMSA publish radio and navigation warnings for activities in the Commonwealth marine area. AMSA provide specific information to be included in the EP (notifications).	29/07/2024	Relevant matter	Relevant person requested that Eni ensure that timely and relevant Maritime Safety Information (MSI) is promulgated for the area and nature of operations; and provided instructions. Relevant person reminded vessels of their obligations under International Rules for Preventing Collisions at Sea (COLREGs), notifications to AHO prior to operations and to use appropriate lights and shapes. Relevant person provided instructions for how to obtain vessel traffic information and data.	Eni confirmed the items raised have been included in the EP. Eni confirmed consultation with AHO had been initiated and mutually concluded prior to the receipt of this advice.	Relevant person raised: 1. Maritime Safety Information be promulgated in the EP. 2. Obligations under international rules for Preventing a Collisions at Sea (COLREGs) being notification requirements through AHO prior to operations and use of appropriate lights and shapes by vessels.	Relevant matters have merit: 1. Maritime safety information should be promulgated as per relevant person instructions to notify other marine users of the proposed activity. 2. Marine Order 30 (Prevention of Collisions) (under the Commonwealth Navigation Act 2012) enacts the International Rules for Preventing Collisions at Sea (COLREGs).	1. Notification to AMSA (AMSA Rescue Centre) and AHO (to enable Notice to Mariners) are included as routine reporting requirements prior to the activity in Table 10-3 (Section 10.8) and CM-07 (Section 9). 2. Marine Order 30 (Prevention of Collisions) has been included in CM-06 (Section 9).
Clean Energy Regulator (CER)	The CER has administrative responsibilities for the National Greenhouse and Energy Reporting Scheme, the Emissions Reduction Fund, the Renewable Energy Target and the Australian National Registry of Emissions Units.	19/07/2024	Relevant matter	Relevant person provided guidance on NGER reporting expectations. Relevant person provided further information following Eni advice that NGER reporting has been considered in the development of the EP noting that an assessment would need to be made if the activity triggers the safeguard requirements and this should also be included in the EP.	Eni confirmed the NGER reporting has been considered in the development of the EP. Eni confirmed the request for assessment should activity trigger safeguard requirements for inclusion in the EP.	Relevant person raised: 1. Eni conduct periodic reviews to determine whether the operations conducted during the decommissioning trigger obligations under the: · National Greenhouse and Energy Reporting Scheme, under the National Greenhouse and Energy Reporting Act 2007 (NGER Act) · The Safeguard Mechanism, underpinned by the NGER framework · ACCU Scheme (formerly the Emissions Reduction Fund), under the Carbon Credits (Carbon Farming Initiative) Act 2011 · Renewable Energy Target, under the Renewable Energy (Electricity) Act 2000, and · Australian National Registry of Emissions Units, under the Australian National Registry of Emissions Units Act 2011. 2. Obligations under the Safeguard Mechanism if the activities of the operations exceed covered 'scope 1' emissions.	Relevant matters have merit: 1. NGER reporting compliance, in the event the activity triggers obligations, should be outlined in the EP, including; 2. Assessment of obligations to be completed if activities exceed covered Scope 1 emissions.	NGER reporting requirements have been included in Section 7.4 (Atmospheric emissions and GHG) and Table 10-3 (Section 10.8).
Department of Agriculture, Fisheries and Forestry (DAFF) - Fisheries	DAFF have advised they wish to be engaged where there is possible disruption to Commonwealth fisheries.	5/08/2024	Relevant matter	Relevant person noted likelihood of prawn fishing activity in the area and consultation should be extended to - AFMA and - Northern Prawn Fishery	Eni confirmed consultation initiated with AFMA (concluded at the time of correspondence) and Northern Prawn Fisheries (ongoing at the time of correspondence).	Relevant person raised: 1. Prawn fishing activity in the area recommending engagement with AFMA. 2. Prawn fishing activity in the area recommending engagement with Northern Prawn Fishery.	Relevant matters have merit: 1. Relevant person confirmed the identification of relevant organisation Australian Fish Management Authority for fishing activity in the area. 2. Relevant person confirmed the identification of relevant organisation Northern Prawn Fishery for prawn fishing activity in the area.	AFMA and NPFI were engaged as part of consultation for the EP. No change required to EP.
Department of Climate Change, Energy, The Environment and Water (DCCEEW)	DCCEEW is responsible for the management of Australian Marine Parks, provision of advice on management of activities located in AMPs or in proximity.	21/08/2024	Relevant matter	Relevant person requested Eni's awareness of obligations under the Act, including the significant impacts guidelines should be applied to potential impacts on protected matters. Relevant person confirmed formal assessment could not be undertaken until EP had been submitted to the regulator.	Eni confirmed internal awareness of obligations and significant impact guidelines under the Act in development of EP.	Relevant person raised: 1. Requirement for Eni to consider the obligations and significant impacts guidelines in development of the EP.	Relevant matters have merit: 1. Significant impact guidelines and company obligations under the Act should be considered in the development of the EP.	EPBC Significant Impact Guidelines and obligations under the EPBC Act are described in Section 2.1.2 and are part of acceptability criteria.

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Organisation	Relevance or reasoning for engagement	Date Raised	Type of Feedback	Consultation Summary	Summary of Titleholder Correspondence	Relevant matter, Objection or Claim	Assessment of Merits	Outcome of Assessment
Department of Climate Change, Energy, The Environment and Water (DCCEEW) (Sea Dumping)	DCCEEW is responsible for the management of Australian Marine Parks, provision of advice on management of activities located in AMPs or in proximity.	27/08/2024	Relevant matter	Relevant person confirmed the company understanding of permit requirements under the Act for potential partial removal of infrastructure. As Petrel-3 was temporarily plugged and abandoned in 1981, prior to the act coming into force on 6 March, does not require a permit for partial removal of infrastructure. Petrel-4, was temporarily plugged and abandoned in 1988, after the Act came into force, does require a permit for partial infrastructure removal.	Relevant person confirmed Eni's assessment of the permit requirements for the potential partial removal of infrastructure for Petrel-3 and Petrel-4.	Relevant person raised: 1. Requirement for Eni to obtain a permit under the Act for Petrel-4 in the event of partial removal of infrastructure.	Relevant matters have merit: 1. Permit required for Petrel-4 under the Act if decommissioning of that well involves partial removal of infrastructure.	Inclusion of the requirement for a Sea Dumping permit for Petrel-4 if the wellhead is partially or fully left in-situ have been included in the EP (Section 2.1.3, 7.3 and 8.1). There is no such requirement for Petrel-3 as the well was temporarily abandoned prior to the Sea Dumping Act being enacted.
Northern Territory Government								
Department of Industry, Tourism and Trade (DITT) - NT Fisheries	State responsibility for fishing and offshore activity where operations will traverse to and from Operational Area. Some NT fisheries (whose boundaries may extend beyond NT waters) are located in the ZPI. Impacts to commercial fishing in the NT from activities described in the EP.	24/07/2024	Relevant matter	Relevant person recommended notification to NTSC, AFMA & NT Fisheries once dates for activities are confirmed. Relevant person recommended consultation with Northern Prawn Fishery regarding protrusions on seabed that may affect prawn fishers. Relevant person recommended advertising in the NTSC newsletter focussing on definition of an exclusion zone and feedback options for fishers.	Eni confirmed extensive consultation efforts with fishery management authorities, councils and individual licensees including the referenced entities provided by the Relevant Person, and inclusion of notifications to the RP and NTSC. Eni confirmed consultation efforts initiated and ongoing with Northern Prawn Fishery. Eni confirmed it would seek an opportunity to advertise the activity consultation in the NTSC newsletter with options for feedback for fishers included. Eni confirmed the assessment of exclusion zone distances for different rig types and the inclusion of those distances in the EP.	Relevant person raised: 1. Consultation with fishery management authorities, specifically NTSC, AFMA and NT Fisheries. 2. Consultation with Northern Prawn Fishery 3. Advertising the activity and information links in the NTSC newsletter to members and provide avenues for feedback. 4. Provision of exclusion zone distances for each rig type under consideration be detailed in the EP.	Relevant matters have merit: 1. Fishing authorities and councils on federal and state levels should be engaged regarding activity within the EMBA, ZPI and OA and the potential impact on their members. 2. Confirmation of identification of Northern Prawn Fishery as a relevant organisation active in the general location and should be consulted on actual activity and potential impacts. 3. Advertising in the NTSC newsletter will widen consultation efforts with the fishing industry in the Northern Territory. 4. Exclusion zones for rig types under consideration to be confirmed and embedded in the EP for marine safety notifications and fishing industry awareness.	1. Fishing councils and authorities have been engaged for this EP, as identified in Appendix C4a. 2. NPFI were engaged as part of EP consultation. 3. Advertising was undertaken in the NTSC newsletter, as identified in Appendix C3. 4. Exclusion and cautionary zones around the MODU are described in Sections 3.5.1 and 7.2.
Department of Transport - Marine Safety (NT)	Participant in response exercises and potential actual incidents.	8/08/2024	Relevant matter	Relevant person recommended consultation with AMSA. No other consultation required.	Eni confirmed consultation with AMSA had been initiated and concluded prior to DoT-NT recommendation to AMSA satisfaction.	Relevant person raised: 1. Consultation with AMSA.	Relevant matter has merit: 1. Confirmed Eni's identification of AMSA as a relevant person / organisation.	AMSA was engaged as part of EP consultation. No change required to EP.
Northern Territory Regional Harbourmaster, part of DIPL	Relevant when the activity could impact on Port operations (such as an oil spill).	24/07/2024	Relevant matter	Relevant person distributed activity information to NTEPA and advised Eni consultation should be directed to that entity.	Eni confirmed NTEPA had been identified as a Relevant Person and consultation was underway at the time of receipt of this advice.	Relevant person raised: 1. Directing consultation to NTEPA	Relevant matter has merit: 1. Confirmation of identified relevant person NTEPA - for consultation.	NTEPA was engaged as part of EP consultation. No change required to EP.
West Australian Government								
Department of Biodiversity, Conservation and Attractions (DBCA)	Relevant when activities undertaken outside of a marine park may impact on the values within a marine park (such as an oil spill).	14/08/2024	Relevant matter	Relevant person advised Eni consideration of the following should be included in the oil spill modelling: - a plume from Berkley River that moves with the tide. - high probability of cyclones during wet season and impact of cyclones in oil spill modelling.	Eni to ensure tidal data is taken into account in oil spill modelling. Eni to include information on cyclone probability during the wet season and its impact to oil spill modelling.	Relevant person raised: - tidal data be considered in oil spill modelling - probability of cyclones during wet season and the impact on oil spill modelling.	Relevant matter has merit: 1. The inclusion of local knowledge regarding tidal data may enhance the oil spill modelling. 2. The increased risk of cyclones during the wet season may impact spill modelling outcomes.	1. The spill modelling uses 10 years of metocean data (from 2010-2019). Tidal currents are included in the metocean data used for the modelling, which are influenced by the significant tidal range (i.e. Berkley River), and the longshore or ocean currents. This combination ensures a more accurate simulation of the plume's movement, as the interplay between tides and ocean currents is crucial for understanding how the plume will disperse over time. The full report is included as Appendix D. 2. The spill modelling uses 10 years of metocean data (from 2010-2019), which saw multiple cyclones. These conditions are incorporated into modelling as the historical wind and ocean current data capture the effects of cyclones when they pass through the region. When a cyclone occurs within the dataset's time frame, its influence on both the wind patterns and ocean currents is reflected in the model, replicating the forcing of the event. The full report is included as Appendix D.
Department of Biodiversity, Conservation and Attractions (DBCA)	Relevant when activities undertaken outside of a marine park may impact on the values within a marine park (such as an oil spill).	19/08/2024	Relevant matter	Relevant person recommended Eni provide enough information to ensure that RP's are confident of the EMBA not reaching shore and why.	Eni confirmed the explanation of oil spill modelling data in the EP to ensure RP's confidence of the EMBA not reaching shore.	Relevant person raised - explanation of oil spill modelling in the EP to ensure RP's confidence that the EMBA will not reach shore.	Relevant matter has merit: 1. Clear communication of the process for oil spill modelling will help to instil confidence in relevant persons of the stated outcomes.	The spill modelling and thresholds used are described in Section 8.6.2, and the full report included as Appendix D. All relevant persons were provided with figures showing the ZPI and EMBA in the flyer and website landing page, and these are explained.
Department of Jobs, Tourism, Science and Innovation (JTSI)	Potential influencer if required, relationship build against future activities.	24/07/2024	Relevant matter	Relevant person recommended consultation with DEMIRS. No other consultation required.	Eni confirmed consultation with DEMIRS had been initiated and was ongoing at the time of the Relevant Person's recommendation.	Relevant person raised: 1. Directing consultation to DEMIRS	Relevant matter has merit: 1. Confirmation of identified relevant person DEMIRS - for consultation.	DEMIRS was engaged as part of EP consultation. No change required to EP.

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Organisation	Relevance or reasoning for engagement	Date Raised	Type of Feedback	Consultation Summary	Summary of Titleholder Correspondence	Relevant matter, Objection or Claim	Assessment of Merits	Outcome of Assessment
Department of Energy, Mines, Industry, Regulations and Safety (DEMIRS)	Department of responsible WA Minister who sits on the Offshore Petroleum Joint Authority. Planned activities occur in the Commonwealth marine environment offshore areas on the border of the NT and WA. Notifications may be required.	7/08/2024	Relevant matter	Relevant Person provided guidance on reporting requirements should any incident impact WA state land or water.	Eni acknowledged receipt of the guidelines for reporting requirements to the RP in the event an incident impacts WA state land or water. Eni confirmed the modelling places the EMBA solely within Commonwealth waters.	Relevant person raised: 1. Reporting expectations for any incident that impacts WA state waters.	Relevant matter has merit: 1. Relevant person has jurisdiction for reporting requirements should any incident impact WA state land or water.	Notification to DEMIRS in the event of a spill is included in Table 10-3 and Section 8.6.6.
Dept of Primary Industries and Regional Development (DPIRD)	Can provide information on marine protected areas/protected species and fisheries and management controls implemented to manage marine pest risks associated with the activities.	13/08/2024	Relevant matter	Relevant person requested all chemicals and fluids used in the activity are selected on the criterion that they are the lowest impact.	Eni acknowledge direction from the RP to ensure all chemicals and fluids used in the activity are selected on the criterion that they are the lowest impact and verified by a third party to objectively ensure compliance.	Relevant person raised: 1. all chemicals and fluids used in the activity be selected based on lowest impact and this selection is verified by a third party.	Relevant matter has merit: 1. Selection of chemicals and fluids used in the activity under the criteria of lowest impact will contribute to the mitigation of environmental risks associated with the activity.	1. Eni's Chemical risk assessment process is described in Section 10.14 and comprises CM-21.
Dept of Primary Industries and Regional Development (DPIRD)	Can provide information on marine protected areas/protected species and fisheries and management controls implemented to manage marine pest risks associated with the activities.	5/09/2024	Relevant matter	Relevant person raised confirmed its responsibility for fish stocks up to 200 NM to the Exclusive Economic Zone and the potential overlap of Commonwealth and NT managed fisheries. Relevant person expressed a particular interest in the end state of the decommissioning and preference for a focus on the most minimised impact to seabed ecosystem.	Eni acknowledged the RP interest in the end state of decommissioning and the focus on seeking the most minimised impact to the seabed ecosystem and confirmed the final determination of infrastructure removal and end state of decommissioning will be dependant on the monitoring surveys to understand the integrity of the infrastructure and the impacts that removal will have on the seabed environment. Eni confirmed infrastructure removal options will be assessed across environment, cultural heritage and other marine users.	Relevant person raised: - RP has jurisdiction for fish stocks up to 200 NM to the Exclusive Economic Zone which has the potential to overlap of Commonwealth and NT managed fisheries. - RP has particular interest in the end state of the decommissioning and a preference for focus on the most minimised impact to seabed ecosystem	Relevant matter has merit: 1. Relevant person has jurisdiction for fish stocks that may overlap with other Commonwealth and State managed fisheries. 2. Minimising the impact of the activity to the seabed ecosystem is a consideration in assessment of the options for infrastructure removal dependant on the integrity of the equipment and potential for seabed disturbance.	1. WA-managed fisheries have been described in Section 4.6.1 and potential impact evaluated in Sections 7.2, 8.1 and 8.3. 2. DPIRD query addressed in Sections 3.6, 7.2 and 8.1 regarding wellhead removal options.
Dept of Primary Industries and Regional Development (DPIRD)	Can provide information on marine protected areas/protected species and fisheries and management controls implemented to manage marine pest risks associated with the activities.	13/09/2024	Relevant matter	Relevant person confirmed their identification as a relevant person based on the permit area and its location which has the potential to impact fish stocks under the relevant person's jurisdiction and the appropriate peak industry bodies for consultation as relevant persons / organisations.	Eni acknowledged RP confirmed to be a 'relevant person' based on the permit area, with it being adjacent to WA waters, and with the ZPI potentially impacting fish resources and the aquatic environment managed under the WA fisheries legislation; and that under the Offshore Constitutional Settlement, fisheries inside the 200 nautical mile limit off the WA coast come under WA State control (with some exceptions). Eni confirmed receipt of recommendations for Spill Contingency Plans, fish spawning within the North Coast Bioregion, vessel pest management procedures. Recommendations of actions and potential impacts to fisheries, resources and the aquatic environment, including the assessment of options for the end state of facilities.	Relevant person : - provided the various fishing interests (including peak fishing bodies) that may be associated with the proposed activities. - offered recommendations of actions and requests for the associated Spill Contingency Plans. - provided information regarding specific fish species that may be spawning within the North Coast Bioregion where the proposed activities will take place. - provided advice regarding the requirement for all vessel managers and operators to minimise the risk of translocating pests and diseases into or within WA waters. - offered recommendations of actions and requests for all potential impacts to fisheries, fish resources and the aquatic environment including assessment of end state of the facilities.	Relevant matter has merit: 1. EP should include consideration of the impact on other marine users in the vicinity of the activity. 2. Oil Spill Contingency Plans should assess the impact on WA state waters and if actions are required for the Relevant Organisation. 3. Fish spawning in the area is an extension of the potential impact to fishing activities in the area. 4. Pest management of vessels through various control measures will restrict the potential for translocating pests and diseases into or within WA waters. 5. Clarity of industry body expectation of Eni's obligations in the event of a spill impacting WA state waters.	1. Impact to other marine users, including fisheries, is assessed in Sections 7.2 and 8.1 of the EP. 2. The Oil Pollution Emergency Plan (OPEP) is included in Appendix E of the EP. The OPEP outlines response plans in the event of a spill. Although modelling predicts an oil spill will not reach WA state waters, DPIRD are included as requiring notification if a spill is heading towards WA waters. The impact of a potential oil spill is assessed in Section 8.6 of the EP, however the focus is Commonwealth waters because modelling does not predict contact with WA waters. 3. Potential impact to larval or egg stages of fish (as Plankton) has been assessed in Sections 7.7, 7.8 and 8.6. 4. The risk of marine pest introduction is managed in accordance with several standards including WA DPIRD Biofouling and Biosecurity Policy (Section 8.3.6). Pest management of vessels is carried out based on control measures CM-26, CM-27 and CM-28 (Section 9.1). DPIRDs concerns were noted in Section 8.3.6. Notification to DPIRD in the event of any suspected marine pests or diseases is included in Table 10-3. 5. No change required to the EP.
Department of Transport (DoT)	Informs the development of the Petrel OPEP - preparedness and response as they relate to State Control Agency functions.	25/06/2024	Relevant matter	Relevant Person confirmed engagement requirements with DoT WA in the event of a spill impacting state waters within its jurisdiction.	Eni confirmed the oil spill modelling for the activity is completely within Commonwealth waters and there is no expected impact to state waters in such a scenario.	Relevant person raised: 1. Engagement with DoT-WA in the event of a spill impacting state waters.	Relevant matter has merit: 1. Relevant person requested to be notified in the case of a hydrocarbon spill which is relevant to their jurisdiction.	Notification to DoT in the event of a spill is included in Table 10-3 and Section 8.6.6.
Marine Safety Branch - Department of Transport	Participant in response exercises and potential actual incidents.	16/07/2024	Relevant matter	Relevant person directed engagement efforts to Marine Pollution division.	Eni confirmed engagement initiated with Marine Pollution (AMSA) and was ongoing at the time of receipt of advice.	Relevant person raised: 1. Engagement with Marine Pollution for consultation.	Relevant matter has merit: 1. Relevant person confirmed identification of AMSA by Eni for consultation.	AMSA was engaged as part of EP consultation. No change required to EP.
Northern Territory Local Government								
West Daly Regional Council	Represents the Traditional Owner group of Wadeye with sea country that may overlap with EMBA. Contact to be made via Wadeye - Community Development Officer	20/08/2024	Relevant matter	Relevant person requested Eni ensures consultation with Traditional Owners in the area.	Eni confirmed extensive consultation effort with Traditional Owners through multiple avenues of contact and face to face meetings where ever possible, including on-Country remote locations.	Relevant person raised: 1. Consultation to include Traditional Owners in the area of activity.	Relevant matter has merit: 1. Relevant person confirmed Eni's identification of Traditional Owner Relevant Persons in the activity area to be included in consultation efforts.	Relevant person identification process including for Traditional Owners is described in Appendix C1 and listed in Appendix C2. No change required to EP.

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Organisation	Relevance or reasoning for engagement	Date Raised	Type of Feedback	Consultation Summary	Summary of Titleholder Correspondence	Relevant matter, Objection or Claim	Assessment of Merits	Outcome of Assessment
Fisheries								
National Fisheries								
Austral Fisheries	Integrated commercial fishing company that may be operating in the Operational Area.	9/07/2024	Relevant matter	Relevant Person confirmed consultation should include Northern Prawn Fishery and provided contact information for organisation.	Eni confirmed consultation with Northern Prawn Fishery had been initiated and consultation effort was ongoing at the time of receipt of the advice.	Relevant person raised: 1. Consultation to include Northern Prawn Fishery.	Relevant matter has merit: 1. Relevant person confirmed identification of Northern Prawn Fishery by Eni for consultation effort.	NPFI was engaged as part of EP consultation. No change required to EP.
Northern Prawn Fishery Industry (NPF)	Fishery management area overlaps the Operational Area, ZPI and EMBA. The Operational Area falls within a low effort fishing intensity area.	9/08/2024	Relevant matter	Relevant Person advised of preference for operational activity pertaining to the decommissioning to be scheduled with a view to limiting any impacts on the NPF fishing operations during transit operations. JBG fishery is closed from 1st December to 1st August each year which provides a large window of opportunity for ENI vessels to transit the fishery without any disruption to fishing operations.	Eni confirmed Relevant Person feedback and request for scheduling of activity during fishery closure.	Relevant person raised: 1. Preference for activity to take place during fishery closure.	Relevant matter has merit: 1. Planning the activity timing to take place during the fishery closure would reduce the impact on relevant persons with fishing activity in the vicinity of the operations.	Feedback from NPFI on timing of the activity, fishing effort and wellheads was included in the ALARP evaluation and acceptability criteria for Sections 7.2 and 8.1.
Seafood Industry Australia (SIA)	Represent commercial fishers operating in the ZPI and EMBA.	22/08/2024	Relevant matter	Relevant Person confirmed consultation should be directed to WAFIC and NTSC and forwarded the invitation email to those entities. No further consultation required.	Eni confirmed consultation with WAFIC and NTSC had been initiated and effort concluded with both organisations at the time of receipt of advice.	Relevant person raised: 1. Consultation with industry councils on a state level - WA and NT.	Relevant matter has merit: 1. Relevant person confirmed consultation with industry councils as identified by Eni.	WAFIC and NTSC were engaged as part of EP consultation. No change required to EP.
Tuna Australia	Potential activities within the OA, ZPI and EMBA that may be affected in the unlikely event of a hydrocarbon spill.	5/09/2024	Relevant claim	Relevant person requires a service agreement to be in place before progressing consultation and providing feedback.	Eni noted the Relevant Person request for a services agreement. Eni provided information on the company's ethical position regarding payment for consultation. Eni confirmed that the information and time provided allowed for an assessment of function, interests and activities for an activity considered relatively short in duration. Eni confirmed willingness to negotiate a future services agreement based on assessment of future activities and the impact to the Relevant Person.	Relevant person raised: 1. Requirement for a service agreement to be in place before progressing consultation and providing feedback.	Relevant claim was considered and rejected due to: 1. Eni general ethical position on payment for feedback 2. Submission timing 3. The adequate provision of information for the Relevant Organisation to provide feedback on an activity of relatively short duration.	No change required to EP.
Northern Territory Fisheries								
Northern Territory Seafood Council	Fishing management areas that members operate in overlaps with the Operational Area, ZPI and EMBA.	25/07/2024	Relevant matter	Relevant Person requested detailed information in the EP for fishers including the reason and duration of the activity with an explanation of the exclusion zones. Relevant person requested continued engagement during the activity including advance notifications of timing and updates to the program.	1. The EP will include information regarding why the activity is being undertaken, the duration of each stage of the activity and an explanation of an Exclusion Zone. 2. Eni will notify the NTSC of activity timing when available with continued engagement for updates to the program.	Relevant person raised: 1. Information for commercial fishers in the EP including the exclusion zones, timing, duration. 2. Notifications for activity timing and continuation of engagement for updates to the program.	Relevant matter has merit: 1. To provide complete and comprehensive information on how the activity may impact commercial fishers in the area. 2. Advance notifications will be provided through the Relevant Organisation to its members in advance of the activity taking place.	1. NT-managed fisheries have been described in Section 4.6.1 and potential impact evaluated in Sections 7.2, 8.1 and 8.3. 2. Notification to NTSC is included as a routine reporting requirement prior to the activity occurring in Table 10-3 (Section 10.8).
Northern Wildcatch Seafood Australia (NWSA)	Commercial fishery that may be operating in the EMBA	24/07/2024	Relevant matter	Relevant Person requested notifications be provided to fishers for activity timing when available.	Eni confirmed provision of notifications to NWSA on activity timing when confirmed.	Relevant person raised: 1. Notification of activity timing when available.	Relevant matter has merit: 1. Advance notifications will be provided through the Relevant Organisation to its members in advance of the activity taking place.	Notification to NWSA prior to activity occurring has been included in Table 10-3 and Section 7.2.6.
Western Australian Fisheries								
West Australian Fishing Industry Council	Represent commercial fishers with license areas that may overlap the EMBA.	24/07/2024	Relevant matter	Relevant Person queried Eni's assessment of overlap of commercial capture efforts within the operational area and Eni's process for contacting WA licenc holders. Relevant person requested a copy of the OPEP summary to confirm engagement requirements with the peak body in the event that a spill impacts state waters.	Eni provided confirmation that the operational area only intersected with the Commercial Wild Catch component and did not intersect with the 10NM and 60NM Tour Operator or Commercial Collector components. Similarly, the Monitoring EMBA does not intersect with the 10NM Commercial Collector component showing no commercial capture in the OA. Eni provided a list of fishing entities that have received consultation information following the identification of those entities as Relevant Persons. Eni confirmed the approved OPEP will be made available to the Relevant Person when it is available.	Relevant person raised: 1. Inclusion in incident response planning if a spill impacts WA state waters. 2. Confirmation of process to determine individual fisher licensees that may be impacted by the activity and the consultation that has been initiated.	Relevant matter has merit: 1. To include the Relevant Organistaion in spill response activities in the event a spill impacts WA fishing interests. 2. Receive confirmation of the process undertaken by Eni to assess the impact on WA fishers.	1. Notifications to WAFIC in the event of a spill is included in Table 10-3 and Section 8.6.6. 2. WA-managed fisheries have been described in Section 4.6.1 and potential impact evaluated in Sections 7.2, 8.1 and 8.3. Relevant persons including individual licensees were consulted directly, as outlined in Appendix C2 and C4a.

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
Consultation Efforts Log

Organisation	Relevance or reasoning for engagement	Date Raised	Type of Feedback	Consultation Summary	Summary of Titleholder Correspondence	Relevant matter, Objection or Claim	Assessment of Merits	Outcome of Assessment
Aboriginal and Torres Strait Islander/ First Nations Community								
Northern Territory								
Northern Land Council	The NLC's Native Title Act statutory area of responsibility may overlap the EMBA.	1/08/2024	Relevant matter	Relevant Person requested Eni provide notification in the event of an accident, incident or hazard associated with the activity that may impact the NT coastline or sea country with information on mitigation activities	Eni confirmed notification requirements of the Relevant Person in the event of an accident, incident or hazard associated with the activity that may impact the NT coastline or sea country with information on mitigation activities.	Relevant person raised: 1. Notifications required in the event of an incident that may impact state waters or sea country.	Relevant matter has merit: 1. Notification of accident, incident or hazard associated with the activity will give the Relevant Organisation the opportunity to confirm any impact to state waters or sea country.	Notification to NLC in the event of a spill occurring has been included in Table 10-3 and Section 8.6.
Western Australia								
Balanggarra Aboriginal Corporation	Traditional Owner group with potential sea country that may overlap the EMBA.	6/09/2024	Relevant Matter	Relevant Person requested notifications to Balanggarra Rangers in the event of an activity related incident.	Eni confirmed the inclusion of notifications to the Balanggarra Rangers in the event of an activity related incident.	Relevant person raised: 1. Notification requirements in the event of an activity related incident.	Relevant matter has merit: 1. Eni acknowledge that communication with relevant persons who have requested to be kept informed on the proposed activity should be continued.	Notification to BAC in the event of a spill has been included in Table 10-3 and Section 8.6.
Wunambal Gaambera Aboriginal Corporation	Traditional Owner group with potential sea country that may overlap the EMBA.	28/08/2024	Relevant Matter	Relevant person raised the potential for a peer review of the EP by an independent qualified environmental scientist funded by Eni.	Eni advised this would be difficult to implement for the EP under consultation given submission timing and the unlikely scenario of a vessel collision but noted this request for consideration under future development activities.	Relevant person raised: 1. Third party, independent review of the EP funded by Eni.	Relevant matter has merit: 1. For the ongoing relationship with the Relevant Organisation and future development activities outside of this EP development.	No change required to EP.
Business								
Northern Territory Businesses								
NT Port and Marine	Infrastructure used by contractors.	29/08/2024	Relevant matter	Relevant person requested continued updates in the event of changes to the scope of activity and that Eni consultation includes the Tiwi Land Council	Eni confirmed consultation with Tiwi Land Council had commenced and continued at the time of the receipt of this request. Eni confirmed updates would be provided in the event of changes to the scope of the activity.	Relevant Person raised: 1. Notification of updates to scope of activities. 2. Identified a relevant person for consultation.	Relevant matter has merit: 1. Eni acknowledge that communication with relevant persons who have requested to be kept informed on the proposed activity should be continued.	Tiwi Land Council was engaged as part of EP consultation as per Appendix C2 and C4a. No change required to EP.
Western Australian Businesses								
Marine Tourism WA	Tourism activities could be affected in the result of an hydrocarbon spill.	26/08/2024	Relevant matter	Relevant person queries if consultation had been initiated with RecFishWest and DPIRD. Relevant person requested removal from relevant person database going forward as they are a sector body of RecFishWest and DPIRD.	Eni confirmed that consultation had been initiated with RecFishWest (and mutually concluded at the time of receipt of this advice), and DPIRD, (which was ongoing at the time of receipt of this advice). Eni noted the request that Marine Tourism WA be removed as a Relevant Person going forward and consultation directed to RecFishWest and DPIRD.	Relevant Person raised: 1. Consultation with RecFishWest and DPIRD as relevant bodies. 2. Removal of Marine Tourism WA as a relevant person for future activities.	Relevant matter has merit: 1. Confirmation of Eni's identification of relevant persons. 2. Streamlining and reduction of unnecessary consultation by directing efforts to the Industry body.	RecFishWest and DPIRD were engaged as part of EP consultation as per Appendix C2 and C4a. No change required to EP.
RecfishWest	Represents recreational fishers who may operate in the EMBA	28/06/2024	Relevant matter	Relevant person confirmed activity is unlikely to impact WA recreational fishers over time. Relevant person requested continued updates on activity timing and changes to activity scope.	Eni acknowledged Relevant Person request and confirmed updates on activity timing and notifications regarding changes to activity scope.	Relevant Person raised: 1. Continued updates in the event of changes to the activity scope. 2. Provision of notifications to Relevant Person on activity timing when confirmed.	Relevant matter has merit: 1. Eni acknowledge that communication with relevant persons who have requested to be kept informed on the proposed activity should be continued. 2. Activity timing can be communicated to the Relevant Organisation's members.	1. Any change in the EP scope is evaluated by Eni's Management of Change (MOC) process, described in Section 10.12. This may trigger revision of the EP and may include re-consultation and re-submission of the EP to NOPSEMA as per requirements in the OPGGS(E) Regulations. 2. Notification to RecFishWest prior to activity occurring has been included in Table 10-3 and section 7.2.6
Wyndham Wildcatch	Potential activity within the EMBA.	14/08/2024	Relevant matter	Relevant person requested consideration be given to the continued use of advertising in industry newsletters for information distribution to commercial fishers as the most effective and timely form of consultation. Printed and posted copies of information may not be received on a timely basis due to extended fishing activities.	Eni responded to Relevant Person for the advice on effective consultation with commercial fishers for future consideration.	Relevant Person raised: 1. Consideration be given to the most effective consultation methodology for commercial fishers	Relevant matter has merit: 1. To improve the efficacy of the consultation process with a Relevant Group that can be absent at sea for extended periods of time.	No change required to EP.
Oil & Gas								
EOG Resources Australia	Neighbouring industry activity notification.	9/08/2024	Relevant Matter	Relevant person requested continued updates on activity timing given the proximity to WA-488-P and potential for simultaneous operations in the area (although considered unlikely).	Eni confirmed the request for updates on activity timing for the (unlikely) potential of simultaneous operations.	Relevant Person raised: 1. Potential for activity occurring simultaneously with Relevant Persons activities.	Relevant matter has merit: 1. To ensure Relevant Person can consider activity timing in the operational planning of their potentially simultaneous activities in the area.	Notification to EOG Resources prior to activity occurring has been included in Table 10-3. Potential impact to other industry is assessed in Section 7.2.
Inpex	Neighbouring industry activity notification.	31/08/2024	Relevant matter	Relevant Person requested: 1. Contact information for internal comms with Eni to establish a communication protocol for potentially concurrent activities in the area in October 2024.	Eni responded with the internal contact information of Eni personnel to establish a communications protocol for the notification of activity timing in the area to address any issues that may arise from concurrent activities.	Relevant Person raised: 1. Establishment of a communication protocol between Eni and the Relevant Person in the event of concurrent activities in the area.	Relevant matter has merit: 1. To ensure Relevant Person and Eni can consider activity timing in the operational planning of their potential concurrent activities in the area.	Notification to Inpex prior to activity occurring has been included in Table 10-3. Potential impact to other industry is assessed in Section 7.2.

Appendix C4a Petrel-3 Petrel-4 Monitoring and Decommissioning Environment Plan
 Consultation Efforts Log

Organisation	Relevance or reasoning for engagement	Date Raised	Type of Feedback	Consultation Summary	Summary of Titleholder Correspondence	Relevant matter, Objection or Claim	Assessment of Merits	Outcome of Assessment
NGO's								
Wilderness Society	Has an interest in protecting marine biodiversity and ecosystems.	4/09/2024	Objection	Relevant Person confirmed an industry wide objection to any option other than full removal of subsea infrastructure in the decommissioning of the subsea wells. Relevant person requested ongoing consultation during the activity to allow for assessment of the removal options following the surveys.	Eni responded that the final position on infrastructure removal in all forms could not be determined until the survey activities had been completed to assess the potential impact on the seabed environment. Eni confirmed recording of the Relevant Person objection in the consultation section of the EP.	Relevant Person raised: 1. An industry wide objection to all but complete removal of infrastructure in the decommissioning of subsea wells. 2. Opportunity to assess the confirmed removal options following the surveys.	Relevant objection has merit: 1. In the assessment of infrastructure removal options under consideration and the resulting environmental impact of the final determination. 2. Eni acknowledge that communication with relevant persons who have requested to be kept informed on the proposed activity should be continued.	1. The Wilderness Society's objection to anything other than complete removal of infrastructure has been included in the options assessment in Section 3.6, and the assessment against social acceptability criteria in Section 7.3 and 8.1. 2. An ongoing consultation program will consider statements and claims made by stakeholders when assessing impacts and risks.

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Appendix D: Petrel Oil Spill Modelling

XODUS NEPTUNE ENERGY PETREL OIL SPILL MODELLING

Report



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REPORT

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15 February 2024

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Prepared by:

RPS

Dr Sasha Zigic
General Manager

PO Box 1048,
Robina, QLD, 4230
Lakehouse Corporate Space, Suite 425
Level 2, 34-38 Glenferrie Drive
Robina, QLD, 4226

T +61 7 5553 6900
E sasha.zigic@rpsgroup.com

Prepared for:

Xodus

Elaíne Silveira Passos
Environmental Consultant

Level 1
1 William Street
Perth, WA, 6000

T +61 451 638 928
E Elaine.Passos@xodusgroup.com

Contents

Terms and Abbreviations	1
Executive Summary	3
Background	3
Methodology	3
Oil Characteristics	3
Summary of Modelling Results.....	3
1 INTRODUCTION	5
1.1 Background	5
What is Oil Spill Modelling?	7
1.1.1 Stochastic Modelling (Multiple Spill Simulations)	7
1.1.2 Deterministic Modelling (Single Spill Simulation)	8
2 SCOPE OF WORK	9
3 REGIONAL CURRENTS	10
3.1 Tidal Currents.....	11
3.1.1 Grid Setup.....	11
3.1.2 Tidal Conditions	12
3.2 Ocean Currents	13
3.3 Surface Currents	13
4 WIND DATA	16
5 WATER TEMPERATURE AND SALINITY	19
6 OIL SPILL MODEL SIMAP	21
7 THRESHOLDS	23
7.1 Floating Oil	23
7.2 Shoreline Oil Accumulation	24
7.3 In-water	25
7.3.1 Dissolved Hydrocarbons.....	26
7.3.2 Entrained Hydrocarbons	26
7.4 Dispersion Coefficients and Mixed Layer Depth	27
8 HYDROCARBON PROPERTIES	28
8.1 Marine Diesel Oil Weathering Characteristics	28
9 CALCULATION OF STOCHASTIC MODELLING EXPOSURE RISKS	31
10 RECEPTORS	33
11 MODEL SETTINGS	41
12 PRESENTATION AND INTERPRETATION OF MODEL RESULTS	42
12.1 Stochastic Modelling	42
13 MODELLING RESULTS: SURFACE SPILL FROM VESSEL INCIDENT	44
13.1 Stochastic Analysis	44
13.1.1 Areas of Exposure	44
13.1.2 Floating Oil Exposure	46
13.1.3 Shoreline accumulation	51
13.1.4 In-water exposure	52
14 REFERENCES	74

Tables

Table 1.1	Coordinates of the Petrel-4 oil spill modelling release location.	5
Table 5.1	Monthly average sea surface (0-5 m depth layer) temperature and salinity in the vicinity of the release location.	19
Table 7.1	Summary of the thresholds applied in this study.	23
Table 7.2	The Bonn Agreement Oil Appearance Code.	24
Table 7.3	Floating oil exposure thresholds used in the oil spill modelling study (in alignment with NOPSEMA, 2019).	24
Table 7.4	Shoreline accumulation thresholds used in oil spill modelling study (in alignment with NOPSEMA, 2019).	25
Table 7.5	Dissolved and entrained hydrocarbon exposure thresholds assessed over a 1-hour time step used in the oil spill modelling study (in alignment NOPSEMA, 2019).	27
Table 8.1	Physical properties for the MDO used as part of the modelling study.	28
Table 8.2	Boiling point ranges for the MDO used as part of the modelling study.	28
Table 11.1	Summary of the oil spill model settings used in this assessment.	41
Table 13.1	Maximum distances from the release location to floating oil exposure thresholds from a surface vessel spill for each season. Results were calculated from 100 spill simulations per season.	46
Table 13.3	Maximum distances from the release location to dissolved hydrocarbon exposure thresholds from a surface vessel spill during each season. Results were calculated from 100 spill simulations per season.	52
Table 13.4	Summary of the dissolved hydrocarbon exposure to receptors from a surface vessel spill during each season. Results were calculated from 100 spill simulations per season.	53
Table 13.5	Maximum distances from the release location to entrained hydrocarbon exposure thresholds from a surface vessel spill during each season. Results were calculated from 100 spill simulations per season.	63
Table 13.6	Summary of the entrained hydrocarbon exposure to receptors from a surface vessel spill during each season. Results were calculated from 100 spill simulations per season.	64

Figures

Figure 1.1	Petrel-4 oil spill modelling release location.	6
Figure 1.2	Examples of four individual spill trajectories (four replicate simulations) predicted by SIMAP for a spill scenario (left pane). The frequency of contact with given locations is used to calculate the probability of impacts during a spill. Essentially, all model runs are overlain (shown as the stacked runs on the right) and the number of times that trajectories contact a given location at a concentration is used to calculate the probability.	7
Figure 3.1	Schematic of ocean currents along the Northwest Australian continental shelf. Image adapted from DEWHA (2008).	10
Figure 3.2	Zoomed in view of the bathymetry defined for the tidal model domain.	12
Figure 3.3	Monthly surface current rose plots adjacent to the release location, derived from the 2010 to 2019 modelled dataset.	14
Figure 3.4	Seasonal surface current rose plots adjacent to the release location, derived from the 2010 to 2019 modelled dataset.	15
Figure 4.1	Spatial resolution of the CFSR modelled wind data used as input into the oil spill model. Note, for ease viewing only every second wind vector is displayed on the map.	16
Figure 4.2	Monthly wind rose plots adjacent to the release location, derived from the 2010 to 2019 modelled dataset.	17
Figure 4.3	Seasonal wind rose plots adjacent to the release location, derived from the 2010 to 2019 modelled dataset.	18
Figure 5.1	Monthly temperature and salinity profiles throughout the water column in the vicinity of the release location.	20
Figure 7.1	Photographs showing the difference between oil colour and thickness on the sea surface (source: adapted from Oil Spill Solutions, 2015).	24
Figure 8.1	Mass balance plot for an instantaneous 50 m ³ surface release of MDO subjected to a constant 5 knot (2.6 m/s) wind, currents and 27°C water temperature.	29
Figure 8.2	Mass balance plot for an instantaneous 50 m ³ surface release of MDO subjected to variable wind speeds (1 – 12 m/s or 2 to 24 knots), currents and 27°C water temperature.	30
Figure 10.1	Receptor map for Australian Marine Parks and Marine Parks.	34
Figure 10.2	Receptor map for Interim Biogeographic Regionalisation for Australia (IBRA).	35
Figure 10.3	Receptor map of Integrated Marine and Coastal Regionalisation of Australia (IMCRA).	36
Figure 10.4	Receptor map of Key Ecological Features (KEF).	37
Figure 10.5	Receptor map for RAMSAR wetlands and State waters.	38
Figure 10.6	Receptor map for Reefs, Shoals and Banks.	39
Figure 10.7	Receptor map for the shoreline sectors.	40
Figure 13.1	Predicted areas of exposure following a surface vessel spill. The results were calculated from all 300 spill simulations and presented as an annual assessment.	45
Figure 13.2	Zones of potential floating oil exposure from a surface vessel spill during summer conditions. The results were calculated from 100 spill simulations.	48
Figure 13.3	Zones of potential floating oil exposure from a surface vessel spill during transitional conditions. The results were calculated from 100 spill simulations.	49
Figure 13.4	Zones of potential floating oil exposure from a surface vessel spill during winter conditions. The results were calculated from 100 spill simulations.	50
Figure 13.5	Predicted zones of dissolved hydrocarbon exposure from a surface vessel spill during summer conditions. The results were calculated from 100 spill simulations.	54
Figure 13.6	Predicted zones of dissolved hydrocarbon exposure from a surface vessel spill during transitional conditions. The results were calculated from 100 spill simulations.	55
Figure 13.7	Predicted zones of dissolved hydrocarbon exposure from a surface vessel spill during winter conditions. The results were calculated from 100 spill simulations.	56
Figure 13.8	North-south cross-section transect of dissolved hydrocarbon concentrations from a surface vessel spill during summer conditions. The results were calculated from 100 spill simulations.	57

Figure 13.9 East-west cross-section transect of dissolved hydrocarbon concentrations from a surface vessel spill during summer conditions. The results were calculated from 100 spill simulations.58

Figure 13.10 North-south cross-section transect of dissolved hydrocarbon concentrations from a surface vessel spill during transitional conditions. The results were calculated from 100 spill simulations.59

Figure 13.11 East-west cross-section transect of dissolved hydrocarbon concentrations from a surface vessel spill during transitional conditions. The results were calculated from 100 spill simulations.60

Figure 13.12 North-south cross-section transect of dissolved hydrocarbon concentrations from a surface vessel spill during winter conditions. The results were calculated from 100 spill simulations.61

Figure 13.13 East-west cross-section transect of dissolved hydrocarbon concentrations from a surface vessel spill during winter conditions. The results were calculated from 100 spill simulations.62

Figure 13.14 Predicted zones of entrained hydrocarbon exposure from a surface vessel spill during summer conditions. The results were calculated from 100 spill simulations.65

Figure 13.15 Predicted zones of entrained hydrocarbon exposure from a surface vessel spill during transitional conditions. The results were calculated from 100 spill simulations.66

Figure 13.16 Predicted zones of entrained hydrocarbon exposure from a surface vessel spill during winter conditions. The results were calculated from 100 spill simulations.67

Figure 13.17 North-south cross-section transect of entrained hydrocarbon concentrations from a surface vessel spill during summer conditions. The results were calculated from 100 spill simulations.68

Figure 13.18 East-west cross-section transect of entrained hydrocarbon concentrations from a surface vessel spill during summer conditions. The results were calculated from 100 spill simulations.69

Figure 13.19 North-south cross-section transect of entrained hydrocarbon concentrations from a surface vessel spill during transitional conditions. The results were calculated from 100 spill simulations.70

Figure 13.20 East-west cross-section transect of entrained hydrocarbon concentrations from a surface vessel spill during transitional conditions. The results were calculated from 100 spill simulations.71

Figure 13.21 North-south cross-section transect of entrained hydrocarbon concentrations from a surface vessel spill during winter conditions. The results were calculated from 100 spill simulations.72

Figure 13.22 East-west cross-section transect of entrained hydrocarbon concentrations from a surface vessel spill during winter conditions. The results were calculated from 100 spill simulations.73

TERMS AND ABBREVIATIONS

Term	Meaning
Actionable oil	Oil which is thick enough for the effective use of mitigation strategies.
AMSA	Australian Maritime Safety Authority
API	American Petroleum Institute gravity. A measure of how heavy or light a petroleum liquid is compared to water.
Bonn Agreement	An agreement for cooperation in dealing with pollution of the North Sea by oil and other harmful substances, 1983, includes: Governments of the Kingdom of Belgium, the Kingdom of Denmark, the French Republic, the Federal Republic of Germany, the Republic of Ireland, the Kingdom of the Netherlands, the Kingdom of Norway, the Kingdom of Sweden, the United Kingdom of Great Britain and Northern Ireland and the European Union.
BP	Boiling point. The temperature at which the vapor pressure of the liquid is equal to the pressure exerted on it by the surrounding atmosphere
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
Decay	The process where oil components are changed either chemically or biologically (biodegradation) to another compound. It includes breakdown to simpler organic carbon compounds by bacteria and other organisms, photo-oxidation by solar energy, and other chemical reactions.
Deterministic (single) Oil spill modelling	Oil spill modelling involving a computer simulation of a single hypothetical oil spill event subject to a single sequence of wind, current and other sea conditions over time. Single oil spill modelling, also referred to as “deterministic modelling” provides a simulation of one possible outcome of a given spill scenario, subject to the metocean conditions that are imposed. Single oil spill modelling is commonly used to consider the fate and effects of ‘worst-case’ oil spill scenarios that are carefully selected in consideration of the nature and scale of the offshore petroleum activity and the local environment (NOPSEMA, 2017). Because the outcomes of a single oil spill simulation can only represent the outcome of that scenario under one sequence of metocean conditions, worst-case conditions are often identified from stochastic modelling. It is impossible to calculate the likelihood of any outcome from a single oil spill simulation. Single oil spill modelling is generally used for response planning, preparedness planning and for supporting oil spill response operations in the event of an actual spill
Dynamic viscosity	The dynamic viscosity of a fluid expresses its resistance to shearing flows, where adjacent layers move parallel to each other with different speeds.
Floating oil exposure	Contact by floating oil on the sea surface at concentrations equal to or exceeding defined threshold concentrations. The consequence will vary depending on the threshold and the receptors
HYCOM	Hybrid Coordinate Ocean Model. A data-assimilative, three-dimensional ocean model
HYDROMAP	Advanced ocean/coastal tidal model used to predict tidal water levels, current speed and current direction.
MAHs	Monoaromatic Hydrocarbons
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
PAH	Polynuclear Aromatic Hydrocarbons
Pour Point	The pour point of a liquid is the temperature below which the liquid loses its flow characteristics
Shoreline accumulation	Arrival of oil at or near shorelines at on-water concentrations equal to or exceeding defined threshold concentrations. Shoreline accumulation is judged for floating oil arriving within a 2 km buffer zone from any shoreline as a conservative measure.
SIMAP	Spill Impact Model Application Package. SIMAP is designed to simulate the fate and effects of spilled hydrocarbons for surface or subsea releases.
Stochastic (multiple) oil spill modelling	Stochastic oil spill modelling is created by overlaying and statistically analysing the outcomes of many single oil-spill simulations of a defined spill scenario, where each simulation was subject to a different sequence of metocean conditions, selected objectively (typically by random selection) from a long sequence of historic conditions for the study area. Analysis of this larger set of simulations provides a more accurate indication of the areas of potential exposure and indicates which locations are more likely to be exposed (as well as other statistics). Stochastic oil spill

REPORT

	<p>modelling avoids biases that affect single oil spill modelling (due to the reliance on only one possible sequence of conditions). However, when interpreting stochastic modelling, which is based on a wide range of potential conditions that might happen to occur, it is essential to understand that calculations will encompass a much larger area than could be affected in any single spill event, where a more limited set of conditions will occur. Consequently, it is misleading to imply that the region derived from stochastic modelling indicate the outcomes expected from a single spill event (NOPSEMA, 2017) Stochastic modelling is generally used for risk assessment and preparedness planning by indicating locations that could be exposed and may require response or subsequent impact assessment.</p>
Shoreline accumulation	<p>Arrival of oil at or near shorelines at on-water concentrations equal to or exceeding defined threshold concentrations. Shoreline accumulation is judged for floating oil arriving within a 2 km buffer zone from any shoreline as a conservative measure.</p>

EXECUTIVE SUMMARY

Background

Neptune Energy Bonaparte Pty Limited (Neptune Energy) is the operator of the Petrel gas field, located approximately 260 km west of Darwin, within titles NT/RL1 and WA-6-R, in the Bonaparte Basin in the Timor Sea.

To support the preparation of Environment Plan (EP), a detailed oil spill modelling study was commissioned to assess the seasonal risk and potential exposure to the surrounding waters and shorelines from the following hypothetical scenario:

- **Scenario:** An instantaneous surface spill of marine diesel oil (MDO) of 300 m³ from a vessel incident at Petrel-4 (NT/RL1).

The potential exposure to the surrounding waters and shorelines were assessed for summer (December to February); transitional periods (March and September to November) and winter (April to August) conditions.

The modelling does not take into consideration any of the spill prevention, mitigation and response capabilities that would be implemented in response to the spill.

Methodology

The modelling study was carried out in stages. Firstly, a 10-year wind and current dataset (2010–2019) that includes the combined influence of large-scale ocean and tidal currents was prepared. Secondly, the currents, local winds and detailed hydrocarbon characteristics were used as inputs in the three-dimensional oil spill model (SIMAP) to simulate the drift, spread, weathering and fate of the spilled oil.

Modelling was conducted using a stochastic (or probabilistic) approach, which involved running 100 spill simulations per season and each simulation had the same spill information (spill volume, duration and composition of hydrocarbons) but randomly selected start times to ensure a range of wind and current conditions were assessed. Once all 100 simulations were run, the results were combined to determine the potential exposure to the surrounding waters, shorelines and sensitive receptors based on the thresholds outlined in the NOPSEMA Oil Spill Modelling Bulletin (NOPSEMA, 2019).

Oil Characteristics

The MDO has a density of 890.0 kg/m³ at 25°C (API of 27.0) and a low pour point of -9°C. The low viscosity (14 cP) indicates that this oil will spread quickly when released and will form a thin to low thickness film on the sea surface, increasing the rate of evaporation. The oil is categorised as a group II oil (light-persistent) according to the International Tankers Owners Pollution Federation (ITOPF, 2020) and US EPA/USCG classifications. The classification is based on the specific gravity of hydrocarbons in combination with relevant boiling point ranges.

It is important to note that some of the heavier components contained in the MDO (i.e. low volatile and persistent portions) will have a strong tendency to physically entrain into the upper water column in the presence of moderate winds (i.e. >12 knots) and breaking waves but can re-float to the surface if these energies abate.

Summary of Modelling Results

- Floating oil concentrations exceeding 1 g/m² could extend up to 99 km from the release location. The distances reduced to 43 km and 17 km as the thresholds increase to 10 g/m² and 50 g/m², respectively.

- Excluding Bonaparte Gulf IMCRA that the release location resides within, during summer conditions the Oceanic Shoals IMCRA was the only receptor predicted to experience floating oil exposure (1% probability) for concentrations at, or above, 1 g/m², and the initial time before exposure was 68 hours. During transitional conditions the Carbonate bank and terrace system of the Sahul Shelf KEF (2%) and Pinnacles of the Bonaparte Basin KEF (1%) were predicted to experience exposure at, or above, 1 g/m² and the minimum times before exposure to each receptor were 126 hours and 101 hours, respectively. No exposure to any receptor was predicted during winter conditions.
- No oil accumulation on any shorelines was predicted to occur at, or above, the low threshold of 10 g/m² from the 300 spill simulations.
- No exposure was predicted to any receptor during transitional or winter conditions. During summer conditions the Oceanic Shoals IMCRA was the only receptor to experience exposure for concentrations exceeding 10 ppb (1%), 120 hours after the initial release. The highest concentration of dissolved hydrocarbons was predicted for the Oceanic Shoals IMCRA during summer was 14 ppb.
- Entrained hydrocarbon concentrations exceeding 10 ppb may potentially occur up to 248 km from the release location, with the distance reducing to 87 km as the threshold increases to 100 ppb. During summer and transitional conditions, Oceanic Shoals IMCRA and Carbonate bank and terrace system of the Sahul Shelf KEF recorded the highest probabilities of exposure for concentrations exceeding 10 ppb 9% and 20%, respectively. Under winter conditions, the Pinnacles of the Bonaparte Basin KEF recorded the highest probability of exposure for concentrations exceeding 10 ppb at 24%.

1 INTRODUCTION

1.1 Background

Neptune Energy Bonaparte Pty Limited (Neptune Energy) is the operator of the Petrel gas field, located approximately 260 km west of Darwin, within titles NT/RL1 and WA-6-R, in the Bonaparte Basin in the Timor Sea.

To support the preparation of Environment Plan (EP), a detailed oil spill modelling study was commissioned by Xodus on behalf of Neptune Energy to assess the seasonal risk and potential exposure to the surrounding waters and shorelines from the following hypothetical scenario:

- **Scenario:** An instantaneous surface spill of marine diesel oil (MDO) of 300 m³ from a vessel incident at Petrel-4 (NT/RL1).

The coordinates for the release location used for the above mentioned scenario are presented in Table 1.1 and is illustrated in Figure 1.1.

The potential exposure to the surrounding waters and shorelines were assessed for summer (December to February); transitional periods (March and September to November) and winter (April to August) conditions.

The spill modelling was performed using an advanced three-dimensional trajectory and fates model; Spill Impact Model Application Package (SIMAP). The SIMAP model calculates the transport, spreading, entrainment and evaporation of spilled hydrocarbons over time, based on the prevailing wind and current conditions and the physical and chemical properties. The modelling does not take into consideration any of the spill prevention, mitigation and response capabilities that would be implemented in response to the spill.

The hydrocarbon spill model, the method and analysis applied herein use modelling algorithms which have been peer reviewed and published in international journals. Further, RPS warrants that this work meets and exceeds the American Society for Testing and Materials (ASTM) Standard F2067-22 “*Standard Practice for Development and Use of Oil Spill Models*”.

Table 1.1 Coordinates of the Petrel-4 oil spill modelling release location.

Scenario	Latitude*	Longitude*
Vessel surface spill at Petrel-4	12° 53' 13.194" S	128° 29' 45.557" E

*Datum: WGS 1984

REPORT

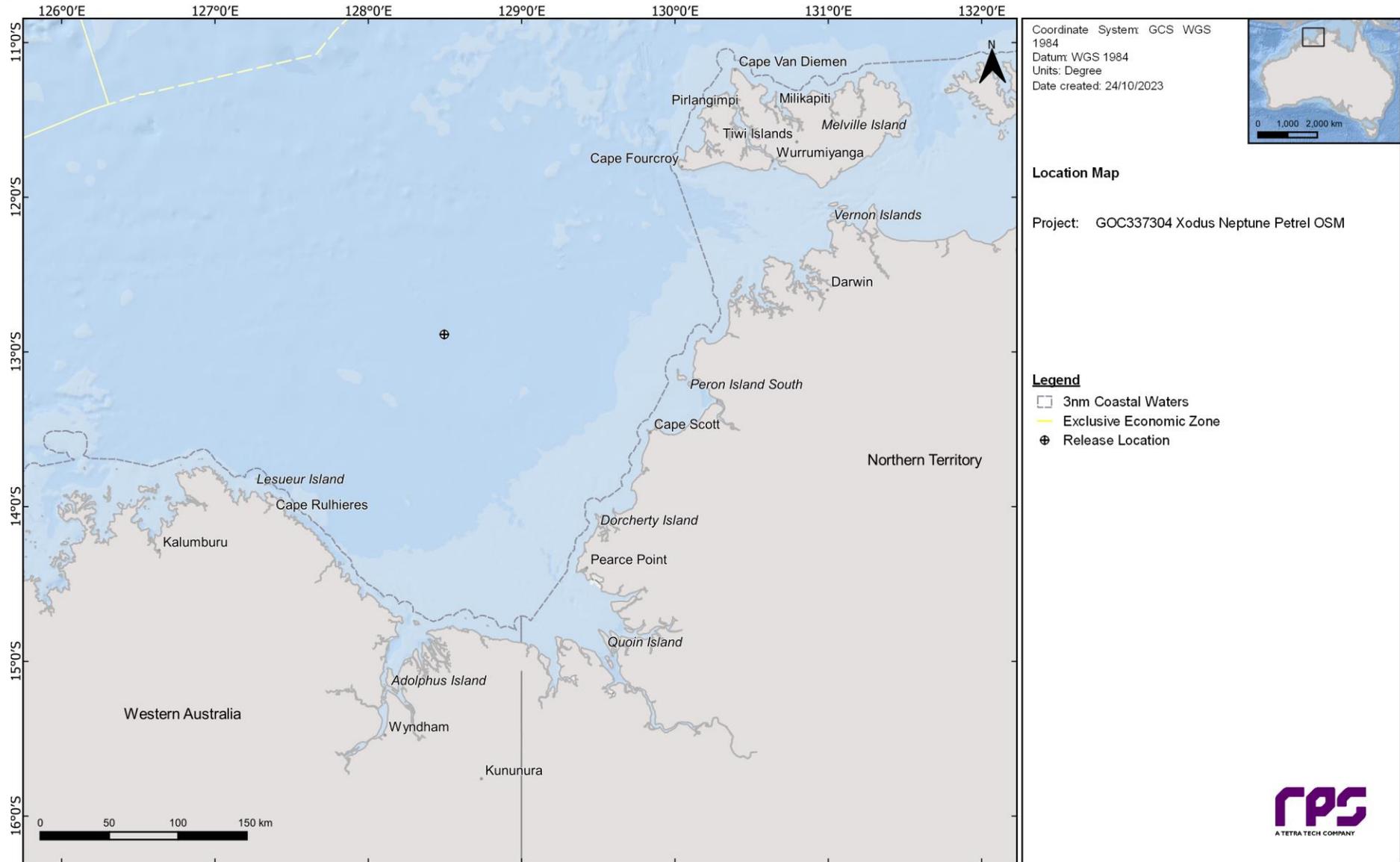


Figure 1.1 Petrel-4 oil spill modelling release location.

What is Oil Spill Modelling?

Oil spill modelling is a valuable tool widely used for risk assessment, emergency response and contingency planning where it can be particularly helpful to proponents and decision makers. By modelling a series of the most likely oil spill scenarios, decisions concerning suitable response measures and strategic locations for deploying equipment and materials can be made, and the locations at most risk can be identified. The two types of oil spill modelling often used are stochastic and deterministic modelling.

1.1.1 Stochastic Modelling (Multiple Spill Simulations)

Stochastic oil spill modelling is created by overlaying a great number (often hundreds) of individual, computer-simulated hypothetical spills (NOPSEMA, 2018; Figure 1.2).

Stochastic modelling is a common means of assessing the potential risks from oil spills related to new projects and facilities. Stochastic modelling typically utilises hydrodynamic data for the location in combination with historic wind data. Typically, 100 simulations are run, which sufficiently samples the historic dataset that is most relevant to the season or timing of the project.

The outcomes are often presented as a probability of exposure and are primarily used for risk assessment purposes in view to understand the range of environments that may be affected or impacted by a spill. Elements of the stochastic modelling can also be used in oil spill preparedness and planning.

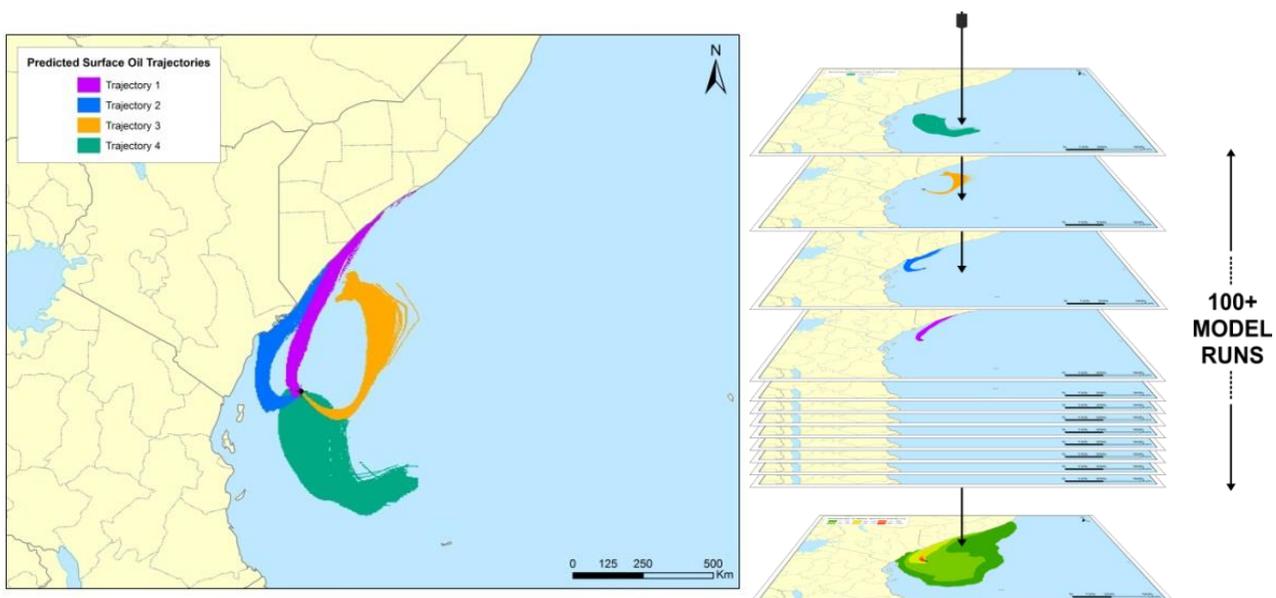


Figure 1.2 Examples of four individual spill trajectories (four replicate simulations) predicted by SIMAP for a spill scenario (left pane). The frequency of contact with given locations is used to calculate the probability of impacts during a spill. Essentially, all model runs are overlain (shown as the stacked runs on the right) and the number of times that trajectories contact a given location at a concentration is used to calculate the probability.

1.1.2 Deterministic Modelling (Single Spill Simulation)

Deterministic modelling is the predictive modelling of a single incident subject to a single sample of wind and weather conditions over time (NOPSEMA, 2018).

Deterministic modelling is often paired with stochastic modelling to place the large stochastic footprint into perspective. This deterministic analysis is generally a single run selected from the stochastic analysis and serves as the basis for developing the spill response or scientific monitoring plans.

2 SCOPE OF WORK

The scope of work included the following components:

1. Generate 10 years (2010 to 2019 (inclusive)) of wind and current data. The three-dimensional current data includes the combined influence of ocean and tidal currents;
2. Include the wind data, current data and oil properties into the three-dimensional oil spill model; SIMAP, to model the movement, spreading, entrainment, weathering and potential shoreline accumulation over time;
3. Run 100 simulations for each season (a total of 300 simulations), with each simulation having the same spill information (location, volume, duration and oil properties) but randomly varying start times. This ensured that each spill simulation was exposed to unique wind and current conditions;
4. Combine the results from the 100 spill simulations (per season) to determine the potential seasonal exposure to the surrounding waters, shorelines and sensitive receptors based on the thresholds outlined in the NOPSEMA Oil Spill Modelling Bulletin (NOPSEMA, 2019); and
5. Present the combined results from all 300 spill simulations, to assess the low, moderate and high areas of exposure.

3 REGIONAL CURRENTS

The release location is located within the Joseph Bonaparte Gulf, a shallow (generally <100 m) waterbody bordered by the Indian Ocean and Timor Sea. The gulf is characterised by complex geomorphology (i.e. shoals, valleys and terraces) and is dominated by tidal (ranges > 4 m) and wind driven currents which are dependent on season (DEWHA, 2008).

The Indonesian Throughflow brings southwest flowing, less saline, warm waters from the tropics, however the internal gyres generate local currents in any direction. As these gyres migrate through the area, large spatial variations in the speed and direction of currents will occur at a given location over time. The Holloway current, which flows southwest and close to the coastline, intensifies during April to July due to increased wind forcing.

A comprehensive description of the circulation patterns of the Northwest Shelf and Timor Sea is provided in a review by Condie and Andrewartha (2008). A schematic of the ocean currents along the Northwest Australian continental shelf is shown in Figure 3.1.

While, the tidal currents are generally weaker in the deeper waters (beyond the Joseph Bonaparte Gulf), its influence is greatest along the near shore, within the Gulf, coastal passage regions and, in and around the islands. Therefore, to accurately account for the movement of an oil spill, which can move between the offshore and near shore region, ocean and tidal currents were combined as part of the study.

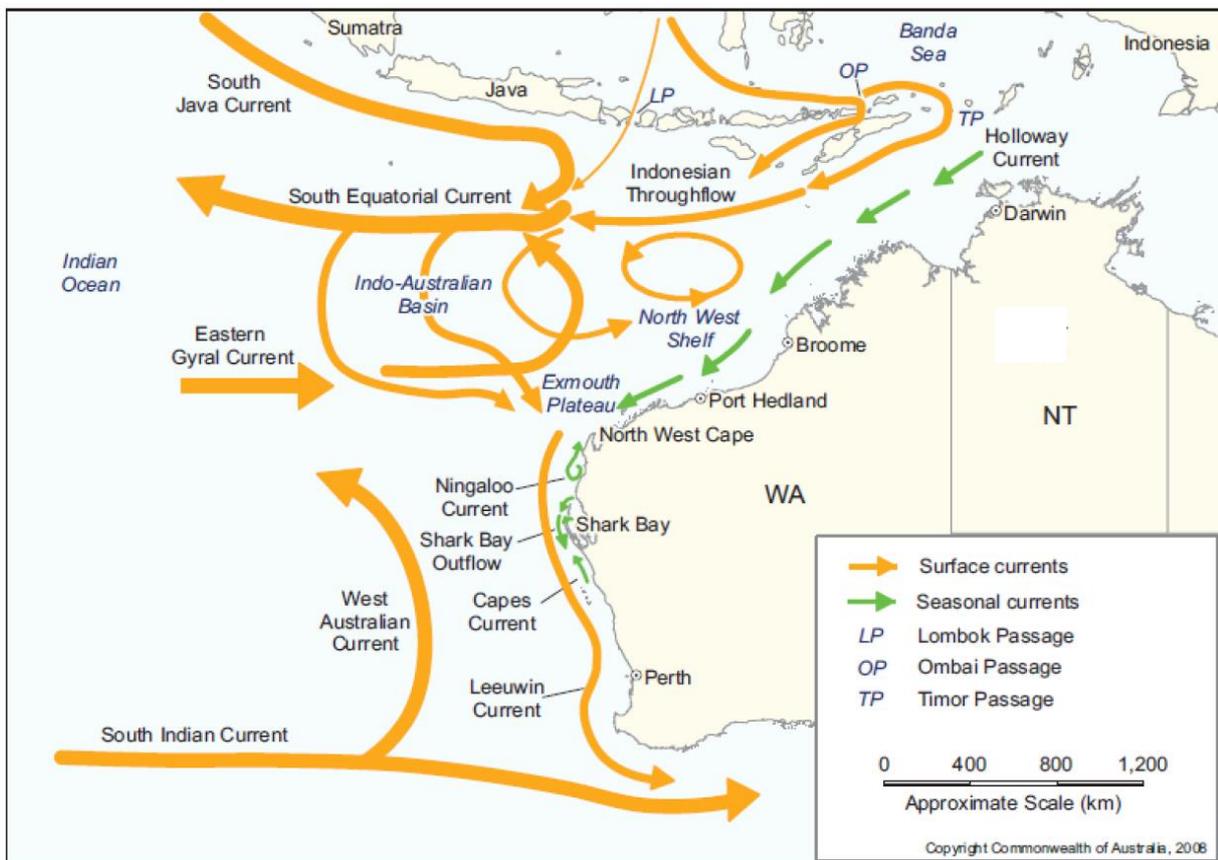


Figure 3.1 Schematic of ocean currents along the Northwest Australian continental shelf. Image adapted from DEWHA (2008).

3.1 Tidal Currents

The effects of tides were generated using RPS's advanced ocean/coastal model, HYDROMAP. The HYDROMAP model has been thoroughly tested and verified through field measurements throughout the world for over 35 years (Isaji and Spaulding, 1984; Isaji et al., 2001; Zigic et al., 2003; Makarynskyy et al., 2010), whilst being used for a wide variety of disciplines within marine environments (e.g. Zigic et al., 2003; Talouli et al., 2009; Zigic et al., 2009; King et al., 2010; Makarynskyy et al., 2010; 2015). In fact, HYDROMAP tidal current data has been used as input for the OILMAP hydrocarbon spill modelling system, which forms part of the Incident Management System (IMS) operated by Maritime New Zealand (MNZ), Australian Maritime Safety Authority (AMSA) and the United Kingdom Maritime and Coastguard Agency, as well as several major oil and gas companies.

HYDROMAP employs a sophisticated sub-gridding strategy, which supports up to six levels of spatial resolution, halving the grid cell size as each level of resolution is employed. The sub-gridding allows for higher resolution of currents within areas of greater bathymetric and coastline complexity, and/or of particular interest to a study.

The numerical solution methodology follows that of Davies (1977a and 1977b) with further developments for model efficiency by Owen (1980) and Gordon (1982). A more detailed presentation of the model can be found in Isaji and Spaulding (1984) and Isaji et al. (2001).

3.1.1 Grid Setup

The tidal model domain has been sub-gridded to a resolution of 500 m for shallow and coastal regions, starting from an offshore (or deep water) resolution of 8 km. The finer grids were allocated in a step-wise fashion to resolve flows more accurately along the coastline, around islands and over regions with more complex bathymetry.

A combination of datasets was used and merged to describe the shape of the seabed within the grid domain (Figure 3.2). These included spot depths and contours which were digitised from nautical charts released by the hydrographic offices as well as Geoscience Australia database and depths extracted from the Shuttle Radar Topography Mission (SRTM30_PLUS) Plus dataset (see Becker et al., 2009).

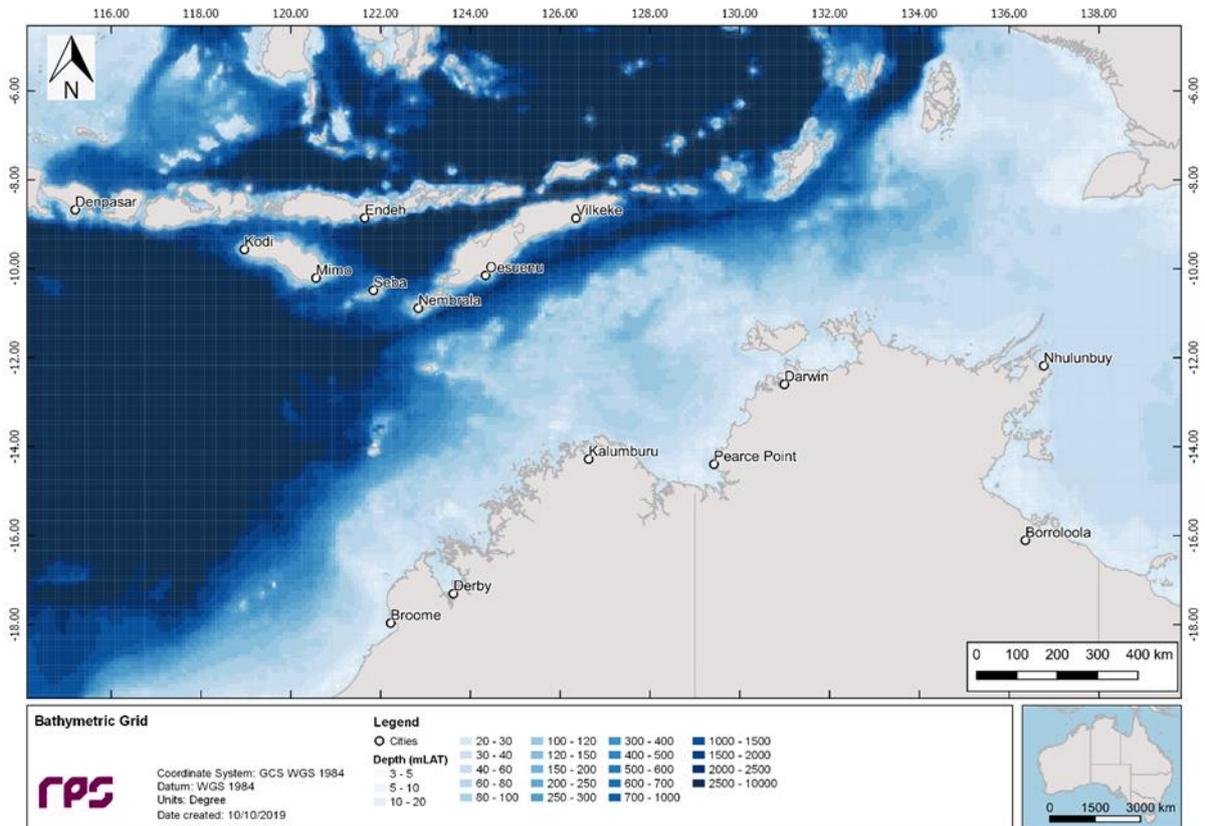


Figure 3.2 Zoomed in view of the bathymetry defined for the tidal model domain.

3.1.2 Tidal Conditions

The ocean boundary data for the regional model was obtained from satellite measured altimetry data (TOPEX/Poseidon 7.2) which provided estimates of the eight dominant tidal constituents at a horizontal scale of approximately 0.25 degrees. The eight major tidal constituents used were K_2 , S_2 , M_2 , N_2 , K_1 , P_1 , O_1 and Q_1 . Using the tidal data, surface heights were firstly calculated along the open boundaries, at each time step in the model.

The TOPEX/Poseidon satellite data has a global resolution of 0.25 degrees and is produced and quality controlled by NASA (National Aeronautics and Space Administration). The satellites equipped with two highly accurate altimeters and capable of taking sea level measurements with an accuracy of ± 5 cm measured oceanic surface elevations (and the resultant tides) for over 13 years (1992–2005). In total, these satellites carried out 62,000 orbits of the planet.

The Topex-Poseidon tidal data has been extensively reported and utilised within the oceanographic community (e.g. Andersen, 1995; Ludicone et al., 1998; Matsumoto et al., 2000; Kostianoy et al., 2003; Yaremchuk and Tangdong, 2004; Qiu and Chen 2010; Amores et al., 2019; Sagnieres et al., 2020; Veng et al., 2021; Zeithöfler et al., 2023). As such the Topex/Poseidon tidal data is considered suitably accurate for this study.

3.2 Ocean Currents

Data describing the flow of ocean currents was obtained from HYCOM (Hybrid Coordinate Ocean Model, (Chassignet et al., 2007), which is operated by the HYCOM Consortium, sponsored by the National Ocean Partnership Program (NOPP), as part of the U.S. Global Ocean Data Assimilation Experiment (GODAE). HYCOM is a data-assimilative, three-dimensional ocean model that is run as a hindcast (for a past period), assimilating time-varying observations of sea surface height, sea surface temperature and in-situ temperature and salinity measurements (Chassignet et al., 2009). The HYCOM predictions for drift currents are produced at a horizontal spatial resolution of approximately 8.25 km (1/12th of a degree) over the region, at a frequency of every 3 hours. HYCOM uses isopycnal layers in the open, stratified ocean, but uses the layered continuity equation to make a dynamically smooth transition to a terrain following coordinate in shallow coastal regions, and to z-level coordinates in the mixed layer and/or unstratified seas.

For this study, the HYCOM hindcast currents were obtained for the years 2010 to 2019 (inclusive).

3.3 Surface Currents

Figure 3.3 and Figure 3.4 present the monthly and seasonal current rose plots, respectively, in the vicinity of the release location.

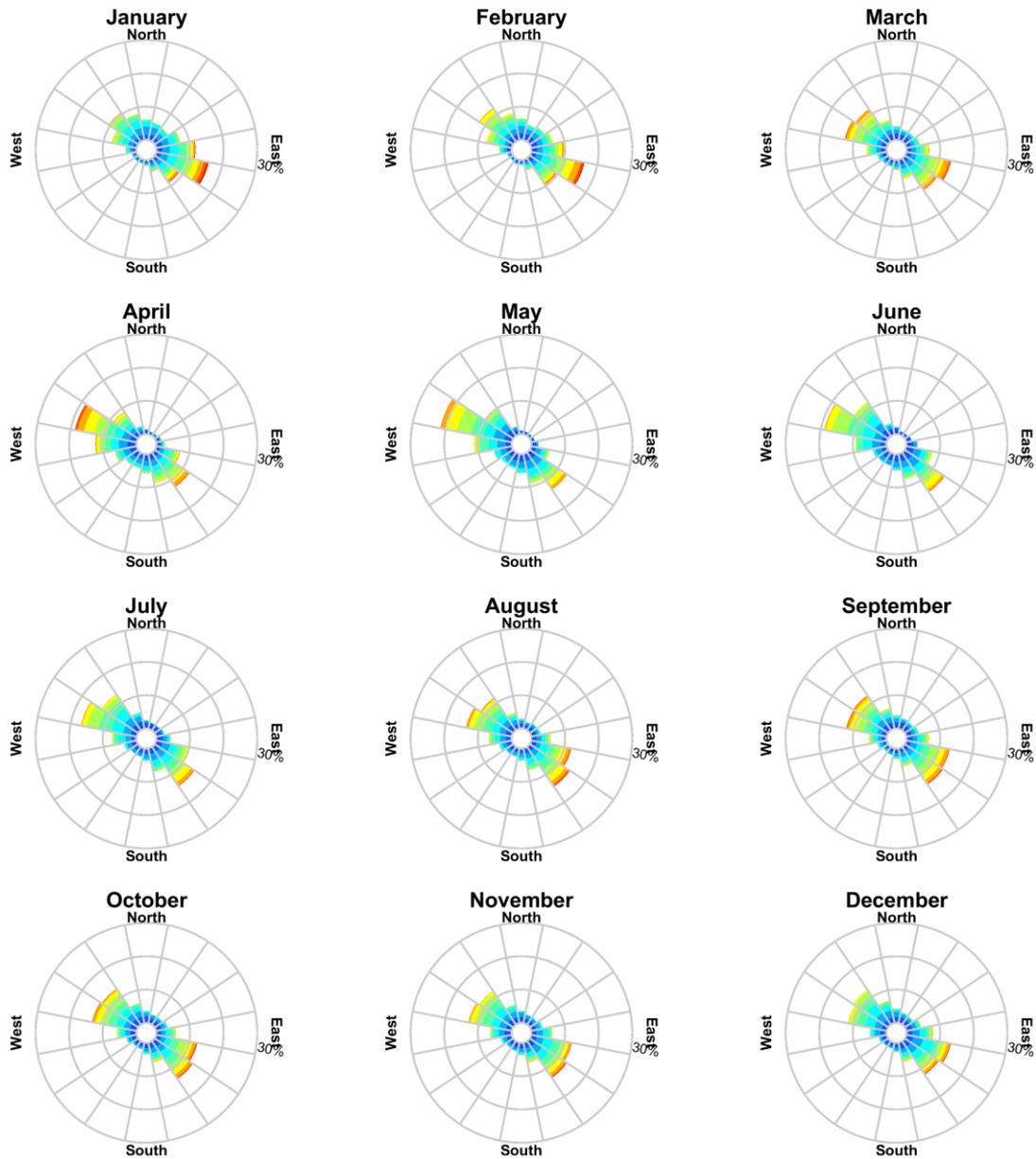
Note the convention for defining current direction throughout this report is the direction the current flows towards. Each branch of the current rose distribution represents the currents flowing to that direction, with north to the top of the diagram. The branches are divided into segments of different colour, which represent the current speed ranges for each direction. Speed intervals of 0.1 m/s are typically used in these current roses. The length of each coloured segment within a branch is proportional to the frequency of currents flowing within the corresponding speed and direction.

The average and maximum current speeds were 0.34 m/s and 1.26 m/s, respectively. During all seasons the dominant current directions were along the northwest-southeast axis as a result of the influence of the ebb and flood tide dynamics in the region of the spill location.

RPS Data Set Analysis

Current Speed (m/s) and Direction Rose (All Records)

Longitude = 128.50°E, Latitude = 12.89°S
 Analysis Period: 01-Jan-2010 to 31-Dec-2019



Color Key [Current Speed(m/s)] :



Figure 3.3 Monthly surface current rose plots adjacent to the release location, derived from the 2010 to 2019 modelled dataset.

RPS Data Set Analysis Current Speed (m/s) and Direction Rose (All Records)

Longitude = 128.50°E, Latitude = 12.89°S
Analysis Period: 01-Jan-2010 to 31-Dec-2019

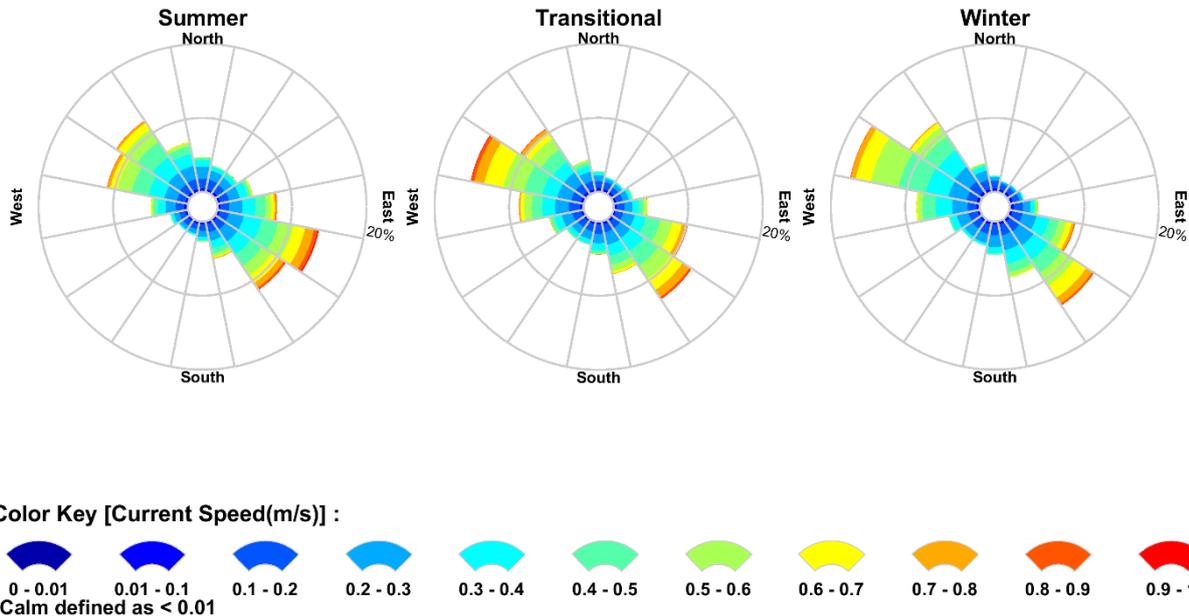


Figure 3.4 Seasonal surface current rose plots adjacent to the release location, derived from the 2010 to 2019 modelled dataset.

4 WIND DATA

To account for the influence of the wind on the floating oil, wind data from 2010 to 2019 (inclusive) was sourced from the National Centre for Environmental Prediction (NCEP) Climate Forecast System Reanalysis (CFSR; see Saha et al., 2010). The CFSR wind model includes observations from many data sources; surface observations, upper-atmosphere air balloon observations, aircraft observations and satellite observations. The model is capable of accurately representing the interaction between the earth's oceans, land and atmosphere. The gridded wind data output is available at $\frac{1}{4}$ of a degree resolution (~ 33 km) and 1-hourly time intervals. Figure 4.1 shows the spatial resolution of the wind field used as input into the oil spill model.

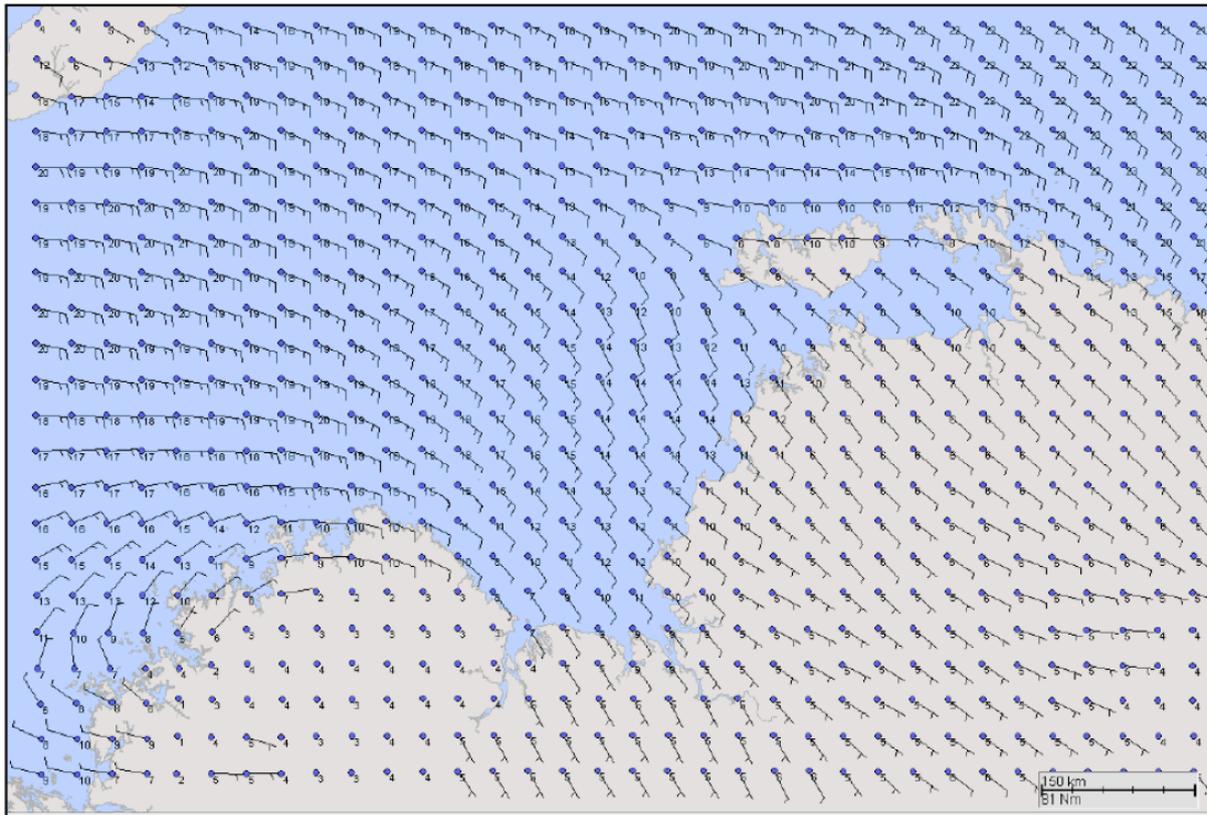


Figure 4.1 Spatial resolution of the CFSR modelled wind data used as input into the oil spill model. Note, for ease viewing only every second wind vector is displayed on the map.

Figure 4.2 and Figure 4.3 illustrates the monthly and seasonal wind rose plots, respectively, in the vicinity of the release location.

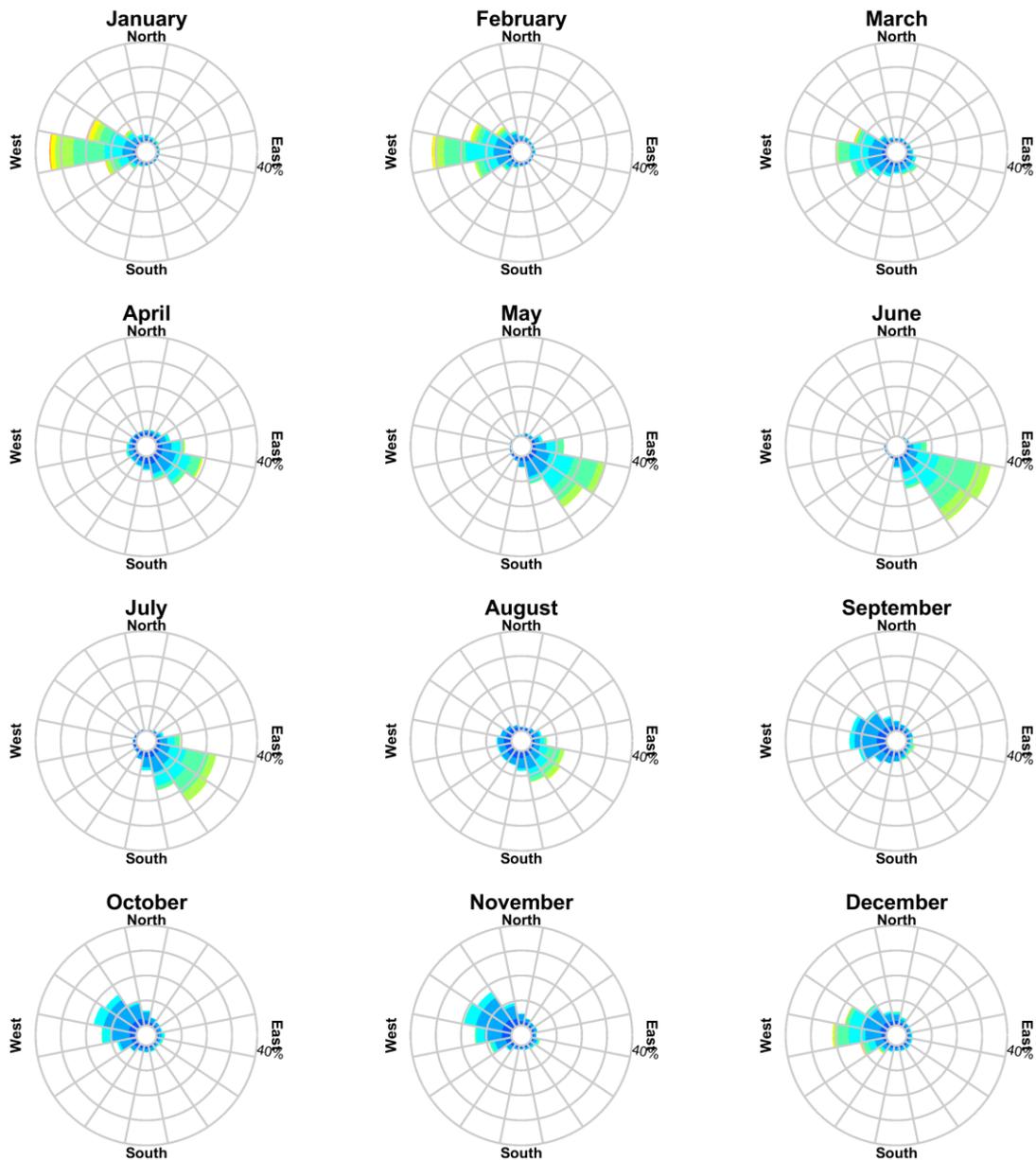
Note that the atmospheric convention for defining wind direction, that is, the direction the wind blows from, is used to reference wind direction throughout this report. Each branch of the rose represents wind coming from that direction, with north to the top of the diagram. Sixteen directions are used. The branches are divided into segments of different colour, which represent wind speed ranges from that direction. Speed ranges of 5 knot intervals are typically used in these wind roses. The length of each segment within a branch is proportional to the frequency of winds blowing within the corresponding range of speeds from that direction.

The average and maximum wind speeds were 9.7 knots and 45.6 knots, respectively. During the summer season (December to February) winds were predominantly from the west-northwest with an average speed of 10.7 knots. During the winter season (April to August) winds were predominantly from the southeast with an average speed of 9.6 knots. Additionally, during the transitional period (March and September to November) winds were predominantly from the west-northwest and east-southeast with an average wind speed of 7.6 knots.

RPS Data Set Analysis

Wind Speed (knots) and Direction Rose (All Records)

Longitude = 128.50°E, Latitude = 12.89°S
 Analysis Period: 01-Jan-2010 to 31-Dec-2019



Color Key [Wind Speed (knots)] :



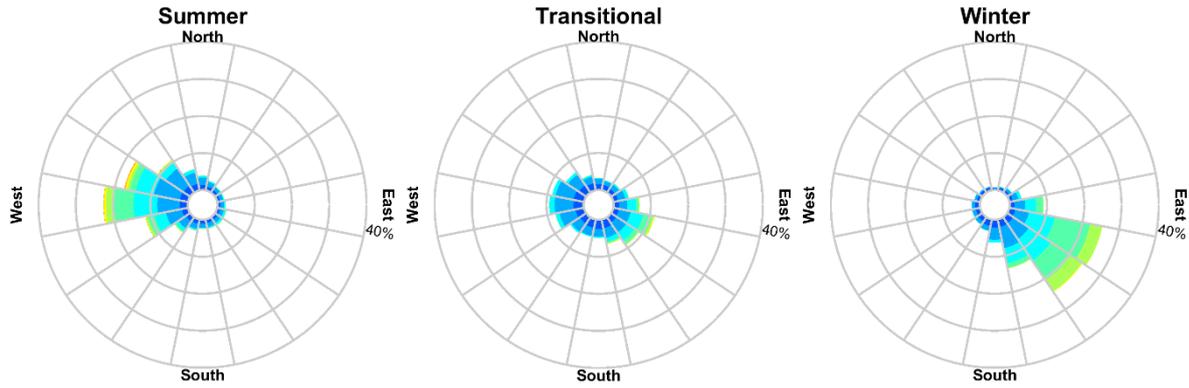
*Calm defined as < 0.01

Figure 4.2 Monthly wind rose plots adjacent to the release location, derived from the 2010 to 2019 modelled dataset.

RPS Data Set Analysis

Wind Speed (knots) and Direction Rose (All Records)

Longitude = 128.50°E, Latitude = 12.89°S
Analysis Period: 01-Jan-2010 to 31-Dec-2019



Color Key [Wind Speed (knots)] :



*Calm defined as < 0.01

Figure 4.3 Seasonal wind rose plots adjacent to the release location, derived from the 2010 to 2019 modelled dataset.

5 WATER TEMPERATURE AND SALINITY

The monthly depth-varying water temperature and salinity profiles for the closest point to the release location was obtained from the World Ocean Atlas 2018 database produced by the National Oceanographic Data Centre (National Oceanic and Atmospheric Administration) and its co-located World Data Center for Oceanography (Levitus et al., 2013). The data is used to inform the weathering, movement and evaporative loss of hydrocarbon spills in the surface and subsurface layers.

Table 5.1 shows that the monthly average sea surface temperatures ranged from 26.3 C (July and August) to 30.1°C (December). Salinity remained consistent throughout the year ranging between 33.7 ppt (August) and 35.4 ppt (March).

Figure 5.1 shows the vertical profile of water temperature and salinity for each month in the vicinity of the release location.

Table 5.1 Monthly average sea surface (0-5 m depth layer) temperature and salinity in the vicinity of the release location.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Temperature (°C)	29.4	30.0	29.5	29.7	27.9	28.0	26.3	26.3	27.6	28.7	29.6	30.1
Salinity (psu)	34.8	34.6	35.4	35.1	34.6	34.6	34.7	33.7	35.3	34.9	34.9	34.8

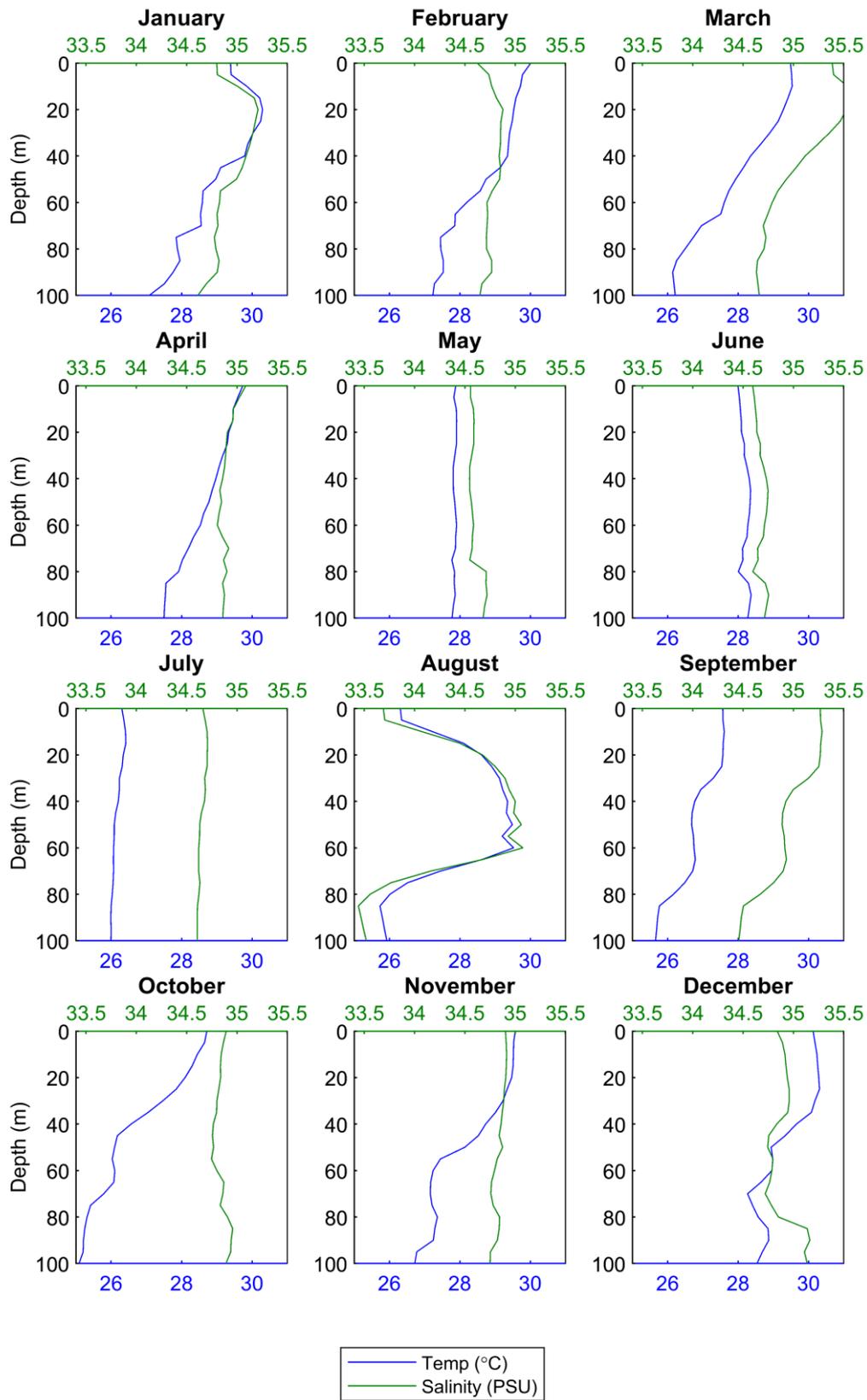


Figure 5.1 Monthly temperature and salinity profiles throughout the water column in the vicinity of the release location.

6 OIL SPILL MODEL SIMAP

The spill modelling was carried out using a purpose-developed oil spill trajectory and fates model, SIMAP. This model is designed to simulate the transport and weathering processes that affect the outcomes of hydrocarbon spills to the sea, accounting for the specific oil type, spill scenario, and prevailing wind and current circulation patterns (French et al., 1999; French-McCay, 2003; 2004; French-McCay et al., 2004; 2021; 2022a; 2022b).

SIMAP is the evolution of the United States Environmental Protection Agency (US EPA) Natural Resource Damage Assessment model (French et al., 1999) and is designed to simulate the fate and effects of spilled oils and fuels for both the surface slick and the three-dimensional plume that is generated in the water column. SIMAP includes algorithms to account for both physical transport and weathering processes. The latter are important for accounting for the partitioning of the spilled mass over time between the water surface (surface slick), water column (entrained oil and dissolved compounds), atmosphere (evaporated compounds) and land (stranded oil). The model also accounts for the interaction between weathering and transport processes.

The physical algorithms calculate transport and spreading by physical forces, including surface tension, gravity as well as wind and current forces for both surface slicks and oil within the water column. The fates algorithms calculate all the weathering processes known to be important for oil spilled to marine waters. These include droplet and slick formation, entrainment by wave action, emulsification, dissolution of soluble components, sedimentation, evaporation, bacterial and photo-chemical decay and shoreline interactions. These algorithms account for the specific oil type being considered.

Entrainment is the physical process where globules of oil are transported from the sea surface into the water column by wind and wave-induced turbulence or be generated subsea by a pressurised discharge at depth. It has been observed that entrained oil is broken into droplets of varying sizes. Small droplets spread and diffuse into the water column, while larger ones rise rapidly back to the surface (Delvigne & Sweeney, 1988; Delvigne, 1991).

Dissolution is the process by which soluble hydrocarbons enter the water from a surface slick or from entrained droplets. The lower molecular weight hydrocarbons tend to be both more volatile and more soluble than those of higher molecular weight.

The formation of water-in-oil emulsions, or mousse, which is termed 'emulsification', depends on oil composition and sea state. Emulsified oil can contain as much as 80% water in the form of micrometre-sized droplets dispersed within a continuous phase of oil (Daling & Brandvik, 1991; Bobra, 1991; Daling et al., 1997; Fingas, 1995, Fingas & Fieldhouse, 2004).

Entrainment, dissolution and emulsification rates are correlated to wave energy, which is accounted for by estimating wave heights from the sustained wind speed, direction and fetch (i.e. distance downwind from land barriers) at different locations in the domain. Dissolution rates are dependent upon the proportion of soluble, short-chained hydrocarbon compounds, and the surface area at the oil/water interface of slicks. Dissolution rates are also strongly affected by the level of turbulence. For example, dissolution rates will be relatively high at the site of the release for a deep-sea discharge at high pressure.

Evaporation can result in the transfer of large proportions of spilled oil from the sea surface to the atmosphere, depending on the type of oil. Evaporation rates vary over space and time dependent on the prevailing sea temperatures, wind and current speeds, the surface area of the slick and entrained droplets that are exposed to the atmosphere as well as the state of weathering of the oil. Evaporation rates will decrease over time, depending on the calculated rate of loss of the more volatile compounds. By this process, the model can differentiate between the fates of different oil types.

Decay (degradation) of hydrocarbons may occur as the result of photolysis, which is a chemical process energised by ultraviolet light from the sun, and by biological breakdown, termed biodegradation. Many types of marine organisms ingest, metabolise and utilise oil as a carbon source, producing carbon dioxide and water as by-products.

The SIMAP weathering algorithms include terms to represent these dynamic processes. Technical descriptions of the algorithms used in SIMAP and validations against real spill events are provided in French et al., (1999) and French-McCay (2004).

REPORT

Input specifications for oil types include density, viscosity, pour-point, distillation curve (volume of oil distilled off versus temperature) and the aromatic/aliphatic component ratios within given boiling point ranges. The model calculates a distribution of the oil by mass into the following components:

- Surface-bound or floating oil;
- Entrained oil (non-dissolved oil droplets that are physically entrained by wave action);
- Dissolved hydrocarbons (principally the aromatic and short-chained aliphatic compounds);
- Evaporated hydrocarbons;
- Sedimented hydrocarbons; and
- Decayed hydrocarbons.

7 THRESHOLDS

The SIMAP model will track oil concentrations to very low levels. Hence, it is useful to define meaningful threshold concentrations for the recording of contact by oil components and determining the probability of exposure at a location (calculated from the number of replicate simulations in which this contact occurred).

The judgement of meaningful levels is complicated and will depend upon the mode of action, sensitivity of the biota contacted, the duration of the contact and the toxicity of the compounds that are represented in the oil. The latter factor is further complicated by the change in the composition of an oil type over time due to weathering processes. Without specific testing of the oil types, at different states of weathering against a wide range of the potential local receptors, such considerations are beyond the scope of this investigation.

It is important to note that the thresholds herein are based on the thresholds outlined in the NOPSEMA Oil Spill Modelling Bulletin (NOPSEMA, 2019), which are summarised in Table 7.1. Their relationship to exposure for the sea surface, shoreline, and water column (entrained and dissolved hydrocarbons) are presented in Sections 7.1 to 7.3. Supporting justifications of the adopted thresholds applied during the study and additional context relating to the area of exposure are also provided.

Table 7.1 Summary of the thresholds applied in this study.

Floating Oil Concentration (g/m ²)	Shoreline Oil Accumulation (g/m ²)	Entrained Hydrocarbons Concentration (ppb)	Instantaneous Dissolved Hydrocarbons (ppb)
1	10	10	10
10	100	100	50
50	1,000		400

7.1 Floating Oil

Floating oil concentrations are relevant to describing the risks of oil coating emergent reefs, vegetation in the littoral zone and shoreline habitats, as well as the risk to wildlife found on the water surface, such as marine mammals, reptiles, and birds. Floating oil is also visible at relatively low concentrations (> ~0.05 g/m²). Hence, the area affected by visible oil, which might trigger social or economic impacts, will be larger than the area where biological impacts might be expected.

The low threshold for floating oil exposure was set to 1 g/m², which equates approximately to an average thickness of 1 µm. It represents the practical limit of observing hydrocarbon sheens in the marine environment. This threshold is considered below levels which would cause environmental harm and is more indicative of the areas perceived to be affected due to its visibility on the sea-surface and potential to trigger temporary closures of areas (i.e., fishing grounds) as a precautionary measure.

Oil of this thickness is described as rainbow sheen in appearance, according to the Bonn Agreement Oil Appearance Code (Bonn Agreement, 2009; AMSA, 2014) (see Table 7.2). Figure 7.1 shows photographs highlighting the difference in appearance between a silvery sheen, rainbow sheen and metallic sheen.

Ecological impact has been estimated to occur at 10 g/m² (a film thickness of approximately 10 µm or 0.01 mm) (French et al., 1996 and French-McCay 2009) as this level of fresh oiling has been observed to mortally impact some birds through adhesion of oil to their feathers, exposing them to secondary effects such as hypothermia. The appearance of oil at this average thickness has been described as a metallic sheen (Bonn Agreement, 2009). Concentrations above 10 g/m² are also considered the lower actionable threshold, where oil may be thick enough for containment and recovery as well as dispersant treatment (AMSA, 2015).

Oil concentrations on the sea surface of 25 g/m² (or greater) would be harmful for all birds that have landed in an oil film due to potential contamination of their feathers, with secondary effects such as loss of temperature regulation and ingestion of oil through preening (Scholten et al., 1996; Koops et al., 2004). The appearance of oil at this thickness is also described as metallic sheen (Bonn Agreement, 2009). For this study the high exposure threshold was set to 50 g/m² and above based on NOPSEMA (2019). This threshold can also be used to inform response planning. Table 7.3 is a summary of each threshold.

Table 7.2 The Bonn Agreement Oil Appearance Code.

Code	Description Appearance	Layer Thickness Interval (g/m ² or µm)	Litres per km ²
1	Sheen (silvery/grey)	0.04 – 0.30	40 – 300
2	Rainbow	0.30 – 5.0	300 – 5,000
3	Metallic	5.0 – 50	5,000 – 50,000
4	Discontinuous True Oil Colour	50 – 200	50,000 – 200,000
5	Continuous True Oil Colour	≥ 200	≥ 200,000

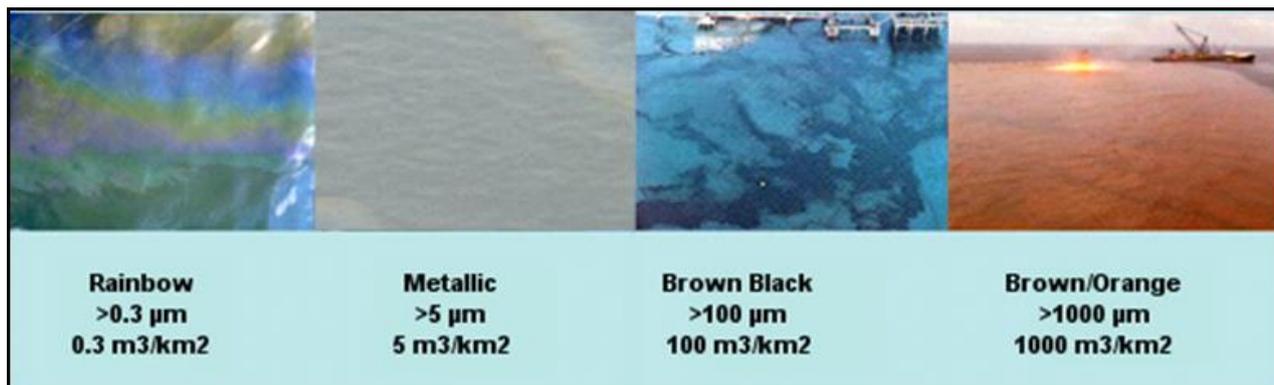


Figure 7.1 Photographs showing the difference between oil colour and thickness on the sea surface (source: adapted from Oil Spill Solutions, 2015).

Table 7.3 Floating oil exposure thresholds used in the oil spill modelling study (in alignment with NOPSEMA, 2019).

Threshold level	Floating oil (g/m ²)	Description
Low	1	Approximates range of socio-economic effects and establishes planning area for scientific monitoring
Moderate	10	Approximates lower limit for harmful exposures to birds and marine mammals
High	50*	Approximates surface oil slick and informs response planning

* 50 g/m² also used to define the threshold for actionable floating oil.

7.2 Shoreline Oil Accumulation

There are many different types of shorelines, ranging from cliffs, rocky beaches, sandy beaches, mud flats and mangroves, and each of these influences the volume of oil that can remain stranded ashore and its thickness before the shoreline saturation point occurs. For instance, a sandy beach may allow oil to percolate through the sand, thus increasing its ability to hold more oil ashore over tidal cycles and various wave actions than an equivalent area of water; hence oil can increase in thickness onshore over time. A sandy beach shoreline was assumed as the default shoreline type for the modelling in this study, as it allows for the highest carrying capacity of oil (of the available open/exposed shoreline types).

In, previous risk assessment studies, a threshold of 10 g/m² was used to assess the potential for shoreline accumulation (French-McCay et al.,2005a; 2005b). This is a conservative threshold used to define regions of socio-economic impact, such as triggering temporary closures of adjoining fisheries or the need for shore clean-up on beaches or man-made features/amenities (breakwaters, jetties, marinas, etc.). It would equate

to approximately 2 teaspoons of hydrocarbon per square meter of shoreline accumulation. The appearance is described as a stain/film. On that basis, the 10 g/m² has been selected to define the low threshold.

French et al. (1996) and French-McCay (2009) define a shoreline oil accumulation threshold of 100 g/m², or above, would potentially harm shorebirds and wildlife (fur-bearing aquatic mammals and marine reptiles on or along the shore) based on studies for sub-lethal and lethal impacts. This threshold has been used in previous environmental risk assessment studies (see French-McCay, 2003; French-McCay et al., 2004, French-McCay et al., 2011; 2012; NOAA, 2013). Additionally, this threshold is also recommended in AMSA's foreshore assessment guide as the acceptable minimum thickness that does not inhibit the potential for recovery and is best remediated by natural coastal processes alone (AMSA, 2015). This threshold equates to approximately ½ a cup of oil per square meter of shoreline accumulation and is described as a thin oil coat. The 100 g/m² has been selected to define the moderate threshold.

Observations by Lin & Mendelsohn (1996) demonstrated that loadings of more than 1,000 g/m² of hydrocarbon during the growing season would be required to impact marsh plants significantly. Similar thresholds have been found in studies assessing hydrocarbon impacts on mangroves (Grant et al., 1993; Suprayogi & Murray, 1999). This loading equates to approximately 1 litre of hydrocarbon per square meter of shoreline accumulation and the appearance is described as a hydrocarbon cover. A loading of 1,000 g/m² has been selected to define high threshold.

Table 7.4 is a summary of each threshold.

Table 7.4 Shoreline accumulation thresholds used in oil spill modelling study (in alignment with NOPSEMA, 2019).

Threshold level	Shoreline loading(g/m ²)	Description
Low	10	Predicts potential for some socio-economic impact
Moderate	100*	Loading predicts area likely to require clean-up effort
High	1,000	Loading predicts area likely to require intensive clean-up effort

* 100 g/m² also used to define the threshold for actionable shoreline oil.

7.3 In-water

Oil is a mixture of thousands of hydrocarbons of varying physical, chemical, and toxicological characteristics, and therefore, demonstrates varying fates and impacts on organisms. As such, for in-water exposure, the SIMAP model provides separate outputs for dissolved and entrained hydrocarbons from oil droplets. The consequences of exposure to dissolved and entrained components will differ because they have different modes and magnitudes of effect.

Entrained hydrocarbon concentrations were calculated based on oil droplets that are suspended in the water column, though not dissolved. The composition of this oil would vary with the state of weathering (oil age) and may contain soluble hydrocarbons when the oil is fresh. Calculations for dissolved hydrocarbons specifically calculates oil components which are dissolved in water, which are known to be the primary source of toxicity exerted by oil.

A complicating factor that should be considered when assessing the consequence of dissolved and entrained oil distributions is that there will be some areas where both physically entrained oil droplets and dissolved hydrocarbons co-exist. Higher concentrations of each will tend to occur close to the source where sea conditions can force mixing of relatively unweathered oil into the water column, resulting in more rapid dissolution of soluble compounds.

7.3.1 Dissolved Hydrocarbons

Laboratory studies have shown that dissolved hydrocarbons exert most of the toxic effects of oil on aquatic biota (Carls et al., 2008; Nordtug et al., 2011; Redman, 2015). The mode of action is a narcotic effect, which is positively related to the concentration of soluble hydrocarbons in the body tissues of organisms (French-McCay, 2002). Dissolved hydrocarbons are taken up by organisms directly from the water column by absorption through external surfaces and gills, as well as through the digestive tract. Thus, soluble hydrocarbons are termed “bioavailable”.

Hydrocarbon compounds vary in water-solubility and the toxicity exerted by individual compounds is inversely related to solubility, however bioavailability will be modified by the volatility of individual compounds (Nirmalakhandan & Speece, 1988; Blum & Speece, 1990; McCarty, 1986; McCarty et al., 1992a, 1992b; McCarty & Mackay, 1993; Verhaar et al., 1992, 1999; Swartz et al., 1995; French-McCay, 2002; McGrath & Di Toro, 2009). Of the soluble compounds, the greatest contributor to toxicity for water-column and benthic organisms are the lower-molecular-weight aromatic compounds, which are both volatile and soluble in water. Although they are not the most water-soluble hydrocarbons within most oil types, the polynuclear aromatic hydrocarbons (PAHs) containing 2 – 3 aromatic ring structures typically exert the largest narcotic effects because they are semi-soluble and not highly volatile, so they persist in the environment long enough for significant accumulation to occur (Anderson et al., 1974, 1987; Neff & Anderson, 1981; Malins & Hodgins, 1981; McAuliffe, 1987; NRC, 2003). The monoaromatic hydrocarbons (MAHs), including the BTEX compounds (benzene, toluene, ethylbenzene, and xylenes), and the soluble alkanes (straight chain hydrocarbons) also contribute to toxicity, but these compounds are highly volatile, so that their contribution will be low when oil is exposed to evaporation and higher when oil is discharged at depth where volatilisation does not occur (French-McCay, 2002).

French-McCay (2002) reviewed available toxicity data, where marine biota was exposed to dissolved hydrocarbons prepared from oil mixtures, finding that 95% of species and life stages exhibited 50% population mortality (LC₅₀) between 6 and 400 ppb (with an average of 50 ppb) total PAH concentration after 96 hrs exposure. Therefore, concentrations lower than 6 ppb total PAH value should be protective of 97.5% of species and life stages even with exposure periods of days (at least 96 hours). Early life-history stages of fish appear to be more sensitive than older fish stages and invertebrates.

Exceedances of 10, 50 or 400 ppb over a 1-hour timestep (see Table 7.5) were applied in this study to indicate the increasing potential for sub-lethal to lethal toxic effects (or low to high), based on NOPSEMA (2019).

7.3.2 Entrained Hydrocarbons

Entrained hydrocarbons consist of oil droplets that are suspended in the water column and insoluble. Insoluble compounds in oil cannot be absorbed from the water column by aquatic organisms, therefore they are not bioavailable through absorption of compounds from the water. Exposure to these compounds would require routes of uptake other than absorption of soluble compounds. The route of exposure of organisms to whole oil alone include direct contact with tissues of organisms and uptake of oil by direct consumption, with potential for biomagnification through the food chain (NRC, 2003).

Thresholds of 10 ppb and 100 ppb were applied over a 1-hour time exposure (Table 7.5) as per NOPSEMA (2019).

The 10-ppb threshold exposure zone is not considered to be of significant biological impact and is therefore outside the adverse exposure zone. This exposure zone represents the area contacted by the spill.

Table 7.5 Dissolved and entrained hydrocarbon exposure thresholds assessed over a 1-hour time step used in the oil spill modelling study (in alignment NOPSEMA, 2019).

	Exposure level	In-water threshold (ppb)	Description
Dissolved hydrocarbons	Low	10	Establishes planning area for scientific monitoring based on potential for exceedance of water quality triggers
	Moderate	50	Approximates potential toxic effects, particularly sublethal effects to sensitive species
	High	400	Approximates toxic effects including lethal effects to sensitive species
Entrained hydrocarbons	Low	10	Establishes planning area for scientific monitoring based on potential for exceedance of water quality triggers
	Moderate	100	As appropriate given oil characteristics for informing risk evaluation

7.4 Dispersion Coefficients and Mixed Layer Depth

A horizontal dispersion coefficient of 10 m²/s was used to account for dispersive processes acting of the floating oil on the surface that are below the scale of resolution of the current data and is based on typical values for open waters (Okubo, 1971).

A vertical dispersion coefficient (*D_v*) of 68 cm²/s was used to represent the turbulent mixing and diffusion processes in the wave-mixed layer in the upper water column. It is a site-specific value computed using the 50th percentile wind speed of 9 knots at the operational area derived from the 10 year dataset (at 10 m above the sea surface, *W₁₀*) based on French-McCay (2004).

The mixed layer depth is the depth that vertical mixing is strong enough to cause uniform temperature and salinity, and is influenced by factors like wind, ocean currents and waves. The 50th percentile value at the site was calculated using Copernicus’ 10 years (2010 to 2019) monthly averaged mixed layer depth data and was found to be 25 m.

8 HYDROCARBON PROPERTIES

Table 8.1 and Table 8.2 show the physical characteristics and boiling point ranges for the MDO.

The MDO has a density of 890.0 kg/m³ at 25°C (API of 27.0) and a low pour point of -9°C. The low viscosity (14 cP) indicates that this oil will spread quickly when released and will form a thin to low thickness film on the sea surface, increasing the rate of evaporation.

Generally, about 4% of the MDO mass should evaporate within the first 12 hours (Boiling point (BP) < 180°C); a further 32.0% should evaporate within the first 24 hours (180°C < BP < 265°C); and an additional 54.0% should evaporate over several days (265°C < BP < 380°C). Approximately 10% (by mass) of MDO will not evaporate, though will decay slowly over time. It is categorised as a group II oil (light-persistent) according to the International Tankers Owners Pollution Federation (ITOPF, 2020) and US EPA/USCG classifications. The classification is based on the specific gravity of hydrocarbons in combination with relevant boiling point ranges.

It is important to note that some of the heavier components contained in the MDO (i.e. low volatile and persistent portions) will have a strong tendency to physically entrain into the upper water column in the presence of moderate winds (i.e. >12 knots) and breaking waves but can re-float to the surface if these energies abate.

Table 8.1 Physical properties for the MDO used as part of the modelling study.

Properties	MDO
Density (kg/m ³)	890.0 (at 25 °C)
API	27.0
Dynamic viscosity (cP)	14.0 (at 25 °C)
Pour point (°C)	-9
Hydrocarbon property category	Group II
Hydrocarbon property classification	Light persistent

Table 8.2 Boiling point ranges for the MDO used as part of the modelling study.

Name	Volatiles (%)	Semi-volatiles (%)	Low volatiles (%)	Residual (%)
Boiling point (°C)	< 180	180-265	265-380	> 380
	Non persistent			Persistent
MDO	4.0	32.0	54.0	10.0

8.1 Marine Diesel Oil Weathering Characteristics

A series of weathering tests were conducted to illustrate the potential behaviour following a 50 m³ instantaneous surface release of MDO when exposed to:

- 5 knot (2.6 m/s) constant wind speed, 27°C water temperature and currents; and
- Variable wind speeds (1 – 12 m/s or 2 to 24 knots), 27°C water temperature and currents.

The first case is indicative of the potential weathering rates under calm conditions that would not generate entrainment, while the second case would be more representative of the moderate winds experienced over the region.

The mass balance forecast for the constant wind case (Figure 8.1) shows that 36.1% of the diesel is predicted to evaporate within 24 hours. The remaining MDO on the water surface will weather at a slower rate and be subject to more gradual decay through biological and photochemical processes.

In the variable wind speeds test (Figure 8.2), characterized by stronger average winds and breaking waves, there is an increased entrainment of MDO into the water column. Approximately 24 hours into the spill, the forecast indicates that 80.5% of the MDO will have entrained, with an additional 15.0% expected to have evaporated. Hence, only a <1% of floating oil remains on the water surface. The low volatile and residual compounds are anticipated to entrain beneath the surface under conditions generating wind waves (winds approximately >6 m/s).

While the MDO is entrained, it is forecast to decay at a higher rate of 3% per day or 21% after 7 days, attributed to biological and photochemical degradation. This is in contrast to a rate of 0.14% per day and a total of ~1% after 7 days for the constant-wind case. Given the proportion of entrained MDO and its tendency to remain mixed in the water column, the remaining hydrocarbons are expected to undergo decay over several weeks.

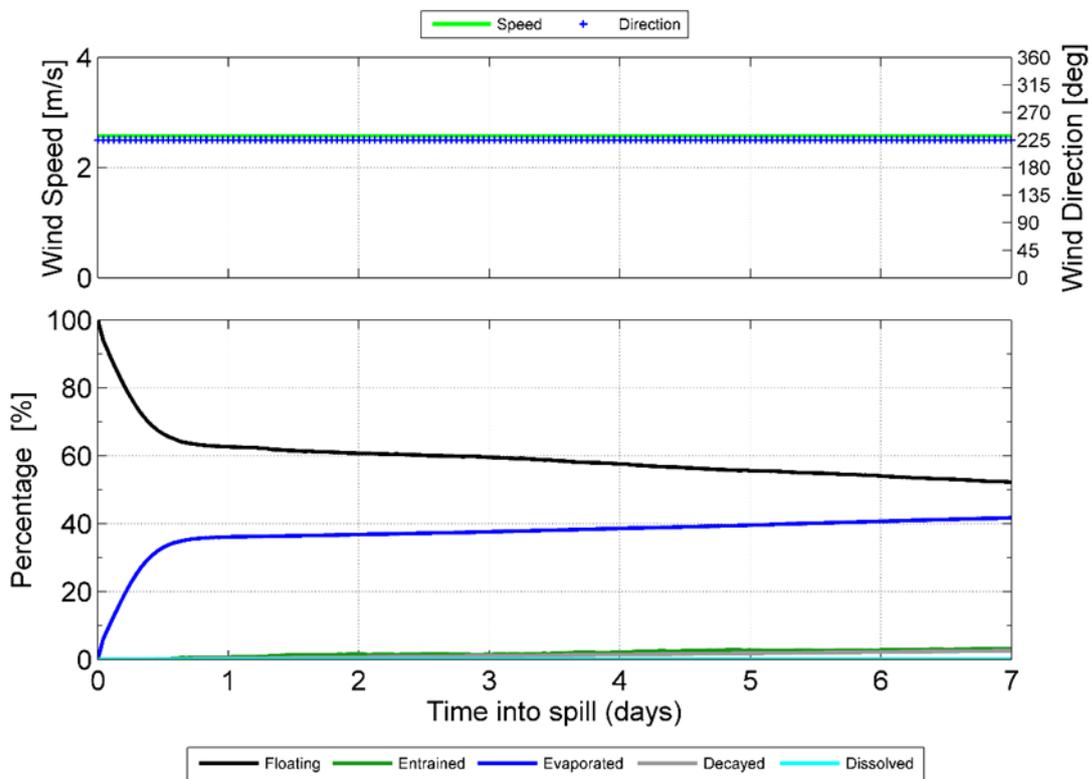


Figure 8.1 Mass balance plot for an instantaneous 50 m³ surface release of MDO subjected to a constant 5 knot (2.6 m/s) wind, currents and 27°C water temperature.

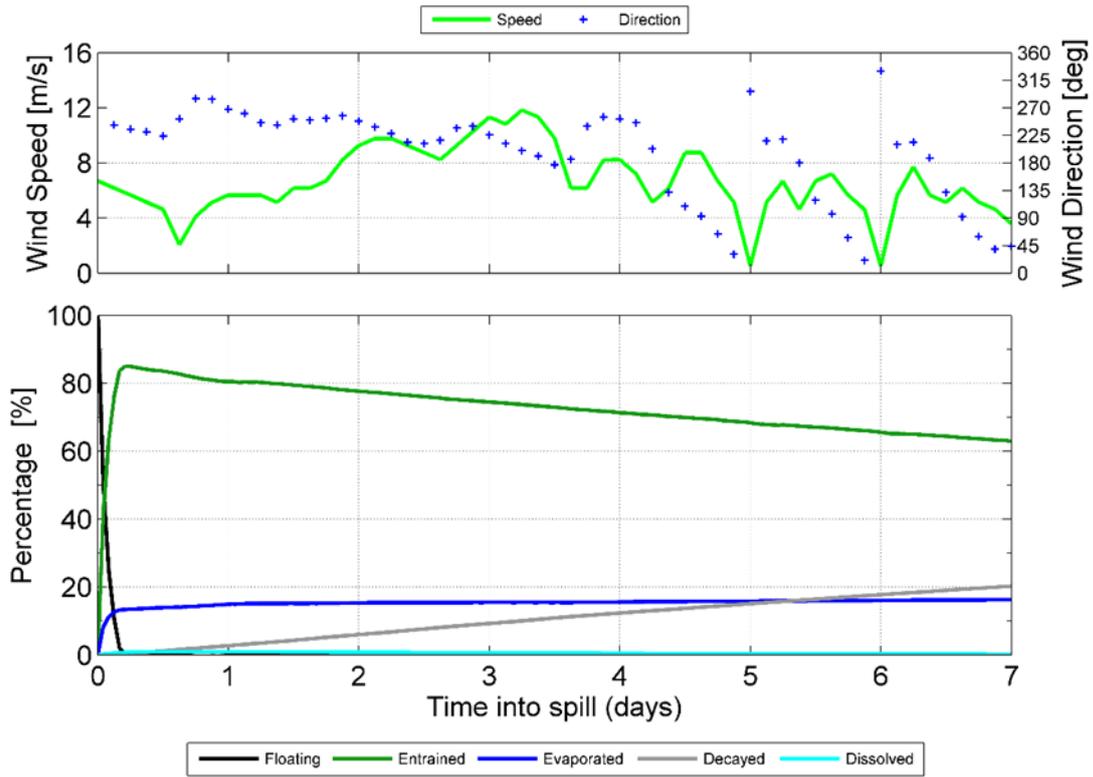


Figure 8.2 Mass balance plot for an instantaneous 50 m³ surface release of MDO subjected to variable wind speeds (1 – 12 m/s or 2 to 24 knots), currents and 27°C water temperature.

9 CALCULATION OF STOCHASTIC MODELLING EXPOSURE RISKS

During each simulation, the SIMAP model records the location (by latitude, longitude, and depth) of each of the particles (representing a given mass of oil) on or in the water column, at regular time steps. For any particles that contact a shoreline, the model records the accumulation of oil mass that arrives on each section of shoreline over time, less any mass that is lost to evaporation and/or subsequent removal by current and wind forces.

The collective records from all simulations are then analysed by dividing the study region into a three-dimensional grid. For oil particles that are classified as being at the water surface (floating oil), the sum of the mass in all oil particles (including accounting for spreading and dispersion effects) located within a grid cell, divided by the area of the cell provides estimates of the concentration of oil in that grid cell, at each time step. For entrained and dissolved oil particles, concentrations are calculated at each time step by summing the mass of particles within a grid cell and dividing by the volume of the grid cell.

The concentrations of oil calculated for each grid cell, at each time step, are then analysed to determine whether concentration estimates exceed defined threshold concentrations over time.

Risks are then summarised as follows:

- The probability of exposure to a grid cell is calculated by dividing the number of spill simulations where any instantaneous contact occurred above a specified threshold at that location by the total number of replicate spill simulations. For example, if contact occurred at a location (above a specified threshold) during 21 out of 100 simulations, a probability of exposure of 21% is indicated;
- The minimum potential time to a shoreline grid cell is calculated by the shortest time over which oil at a concentration above a threshold was calculated to travel from the source to the location in any of the replicate simulations;
- The maximum potential concentration of oil predicted for each shoreline section (composed of a collection of grid cells) is the greatest mass per m² of shoreline calculated to strand at any location within that section during any of the replicate simulations;
- The average of the maximum concentrations of oil predicted to potentially accumulate on each shoreline section is calculated by determining the greatest mass per m² of shoreline during each replicate simulation and calculating an average of these estimates across the simulations. Note that this statistic has been previously referred to as the “mean expected maximum” in earlier reports; and
- Similar treatments are undertaken for entrained oil and dissolved hydrocarbons.

Thus, the minimum time to shoreline and the maximum potential concentration estimates indicate the worst potential outcome of the modelled spill scenario for each section of shoreline. However, the average over the simulations presents an average of the potential outcomes, in terms of oil that could strand.

Note also that results quoted for sections of shoreline or shoal are derived for any individual grid cell within that section or shoal, as a conservative estimate. Grid cells will represent shoreline lengths of the order of ~1 km, while sections or regions will represent shorelines spanning tens to hundreds of kilometres and we do not imply that the maximum potential concentrations quoted will occur over the full extent of each section. We therefore warn against multiplying the maximum concentration estimates by the full area of the section because this will greatly overestimate the total volume expected on that section.

Noting the grid resolution of 1 km, for sensitive receptors with shorelines <100 m, it is not possible to resolve down to scale of these individual receptors where the area of shoreline above high tide is smaller than the grid resolution. This is a conservative approach to estimating risks to shorelines and may over-predict length of shoreline oiled.

The maximum entrained hydrocarbon and maximum dissolved hydrocarbon concentration are calculated for areas surrounding each defined shoreline (see Section 10). These areas extend out from the coast to provide a buffer area enclosing shallow (<10 m) habitats close to shore. If oil passes within this buffer distance from shore, calculation for shoreline exposure will be made. This is a conservative approach to estimating risks to shorelines to allow for spatial errors in model forecasts.

The greatest calculated value at any time step during any simulation is listed. These values therefore represent worst-case localised estimates (within a grid cell). The averages over all values from the simulations represent a central tendency of these simulated worst-case estimates.

It is important to note that the stochastic modelling results presented in this document relate to the predicted outcomes once defined spill events have occurred. The probability of the spill scenarios occurring is not considered. The results should therefore be viewed as a guide to the likely outcomes, should the spill scenarios occur. Different locations within the potential zone of influence would be affected under different time-series of environmental forces. Consequently, these contours for the potential zone of influence will cover a larger area than the area that is likely to be affected during any one single spill event. The contours should therefore be judged as contours of probability and not representations of the area swept by individual spill slicks.

10 RECEPTORS

A range of environmental receptors and shorelines were assessed for floating oil exposure, shoreline contact and water column exposure (entrained and dissolved hydrocarbons) as part of the study (see Figure 10.1 to Figure 10.7). Receptor categories (see Table 10.1) include sections of shorelines and offshore islands. All other sensitive receptors other than submerged reefs, shoals and banks (RSB) were sourced from Department of Climate Change, Energy, the Environment and Water (<https://www.dcceew.gov.au/>). Risks of exposure were separately calculated for each sensitive receptor and have been tabulated based on the seasonal results, unless the release location resides within the receptor, as per Table 10.2.

Table 10.1 Summary of receptors used to assess floating oil, shoreline and in-water exposure to hydrocarbons.

Receptor Category	Acronym	Hydrocarbon Exposure Assessment		
		Water Column	Floating oil	Shoreline
Australian Marine Park	AMP	✓	✓	✗
Interim Biogeographic Regionalisation for Australia	IBRA	✓	✓	✗
Integrated Marine and Coastal Regionalisation of Australia	IMCRA	✓	✓	✗
Key Ecological Feature	KEF	✓	✓	✗
Marine Park	MP	✓	✓	✗
National Marine Reserves	MNP	✓	✓	✗
Nature Reserve	NR	✓	✓	✗
Ramsar wetland	Ramsar	✓	✓	✗
Reefs, Shoals and Banks	RSB	✓	✓	✗
Shoreline	Shoreline	✓ (Reported as: Nearshore Waters)	✓ (Reported as: Nearshore Waters)	✓ (Reported as: Shore)
State Waters	State Waters	✓	✓	✗

Table 10.2 Receptors that the release location resides within, therefore, no modelling results are presented.

Receptor Category	Name
IMCRA	Bonaparte Gulf

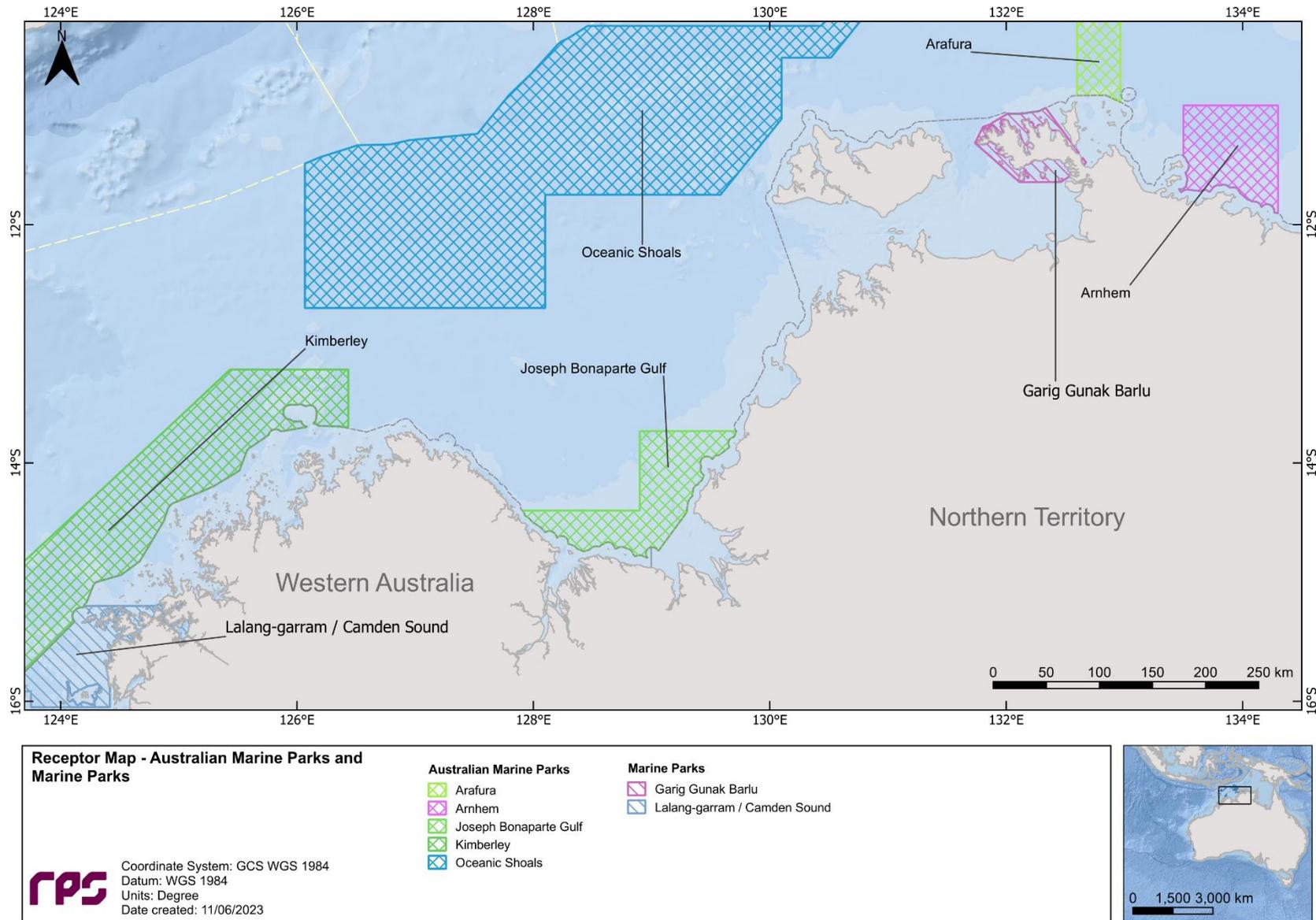


Figure 10.1 Receptor map for Australian Marine Parks and Marine Parks.

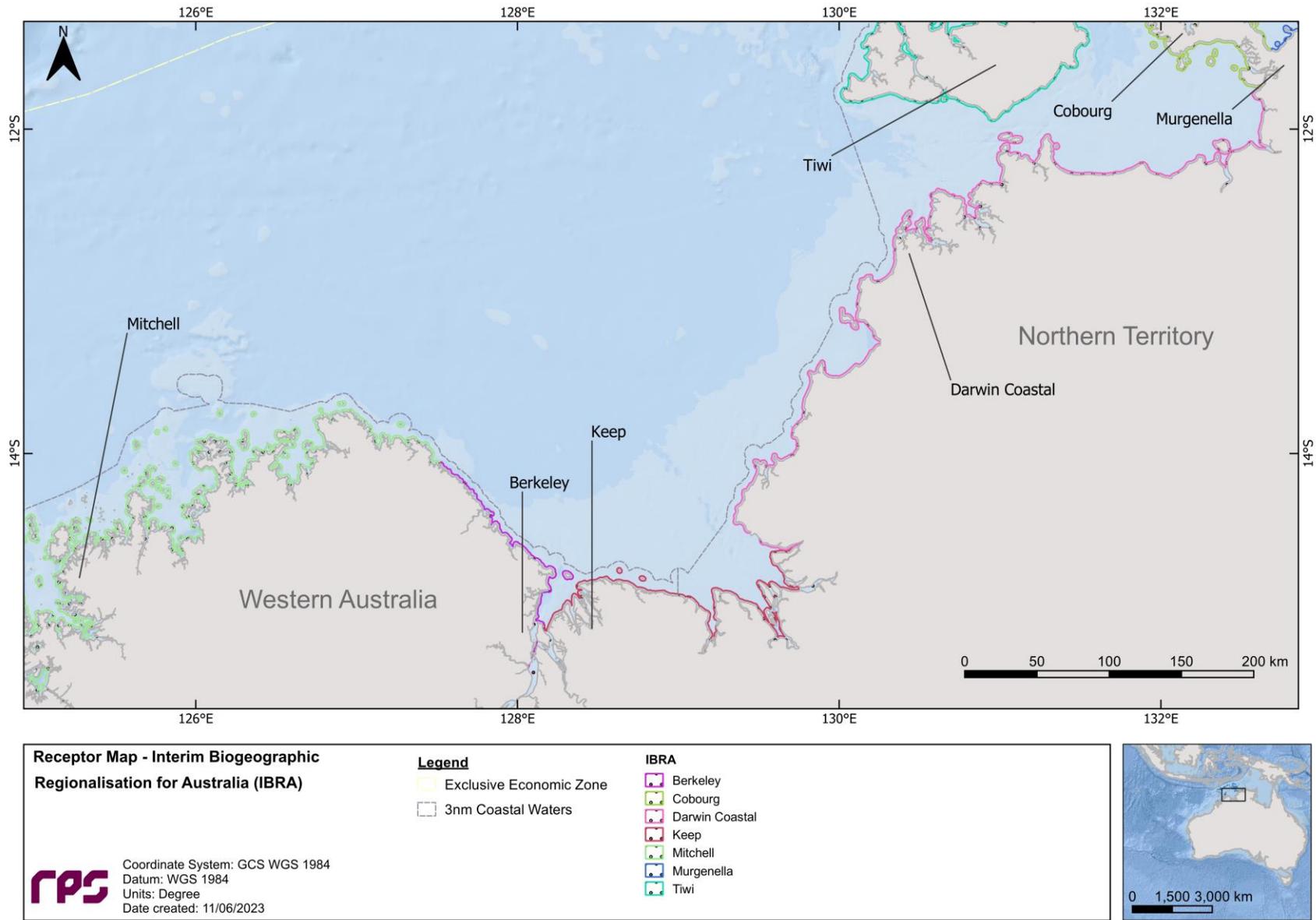


Figure 10.2 Receptor map for Interim Biogeographic Regionalisation for Australia (IBRA).

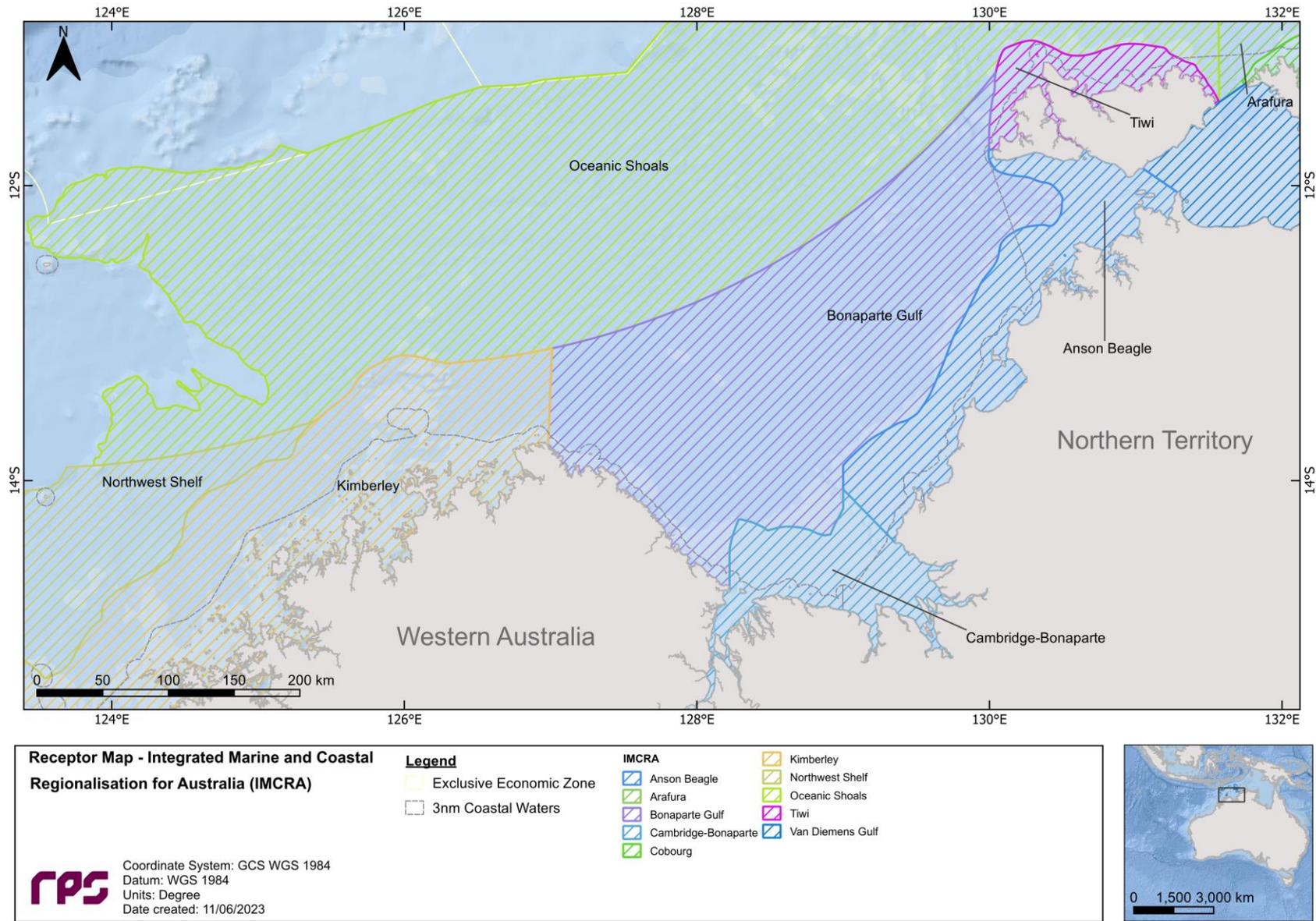


Figure 10.3 Receptor map of Integrated Marine and Coastal Regionalisation of Australia (IMCRA).

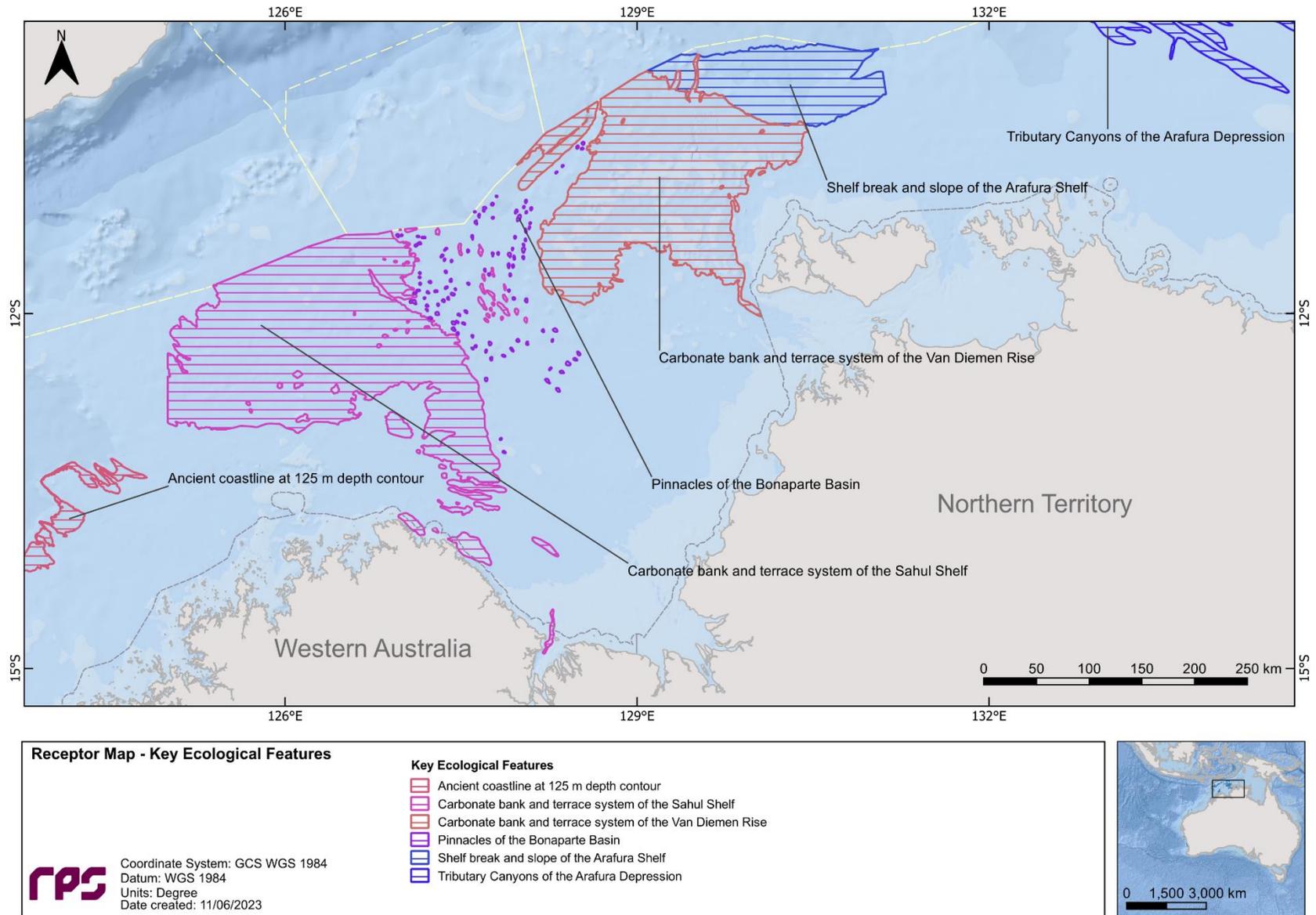


Figure 10.4 Receptor map of Key Ecological Features (KEF).

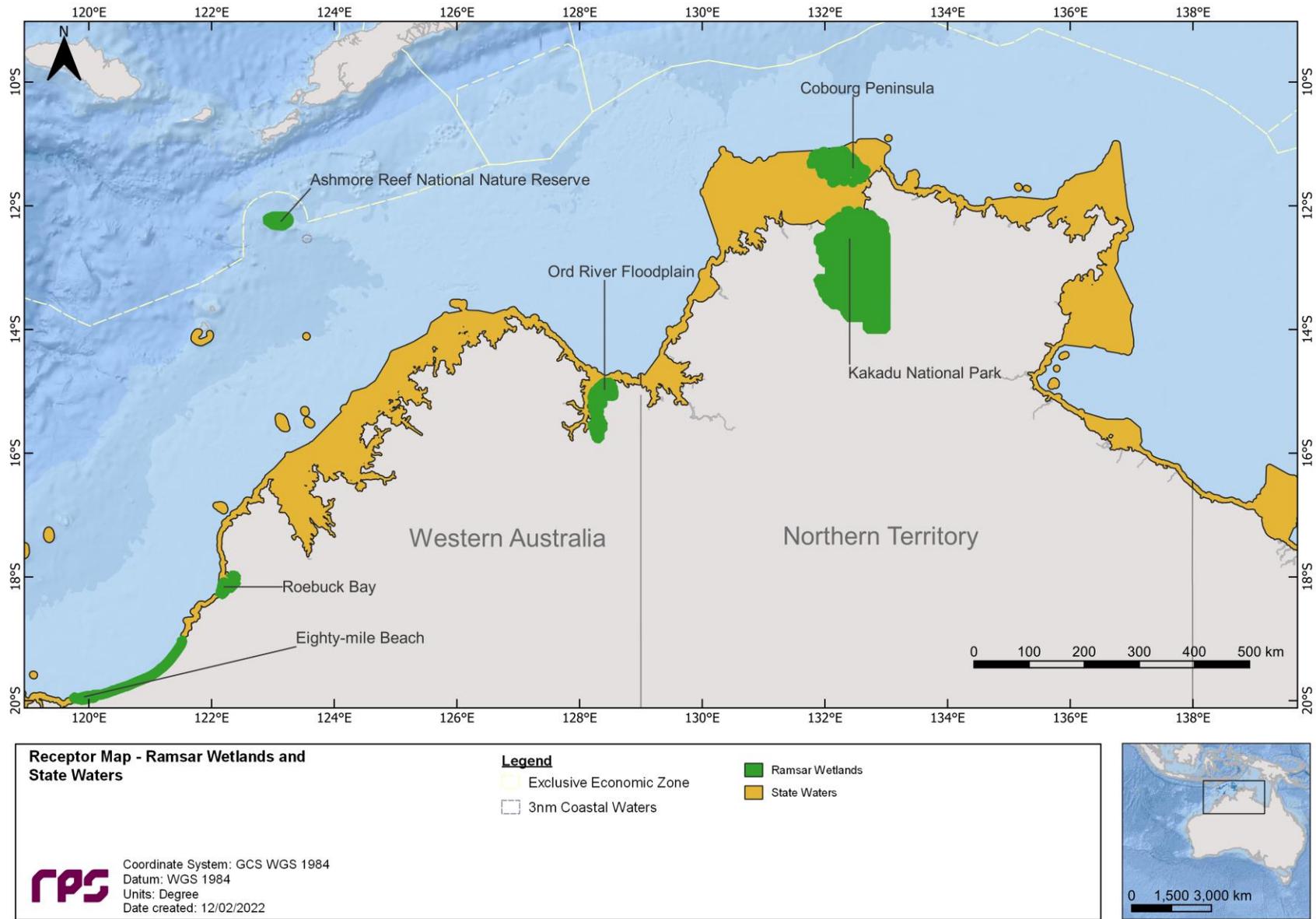


Figure 10.5 Receptor map for RAMSAR wetlands and State waters.

REPORT

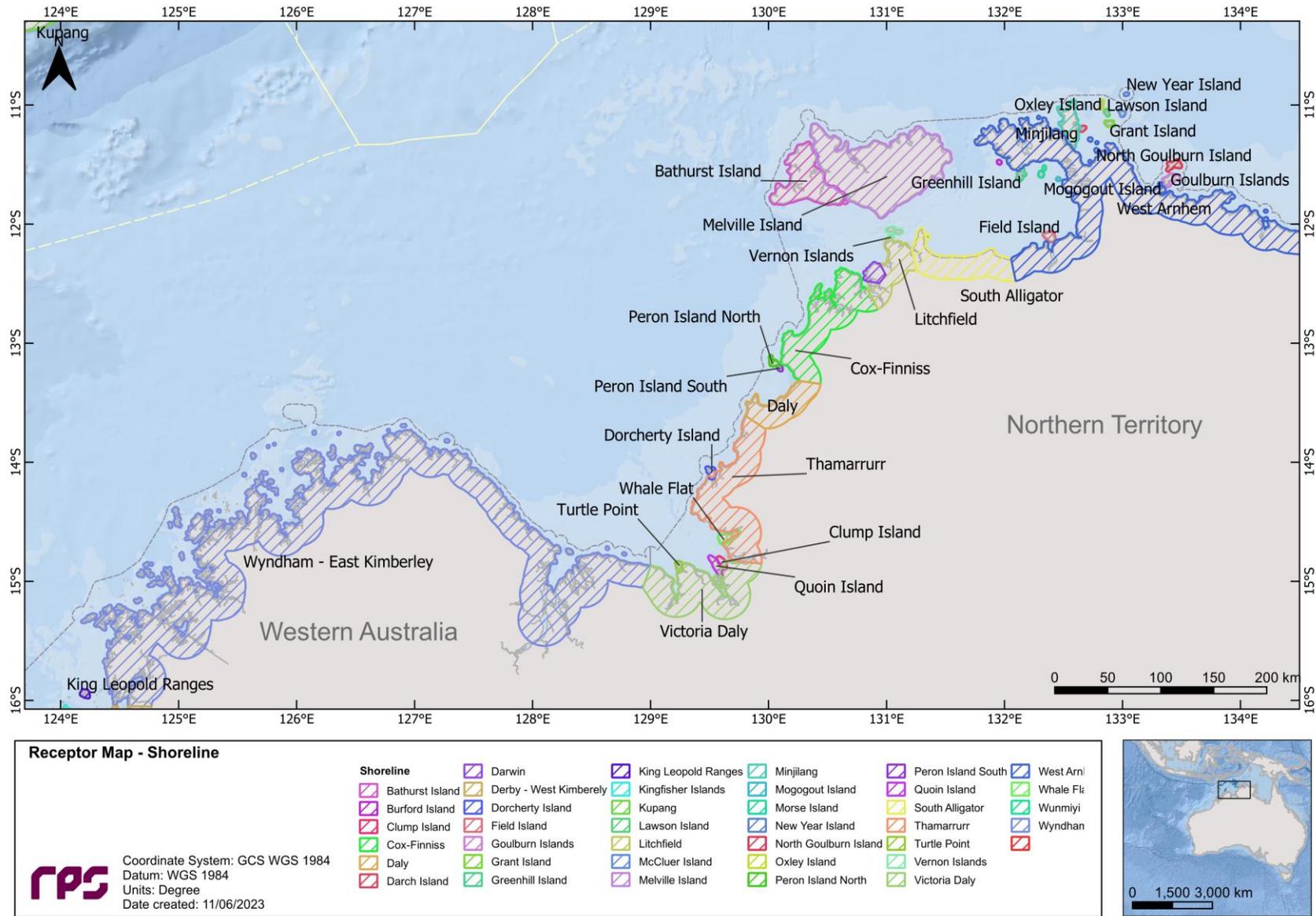


Figure 10.7 Receptor map for the shoreline sectors.

11 MODEL SETTINGS

Table 11.1 provides a summary of the oil spill model settings.

The simulation length for the scenario was carefully selected based on extensive sensitivity testing. During the sensitivity testing process, sample spill trajectories are run for longer than intended durations for each scenario. Upon completion of the spill trajectories, the results are carefully assessed to examine the persistence of the hydrocarbon (i.e. whether the maximum evaporative loss has been achieved for the period modelled; and whether a substantial volume of hydrocarbons remain in the water column (if any)) in conjunction with the extent of sea surface exposure based on reporting thresholds. The persistence of the hydrocarbons on the sea surface and entrained within the water column is based on several factors including the nature of release (duration, volume and type (subsea or surface)), residual properties of the hydrocarbon type and weathering. Once there is agreement between the two factors (i.e. the final fate of hydrocarbon is accounted for, and the full exposure area is identified) the simulation length is deemed appropriate.

Table 11.1 Summary of the oil spill model settings used in this assessment.

Scenario details	
Description	MDO vessel spill
Number of spill simulations with randomly selected start times	300 total (100 per season)
Seasons	Summer (January, February, December) Transitional (March, September to November) Winter (April to August)
Spill volume	300 m ³
Oil type	Marine diesel oil
Release depth	Surface
Release duration	Instantaneous
Simulation length	30 days
Floating oil (NOPSEMA) thresholds	1 g/m ² , low exposure 10 g/m ² , moderate exposure 50 g/m ² , high exposure
Shoreline accumulation (NOPSEMA) thresholds	10 g/m ² , low exposure 100 g/m ² , moderate exposure 1,000 g/m ² , high exposure
Dissolved hydrocarbon (NOPSEMA) thresholds	10 ppb over 1 hour, low exposure 50 ppb over 1 hour, moderate exposure 400 ppb over 1 hour, high exposure
Entrained hydrocarbon (NOPSEMA) thresholds	10 ppb over 1 hour, low exposure 100 ppb over 1 hour moderate exposure

12 PRESENTATION AND INTERPRETATION OF MODEL RESULTS

The results from the modelling study are presented in a number of tables and figures, which aim to provide an understanding of the predicted sea-surface and water column (subsurface) exposure, and shoreline accumulation (if predicted).

12.1 Stochastic Modelling

If readers are not fully familiar with how to interpret stochastic modelling outputs, please refer to the relevant NOPSEMA factsheet (NOPSEMA, 2018) before reading this report section.

Predictions for the probability of contact and time to contact by oil concentrations equalling or exceeding defined thresholds for floating and shoreline oil, entrained oil and dissolved hydrocarbons are provided in the following sections to summarise the stochastic results, which are calculated and presented as follows:

- a. **Areas of Exposure** - encompasses the entire area that could be exposed and was derived from the seasonal stochastic modelling results (i.e., results from all replicate simulations across all seasons) based on the following thresholds:

Low threshold Exposure Area

- i. Floating oil – 1 g/m²;
- ii. Shoreline oil accumulation – 10 g/m²;
- iii. Dissolved aromatic hydrocarbon – 10 ppb; and
- iv. Entrained hydrocarbons – 10 ppb.

Moderate Threshold Exposure Area

- i. Floating oil – 10 g/m²;
- ii. Shoreline oil accumulation – 100 g/m²;
- iii. Dissolved aromatic hydrocarbon – 50 ppb; and
- iv. Entrained hydrocarbons – 100 ppb.

High Threshold Exposure Area

- i. Floating oil – 50 g/m²;
- ii. Shoreline oil accumulation – 1,000 g/m²; and
- iii. Dissolved aromatic hydrocarbon – 400 ppb.

- b. **Seasonal cross-sections of entrained and dissolved hydrocarbon concentrations** – The predicted maximum entrained and dissolved hydrocarbon concentrations within the water column, along east-west and north-south transects in the vicinity of the release location.
- c. **Predicted zones of potential exposure** – maps of floating oil exposure, shoreline oil accumulation, entrained oil and dissolved hydrocarbons exposure were generated based on the following thresholds:
- i. Floating oil – 1-10 g/m² (Low), 10-50 g/m² (Moderate) and ≥50 g/m² (High);
 - ii. Shoreline oil accumulation – 10-100 g/m² (Low), 100-1,000 g/m² (Moderate) and ≥1,000 g/m² (High);
 - iii. Entrained hydrocarbons – 10-100 ppb (Low) and ≥100 ppb (Moderate); and
 - iv. Dissolved hydrocarbon – 10-50 ppb (Low), 50-400 ppb (Moderate) and ≥400 ppb (High).
- d. **The probability of oil exposure on the sea surface, in-water or shorelines** – is calculated by dividing the number of spill simulations passing over a given grid cell at a given threshold, divided by the total number of simulations.

- e. **The minimum time before oil exposure on the sea surface, in-water or shorelines** – is determined by ranking the elapsed time before sea surface exposure, entrained oil exposure or shoreline accumulation (at a given threshold) to a given location/grid cell for each of the spill simulations.
- f. **The maximum local accumulated concentration averaged over all replicate spills** - the greatest concentration calculated for any point on the shoreline after averaging over all replicate simulations.
- g. **The maximum local accumulated concentration in the worst replicate spill** - the greatest accumulation predicted for any point on the shoreline during any replicate simulation, and thus represents an extreme estimate.
- h. **The average volume of oil ashore** – is determined by averaging the volume of oil ashore across all simulations predicted to make shoreline contact.
- i. **The maximum volume of oil ashore in the worst replicate spill** – the greatest volume of oil predicted for any point on the shoreline during any replicate simulation, and thus represents an extreme estimate.

The mean and maximum shoreline concentrations indicate the concentrations forecast to potentially accumulate over time on any discrete part of a shoreline; calculated for individual portions of 1 km in length. Accumulated concentrations are calculated by summing the mass of oil that arrives at any concentration (including < threshold) over time at a model cell and subtracting any mass lost through evaporation and washing off, where relevant.

Note that it is possible that oil films arriving at concentrations that are less than the threshold may accumulate over the course of a spill event to result in concentrations that apparently exceed the threshold. Hence, the mean expected, and maximum concentrations of accumulated oil can exceed the threshold applied to the probability calculations for the arrival of floating oil even where no instantaneous exceedances above threshold are predicted. It is important to understand that the two parameters (floating concentration and shoreline concentration) are quite distinct, calculated in different ways and representative of alternative outcomes. The floating probability estimates, and the shoreline accumulative estimates should therefore be treated as independent estimators of different exposure outcomes, and not directly compared.

Readers should note that the contour maps presented in the stochastic modelling results, do not represent the predicted coverage of any one hydrocarbon spill or a depiction of a slick or plume at any instant in time. Rather, the contours are a composite of many theoretical slick paths, integrated over the full duration of the simulations relevant to each scenario. The stochastic modelling contour maps should be treated as indications of the probability of exposure at defined concentrations, for individual locations, at some point in time after the defined spill commences, given the trends and variations in metocean conditions that occur around the study area.

Locations with higher probability ratings were exposed during a greater number of spill simulations, indicating that the combination of the prevailing wind and current conditions are more likely to result in contact to these locations if the spill scenario were to occur in the future. The areas outside of the lowest-percentage contour indicate that contact will be less likely under the range of prevailing conditions for this region than areas falling within higher probability contours. It is important to note that the probabilities are derived from the samples of data used in the modelling. Therefore, locations that are not calculated to receive exposure at threshold concentrations or greater in any of the replicate simulations might possibly be contacted if very unusual conditions were to occur. Hence, we do not attribute a probability of nil to areas beyond the lowest probability contour.

13 MODELLING RESULTS: SURFACE SPILL FROM VESSEL INCIDENT

This scenario investigated the potential exposure from a 300 m³ instantaneous surface release of MDO from vessel incident at Petrel-4. The MDO was tracked for 30 days to allow the concentrations to decrease below the lowest thresholds. The modelling for this scenario assumed no mitigation efforts are undertaken to collect or otherwise affect the natural transport and weathering.

Section 13.1 presents the seasonal results, including the areas of exposure across all seasons (Section 13.1.1).

13.1 Stochastic Analysis

13.1.1 Areas of Exposure

Figure 13.1 presents the low, moderate and high threshold exposure areas, which were derived by combining the results from all 300 spill simulations and presented as an annual assessment.

REPORT

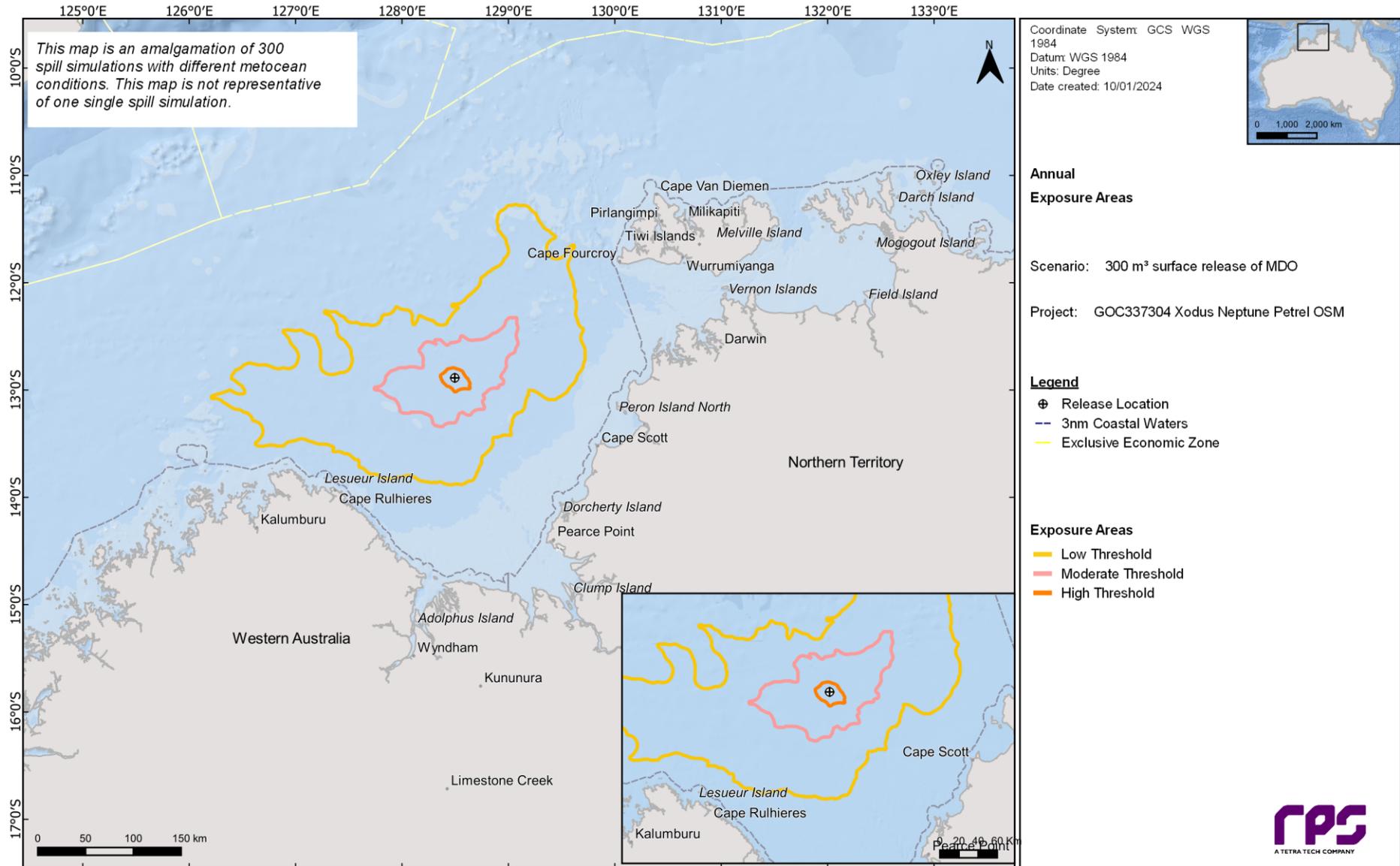


Figure 13.1 Predicted areas of exposure following a surface vessel spill. The results were calculated from all 300 spill simulations and presented as an annual assessment.

13.1.2 Floating Oil Exposure

Table 13.1 summarises the maximum distances from the release location to floating oil exposure zones. Floating oil concentrations exceeding 1 g/m² could extend up to 99 km from the release location. The distances reduced to 43 km and 17 km as the thresholds increase to 10 g/m² and 50 g/m², respectively.

Table 13.2 summarises the potential floating oil exposure to receptors for each season. Only receptors predicted to be exposed at, or above, the low threshold have been presented.

During summer conditions the Oceanic Shoals IMCRA was predicted to experience floating oil exposure at with a probability of 1% for concentrations at, or above, 1 g/m², and the initial time before exposure was 68 hours. During transitional conditions the Carbonate bank and terrace system of the Sahul Shelf KEF (2%) and Pinnacles of the Bonaparte Basin KEF (1%) were predicted to experience exposure at, or above, 1 g/m², and the minimum times before exposure to each receptor were 126 hours and 101 hours, respectively. No exposure to any receptor was predicted during winter conditions.

Figure 13.2 to Figure 13.4 illustrate the extent of floating oil exposure zones for each season.

Table 13.1 Maximum distances from the release location to floating oil exposure thresholds from a surface vessel spill for each season. Results were calculated from 100 spill simulations per season.

Season	Distance and direction travelled	Floating oil exposure thresholds		
		1 g/m ²	10 g/m ²	50 g/m ²
Summer	Maximum distance (km) from release location	40	28	17
	Direction	Northwest	West	Southeast
Transitional	Maximum distance (km) from release location	99	43	15
	Direction	West	West	Southeast
Winter	Maximum distance (km) from release location	46	33	12
	Direction	Northeast	Southwest	West

REPORT

Table 13.2 Summary of the floating oil exposure to receptors from a surface vessel spill during each season. Results were calculated from 100 spill simulations per season.

Receptor		Summer						Transitional						Winter					
		Probability of floating oil exposure (%)			Minimum time before floating oil exposure (hours)			Probability of floating oil exposure (%)			Minimum time before floating oil exposure (hours)			Probability of floating oil exposure (%)			Minimum time before floating oil exposure (hours)		
		≥ 1 g/m ²	≥ 10 g/m ²	≥ 50 g/m ²	≥ 1 g/m ²	≥ 10 g/m ²	≥ 50 g/m ²	≥ 1 g/m ²	≥ 10 g/m ²	≥ 50 g/m ²	≥ 1 g/m ²	≥ 10 g/m ²	≥ 50 g/m ²	≥ 1 g/m ²	≥ 10 g/m ²	≥ 50 g/m ²	≥ 1 g/m ²	≥ 10 g/m ²	≥ 50 g/m ²
IMCR A	Oceanic Shoals	1	-	-	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KEF	Carbonate bank and terrace system of the Sahul Shelf	-	-	-	-	-	-	2	-	-	126	-	-	-	-	-	-	-	-
	Pinnacles of the Bonaparte Basin	-	-	-	-	-	-	1	-	-	101	-	-	-	-	-	-	-	-

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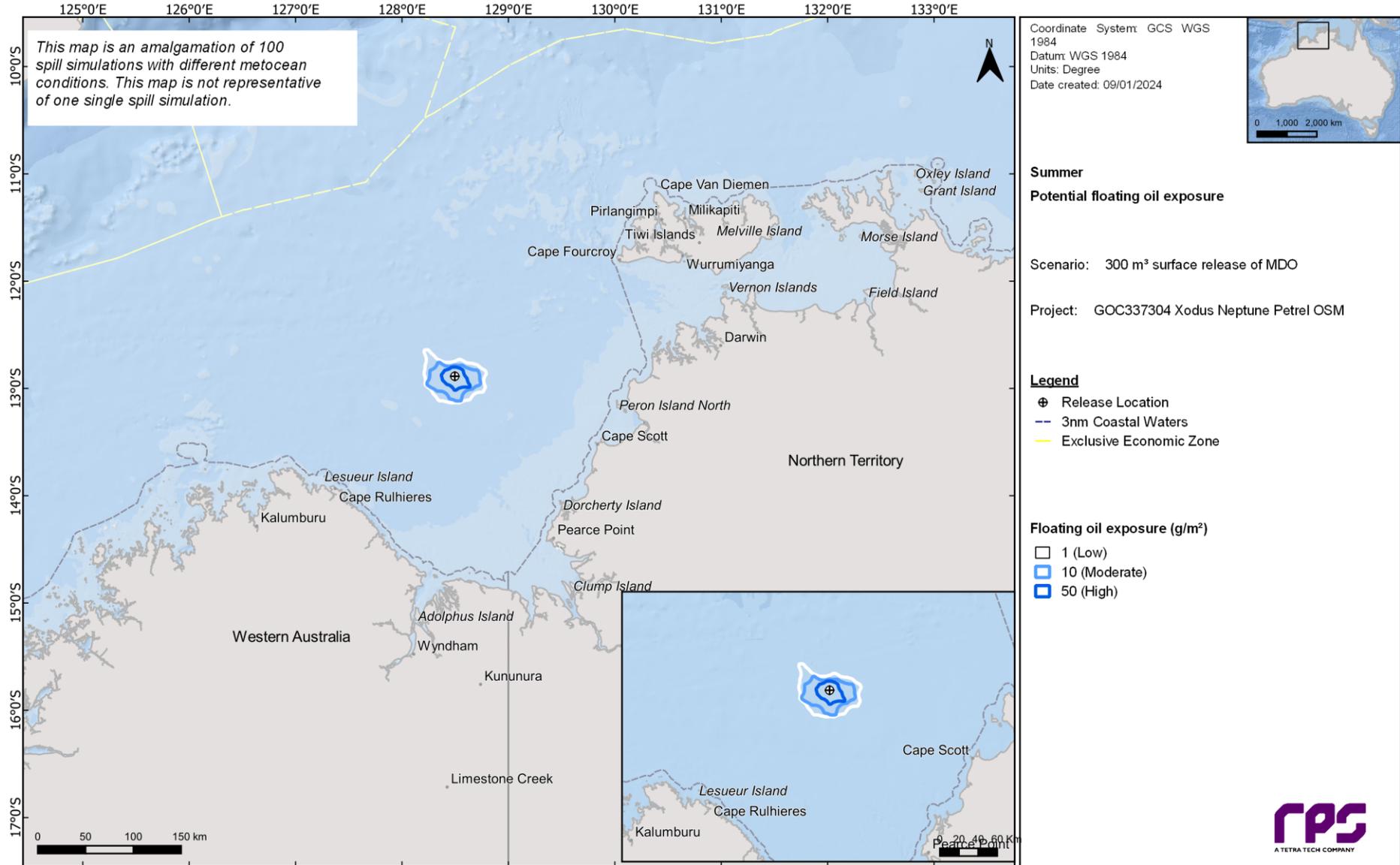


Figure 13.2 Zones of potential floating oil exposure from a surface vessel spill during summer conditions. The results were calculated from 100 spill simulations.

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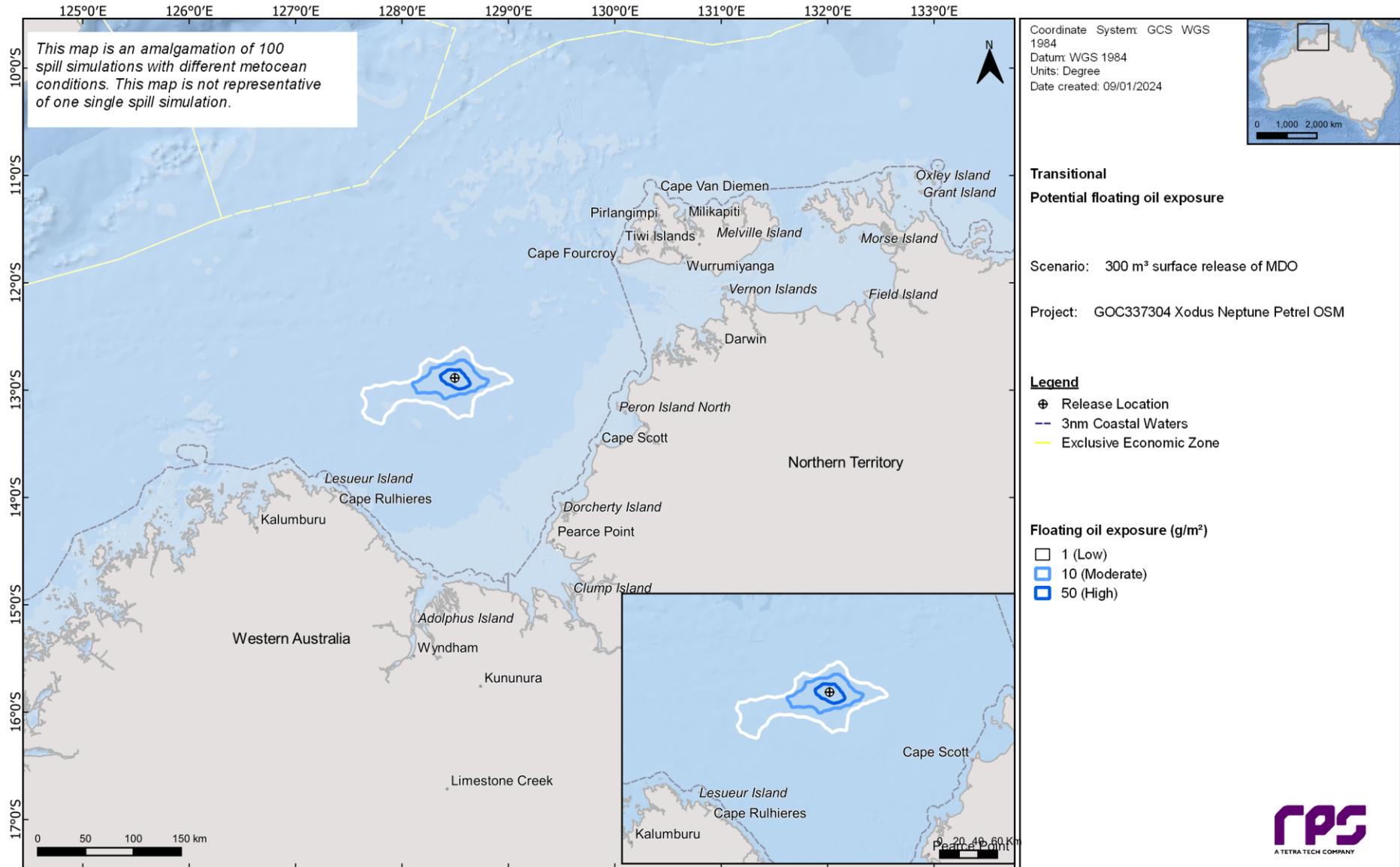


Figure 13.3 Zones of potential floating oil exposure from a surface vessel spill during transitional conditions. The results were calculated from 100 spill simulations.

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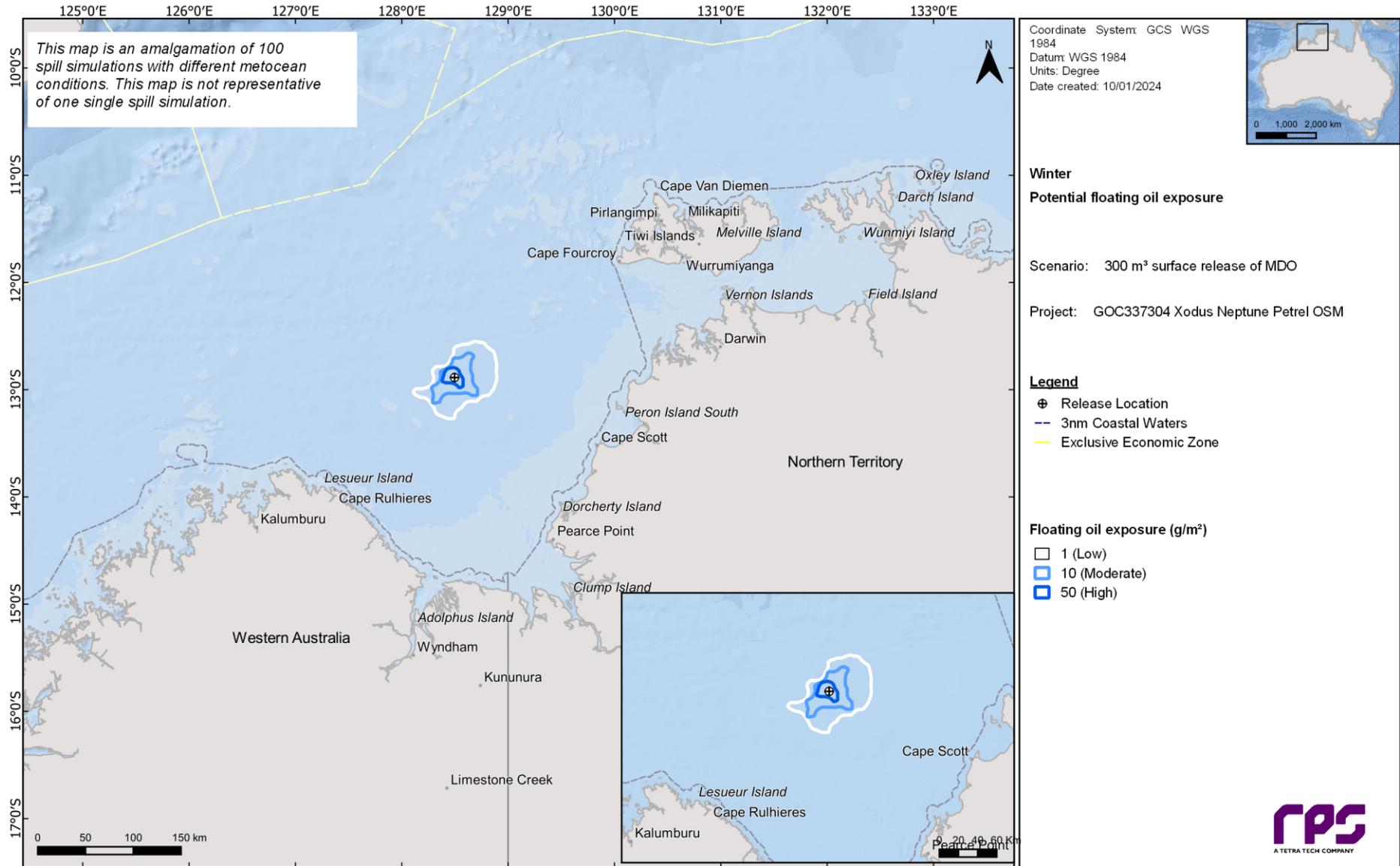


Figure 13.4 Zones of potential floating oil exposure from a surface vessel spill during winter conditions. The results were calculated from 100 spill simulations.

13.1.3 Shoreline accumulation

No oil accumulation on any shorelines was predicted to occur at, or above, the low threshold of 10 g/m² from the 300 spill simulations, and consequently, no results are reported.

13.1.4 In-water exposure

13.1.4.1 Dissolved Hydrocarbons

Table 13.3 summarises the maximum distances from the release location to dissolved hydrocarbons exposure thresholds. Concentrations exceeding 10 ppb may potentially occur up to 107 km from the release location, with the distance reducing to 42 km as the threshold increases to 50 ppb. No exposure was predicted as the threshold increased to 400 ppb.

Table 13.4 summarises the predicted dissolved hydrocarbon exposure to receptors (or above receptors in the water column) for each season. Only receptors predicted to be exposed at, or above, the low threshold have been presented.

No exposure was predicted to any receptor during transitional or winter conditions. During summer conditions the Oceanic Shoals IMCRA was the only receptor to experience exposure for concentrations exceeding 10 ppb (1%), 120 hours after the initial release.

The highest concentration of dissolved hydrocarbons was predicted for the Oceanic Shoals IMCRA during summer was 14 ppb.

Figure 13.5 to Figure 13.7 present the dissolved hydrocarbon exposure zones during each season.

Cross-sectional transects (north-south and east-west) of the maximum dissolved hydrocarbons in the vicinity of the release site are presented in Figure 13.8 to Figure 13.13. The dissolved hydrocarbons above 10 ppb were shown to occur to depths less than 40 m.

Table 13.3 Maximum distances from the release location to dissolved hydrocarbon exposure thresholds from a surface vessel spill during each season. Results were calculated from 100 spill simulations per season.

Season	Distance and direction travelled	Dissolved hydrocarbon exposure thresholds		
		10 ppb	50 ppb	400 ppb
Summer	Maximum distance (km) from release location	107	42	–
	Direction	Northeast	East	–
Transitional	Maximum distance (km) from release location	61	9	–
	Direction	Southwest	Southwest	–
Winter	Maximum distance (km) from release location	79	19	–
	Direction	West	Southwest	–

REPORT

Table 13.4 Summary of the dissolved hydrocarbon exposure to receptors from a surface vessel spill during each season. Results were calculated from 100 spill simulations per season.

Receptors		Summer						Transitional						Winter								
		Probability (%) dissolved hydrocarbon exposure at			Minimum time (hours) before dissolved hydrocarbon exposure at			Probability (%) dissolved hydrocarbon exposure at			Minimum time (hours) before dissolved hydrocarbon exposure at			Probability (%) dissolved hydrocarbon exposure at			Minimum time (hours) before dissolved hydrocarbon exposure at					
Category	Name	Highest dissolved concentration (ppb)	10 ppb	50 ppb	400 ppb	10 ppb	50 ppb	400 ppb	Highest dissolved concentration (ppb)	10 ppb	50 ppb	400 ppb	10 ppb	50 ppb	400 ppb	Highest dissolved concentration (ppb)	10 ppb	50 ppb	400 ppb	10 ppb	50 ppb	400 ppb
IMCRA	Oceanic Shoals	14	1	-	-	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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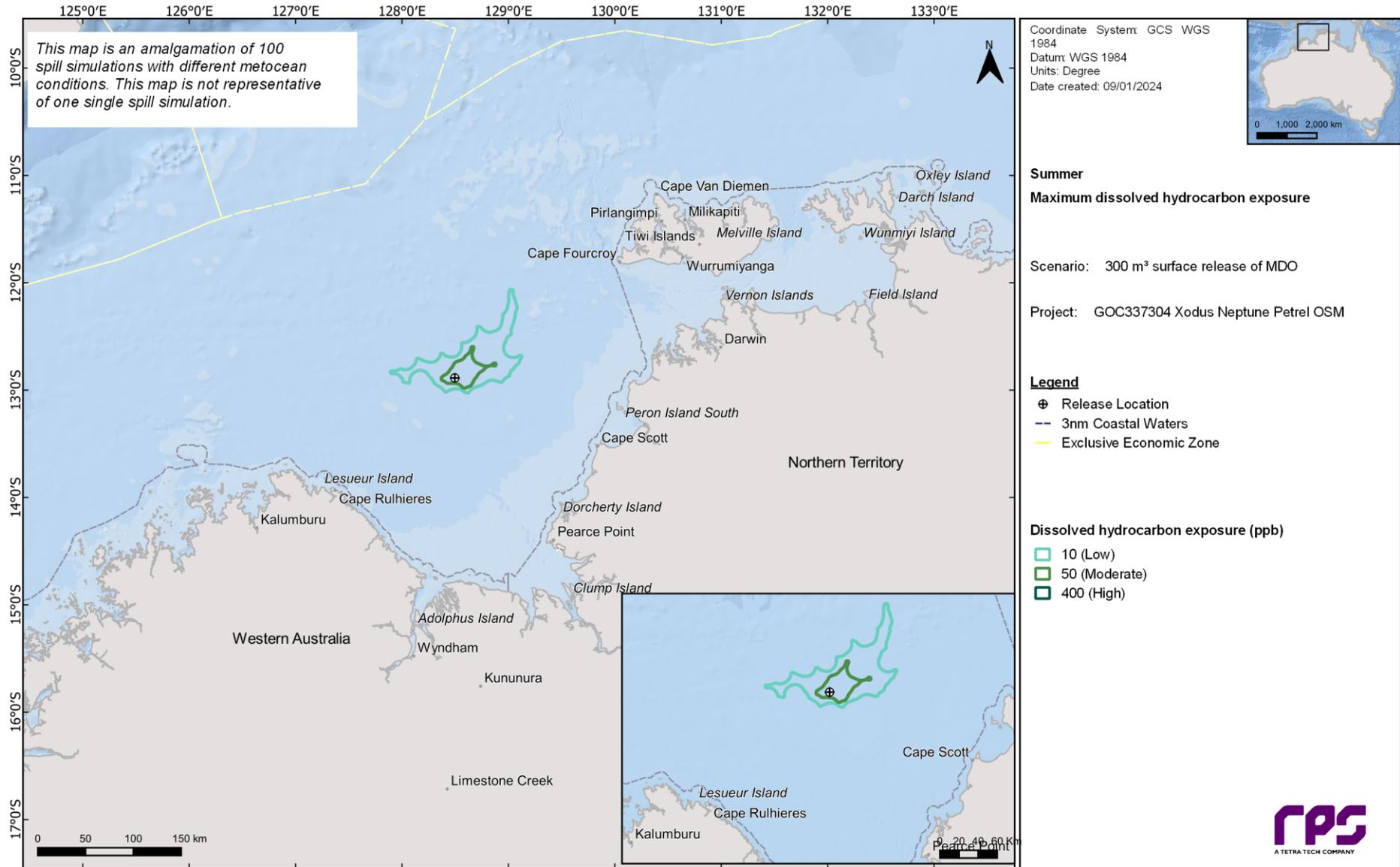


Figure 13.5 Predicted zones of dissolved hydrocarbon exposure from a surface vessel spill during summer conditions. The results were calculated from 100 spill simulations.

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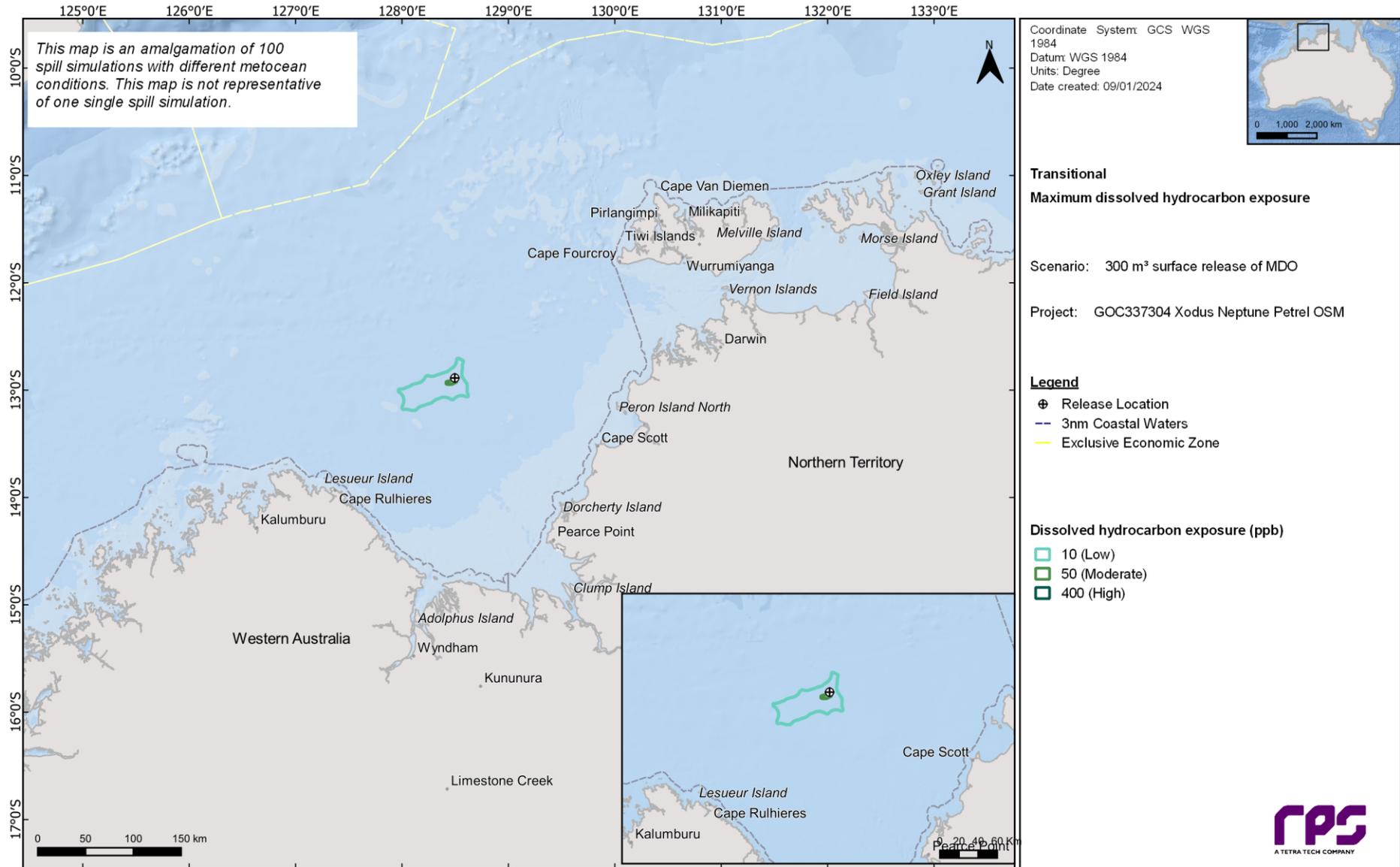


Figure 13.6 Predicted zones of dissolved hydrocarbon exposure from a surface vessel spill during transitional conditions. The results were calculated from 100 spill simulations.

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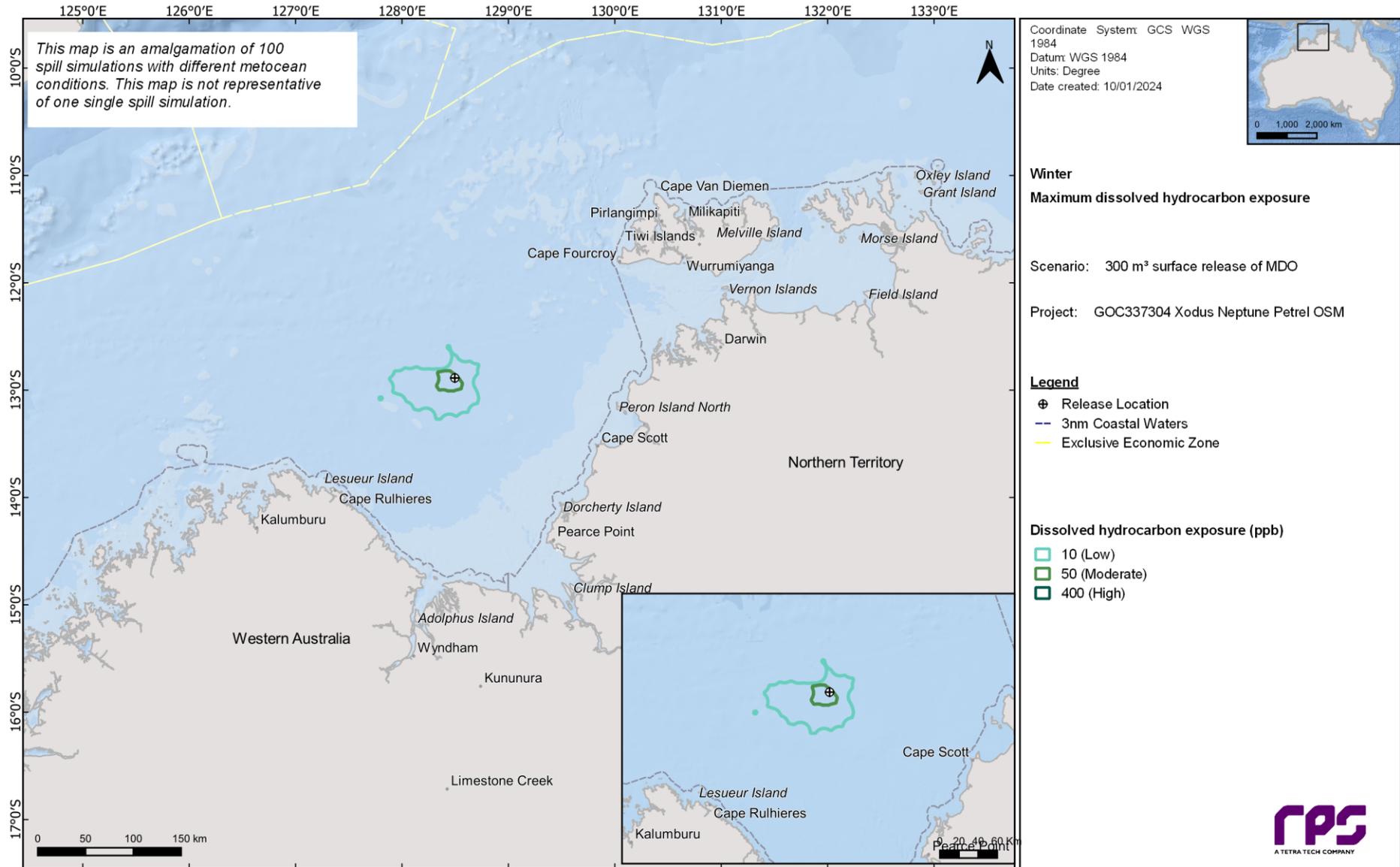


Figure 13.7 Predicted zones of dissolved hydrocarbon exposure from a surface vessel spill during winter conditions. The results were calculated from 100 spill simulations.



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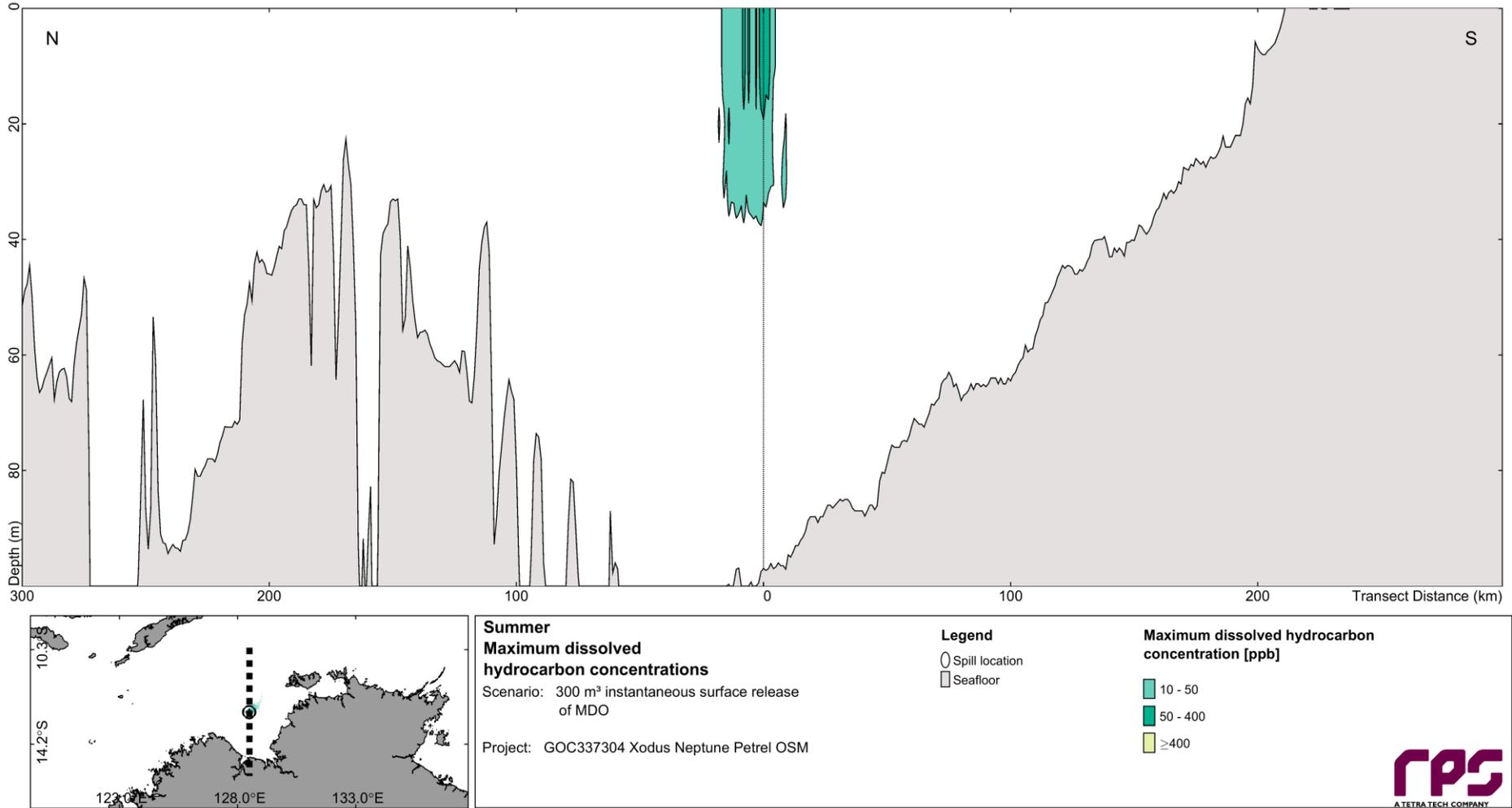


Figure 13.8 North-south cross-section transect of dissolved hydrocarbon concentrations from a surface vessel spill during summer conditions. The results were calculated from 100 spill simulations.

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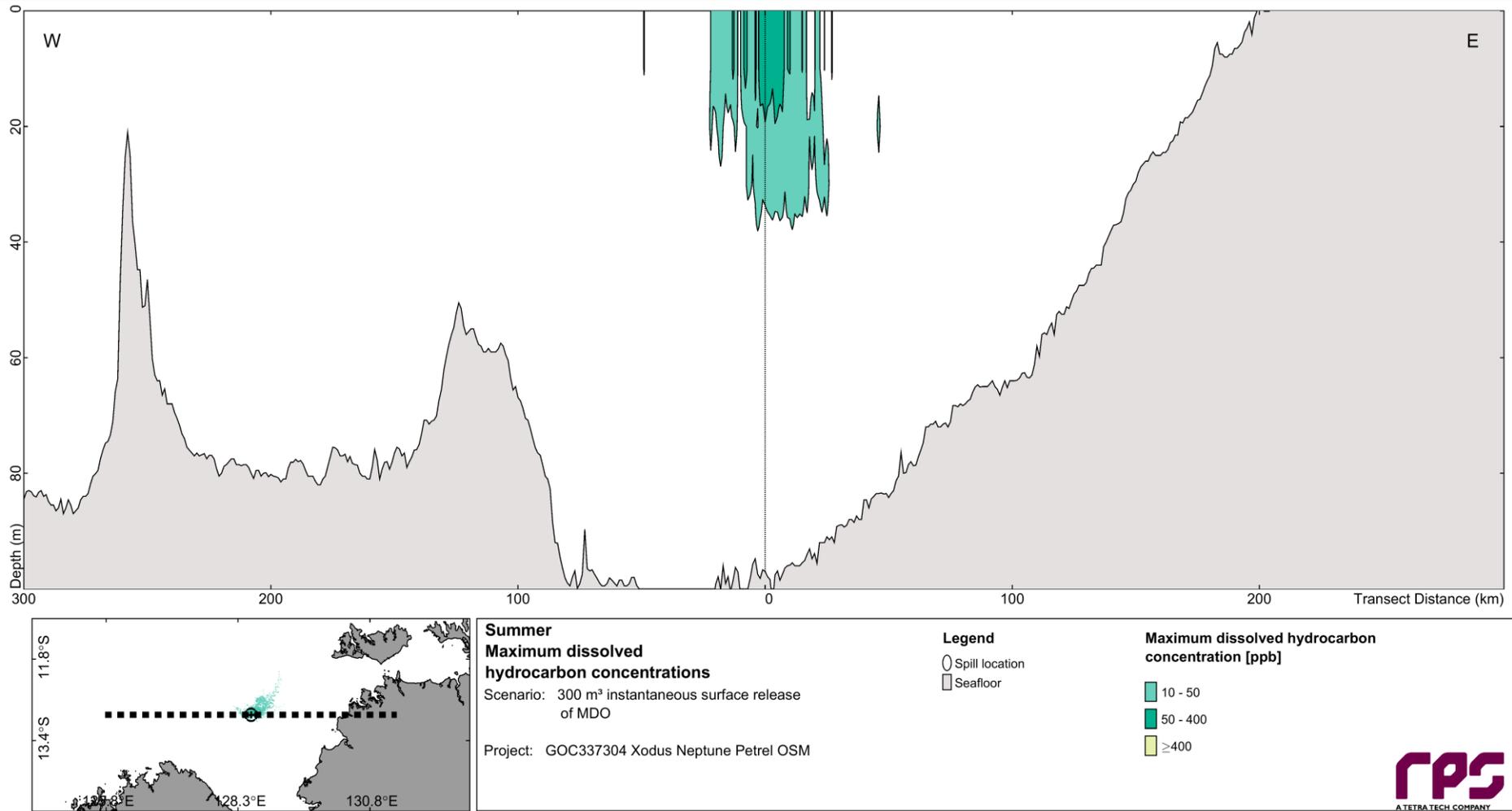


Figure 13.9 East-west cross-section transect of dissolved hydrocarbon concentrations from a surface vessel spill during summer conditions. The results were calculated from 100 spill simulations.

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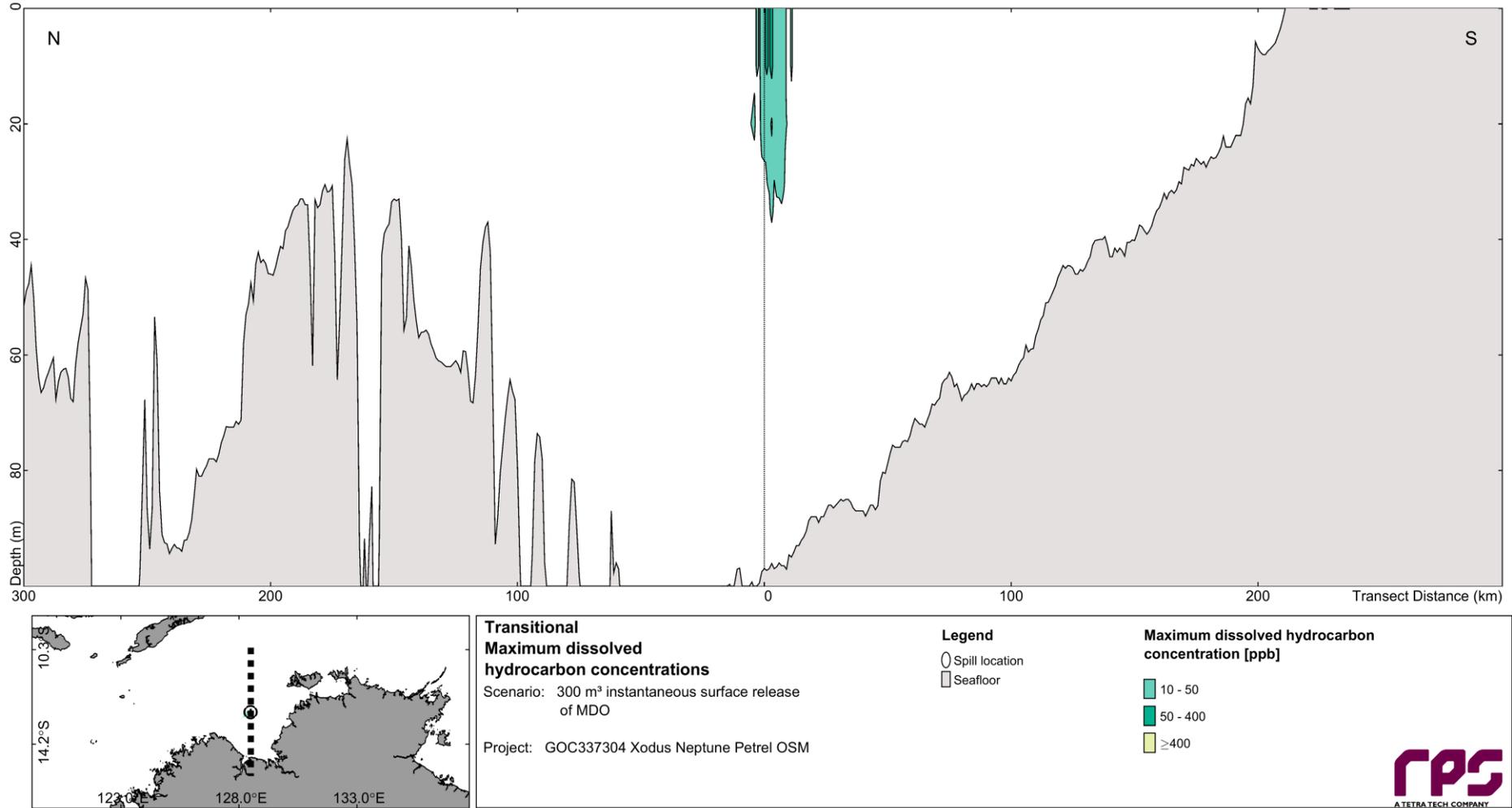


Figure 13.10 North-south cross-section transect of dissolved hydrocarbon concentrations from a surface vessel spill during transitional conditions. The results were calculated from 100 spill simulations.

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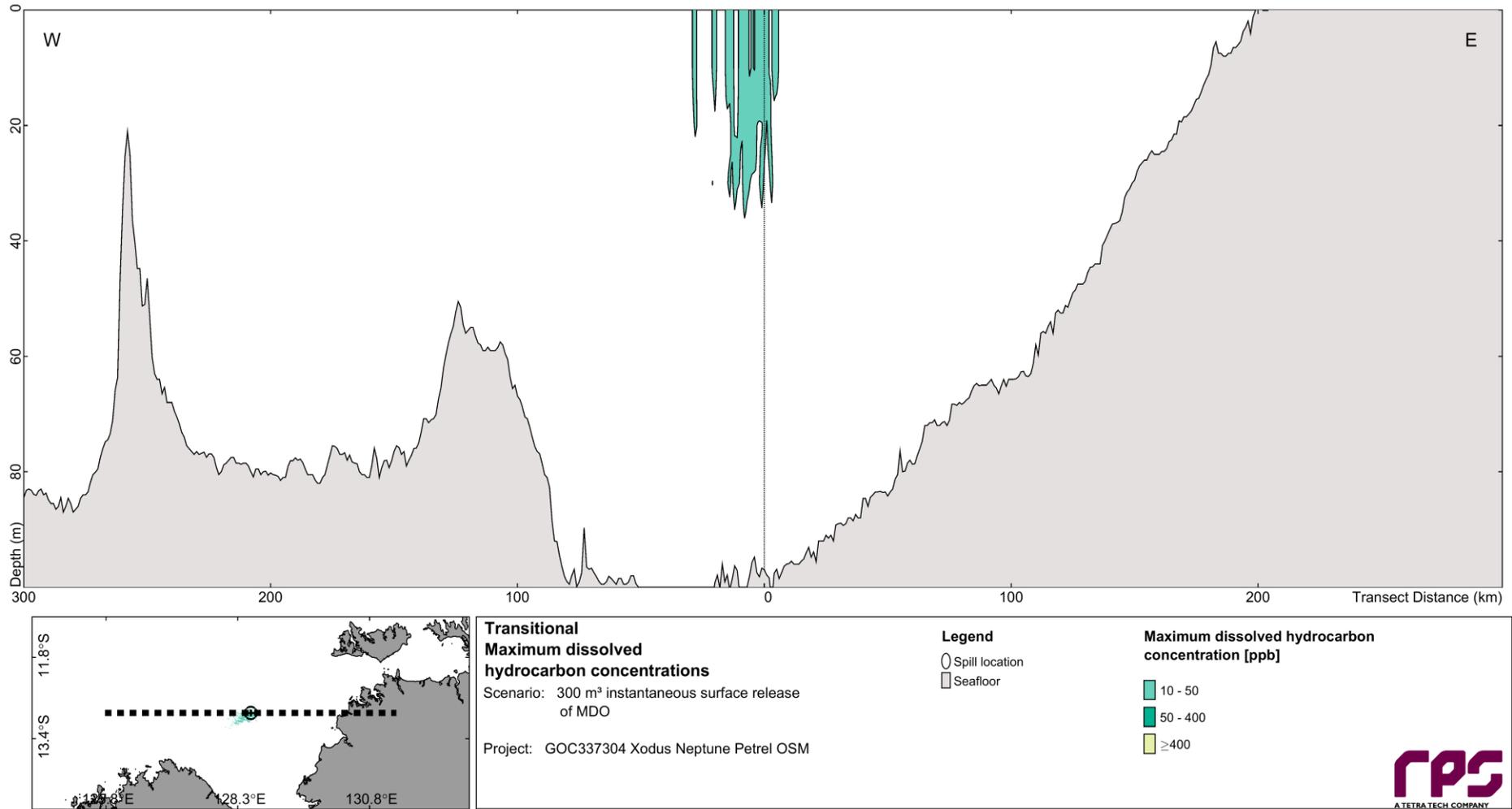


Figure 13.11 East-west cross-section transect of dissolved hydrocarbon concentrations from a surface vessel spill during transitional conditions. The results were calculated from 100 spill simulations.

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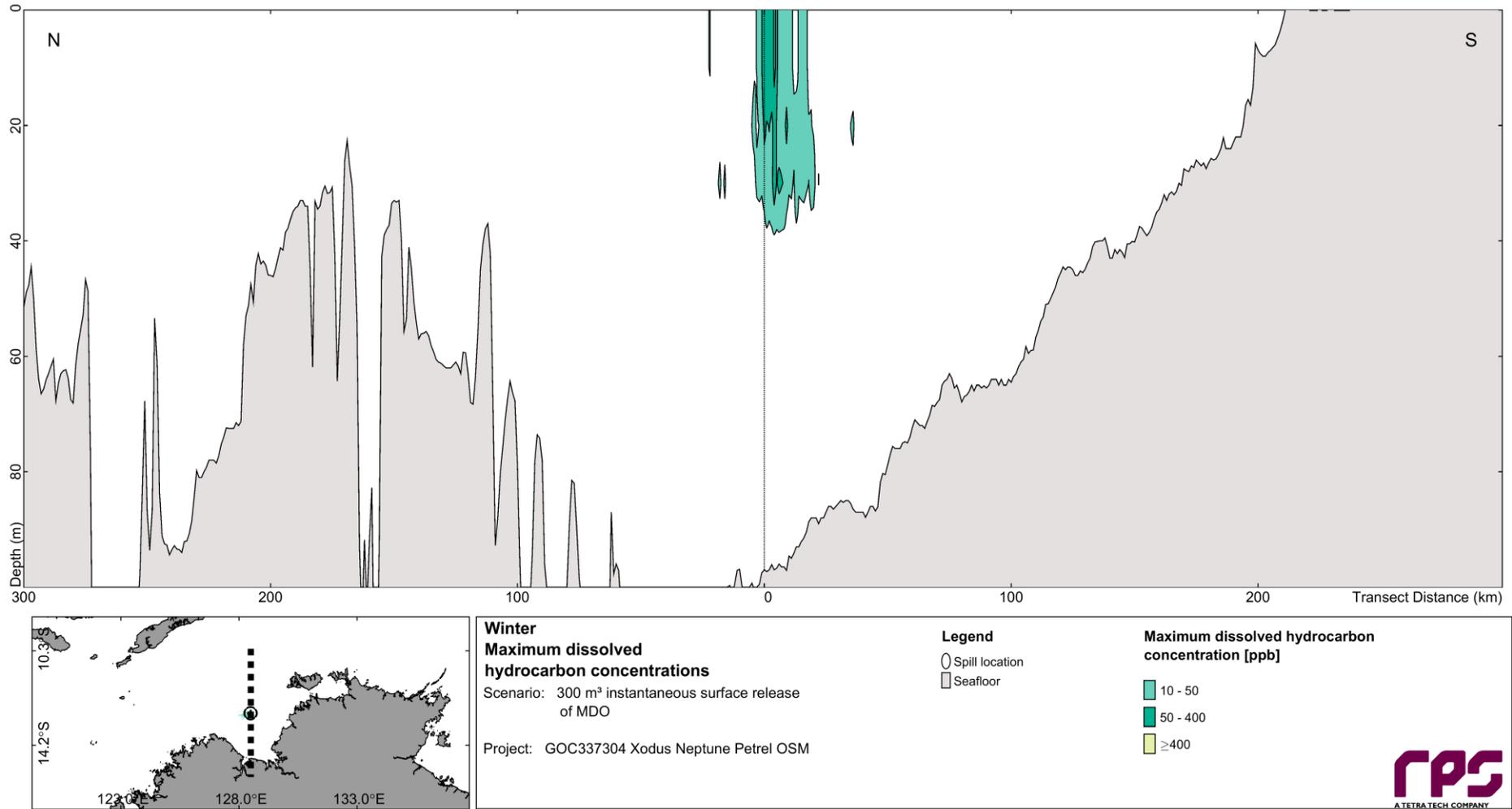


Figure 13.12 North-south cross-section transect of dissolved hydrocarbon concentrations from a surface vessel spill during winter conditions. The results were calculated from 100 spill simulations.

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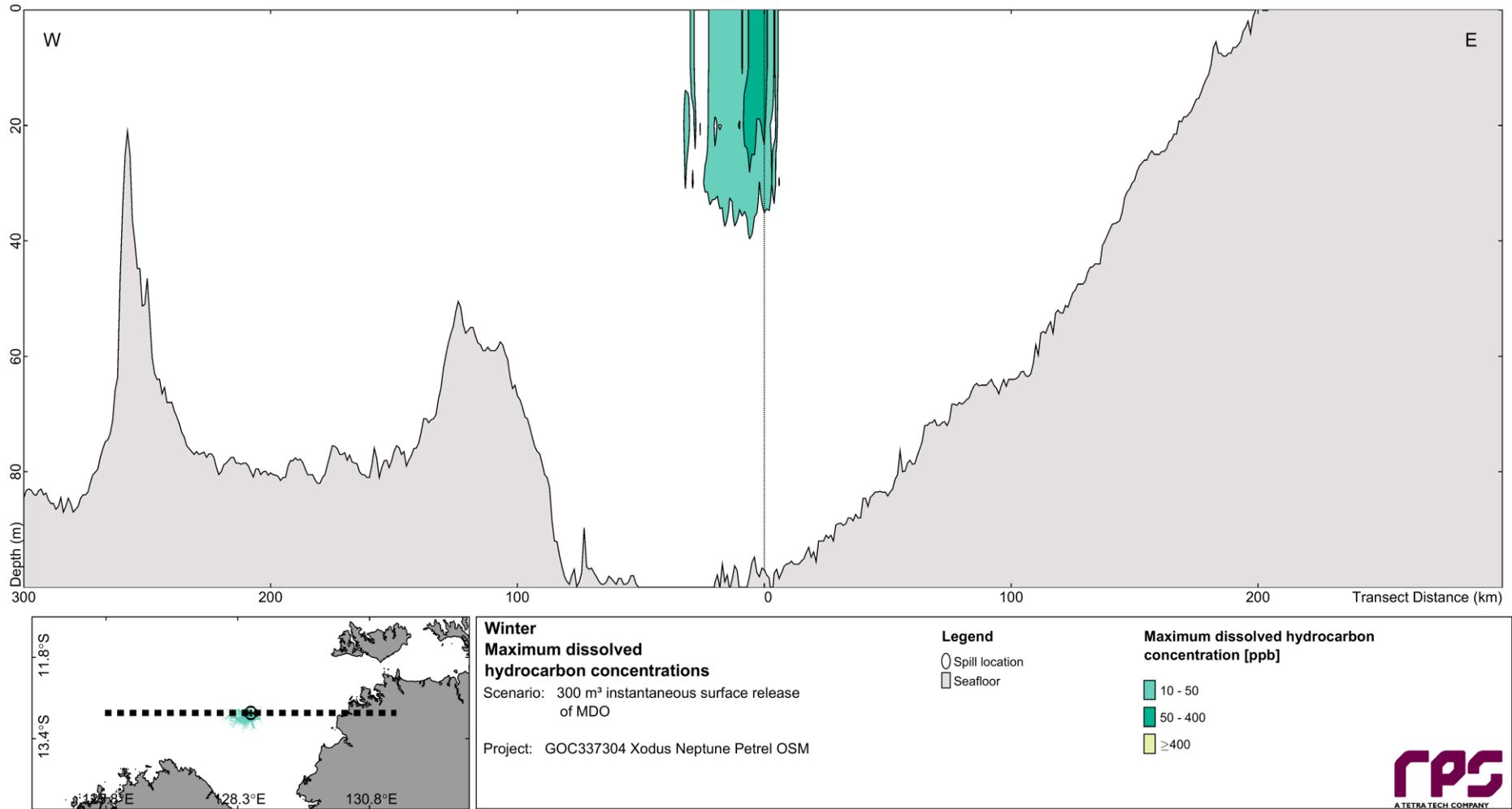


Figure 13.13 East-west cross-section transect of dissolved hydrocarbon concentrations from a surface vessel spill during winter conditions. The results were calculated from 100 spill simulations.

13.1.4.2 Entrained Hydrocarbons

Table 13.5 summarises the maximum distances from the release location to entrained hydrocarbon thresholds for each season. Concentrations exceeding 10 ppb may potentially occur up to 248 km from the release location, with the distance reducing to 87 km as the threshold increases to 100 ppb.

Table 13.6 summarises the predicted entrained hydrocarbon exposure to receptors (or above receptors in the water column) for each season. Only receptors predicted to be exposed at, or above, the low threshold have been presented.

During summer and transitional conditions, Oceanic Shoals IMCRA and Carbonate bank and terrace system of the Sahul Shelf KEF recorded the highest probabilities of exposure for concentrations exceeding 10 ppb 9% and 20%, respectively. Under winter conditions, the Pinnacles of the Bonaparte Basin KEF recorded the highest probability of exposure for concentrations exceeding 10 ppb at 24%.

The quickest time for exposure at, or above, 10 ppb was 58 hours for the Oceanic Shoals IMCRA during summer conditions.

The highest concentration of entrained hydrocarbons was predicted for the Oceanic Shoals IMCRA during summer (246 ppb) and winter (131 ppb) conditions. Carbonate bank and terrace system of the Sahul Shelf KEF recorded the highest concentration during transitional conditions at 97 ppb.

Figure 13.14 to Figure 13.16 present the entrained hydrocarbon exposure zones for each season.

Cross-sectional transects (north-south and east-west) of the maximum entrained hydrocarbons in the vicinity of the release site for each season, are presented in Figure 13.17 to Figure 13.22. The entrained hydrocarbons above 10 ppb were shown to occur to a depth of approximately 40 m.

Table 13.5 Maximum distances from the release location to entrained hydrocarbon exposure thresholds from a surface vessel spill during each season. Results were calculated from 100 spill simulations per season.

Season	Distance and direction travelled	Entrained hydrocarbon exposure thresholds	
		10 ppb	100 ppb
Summer	Maximum distance (km) from release location	191	87
	Direction	North	Northeast
Transitional	Maximum distance (km) from release location	248	68
	Direction	West	West
Winter	Maximum distance (km) from release location	226	82
	Direction	West	West

REPORT

Table 13.6 Summary of the entrained hydrocarbon exposure to receptors from a surface vessel spill during each season. Results were calculated from 100 spill simulations per season.

Category	Receptors Name	Summer					Transitional					Winter					
		Highest entrained concentration (ppb)		Probability (%) entrained hydrocarbon exposure at		Minimum time (hours) before entrained hydrocarbon exposure at	Highest entrained concentration (ppb)		Probability (%) entrained hydrocarbon exposure at		Minimum time (hours) before entrained hydrocarbon exposure at	Highest entrained concentration (ppb)		Probability (%) entrained hydrocarbon exposure at		Minimum time (hours) before entrained hydrocarbon exposure at	
		10 ppb	100 ppb	10 ppb	100 ppb	10 ppb	100 ppb	10 ppb	100 ppb	10 ppb	100 ppb	10 ppb	100 ppb	10 ppb	100 ppb	10 ppb	100 ppb
AMP	Kimberley	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Oceanic Shoals	42	4	–	120	–	24	3	–	132	–	26	4	–	241	–	–
IMCRA	Anson Beagle	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Arafura	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Kimberley	–	–	–	–	–	31	6	–	258	–	13	2	–	395	–	–
	Oceanic Shoals	246	9	1	58	68	78	7	–	107	–	131	8	1	82	114	–
KEF	Carbonate bank and terrace system of the Sahul Shelf	25	2	–	222	–	97	20	–	106	–	81	20	–	117	–	–
	Carbonate bank and terrace system of the Van Diemen Rise	21	1	–	222	–	–	–	–	–	–	–	–	–	–	–	–
	Pinnacles of the Bonaparte Basin	133	9	1	86	100	83	18	–	93	–	60	24	–	104	–	–
RSB	Flat Top Bank	54	4	–	153	–	–	–	–	–	–	–	–	–	–	–	–
	Newby Shoal	29	2	–	168	–	–	–	–	–	–	–	–	–	–	–	–

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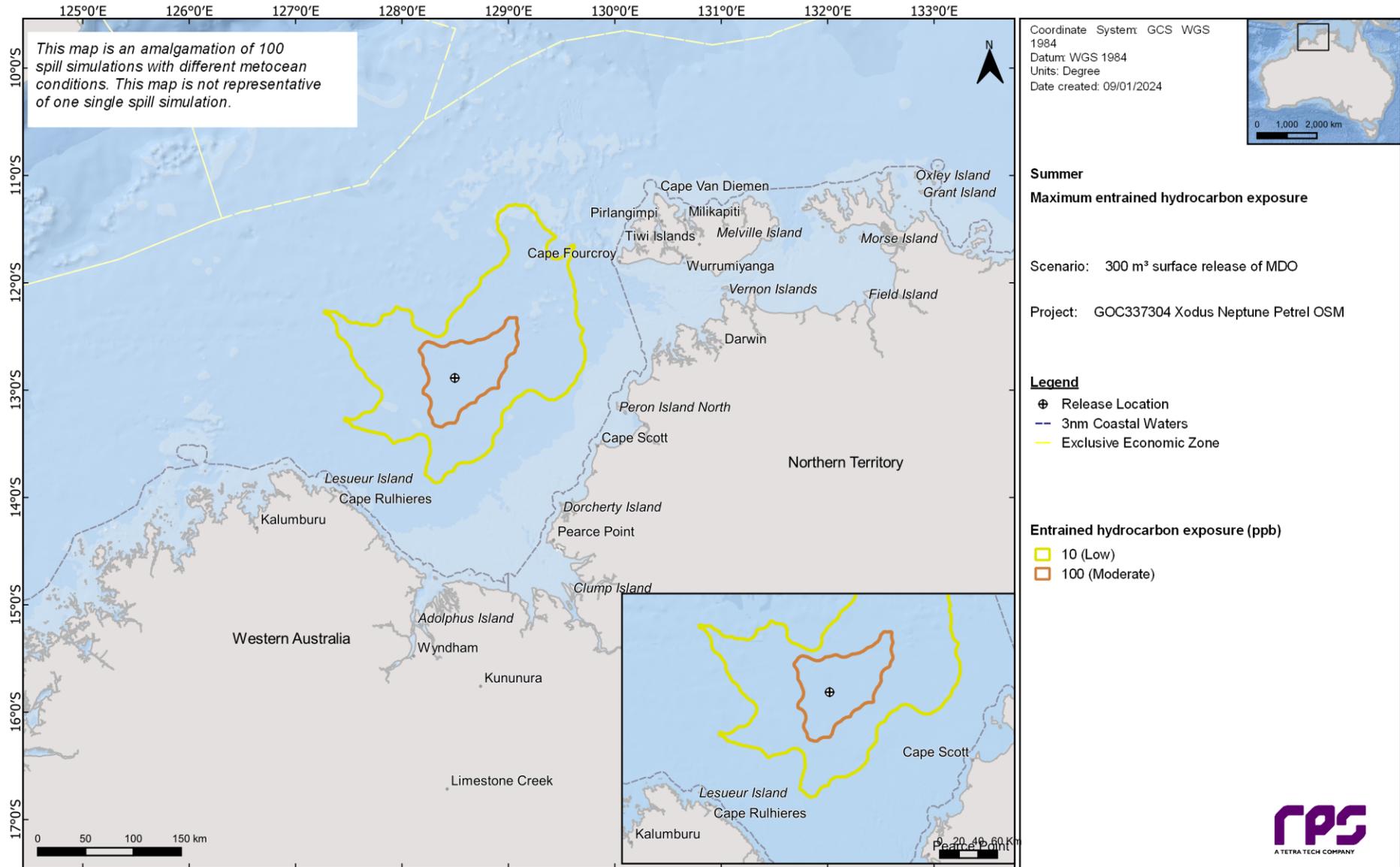


Figure 13.14 Predicted zones of entrained hydrocarbon exposure from a surface vessel spill during summer conditions. The results were calculated from 100 spill simulations.

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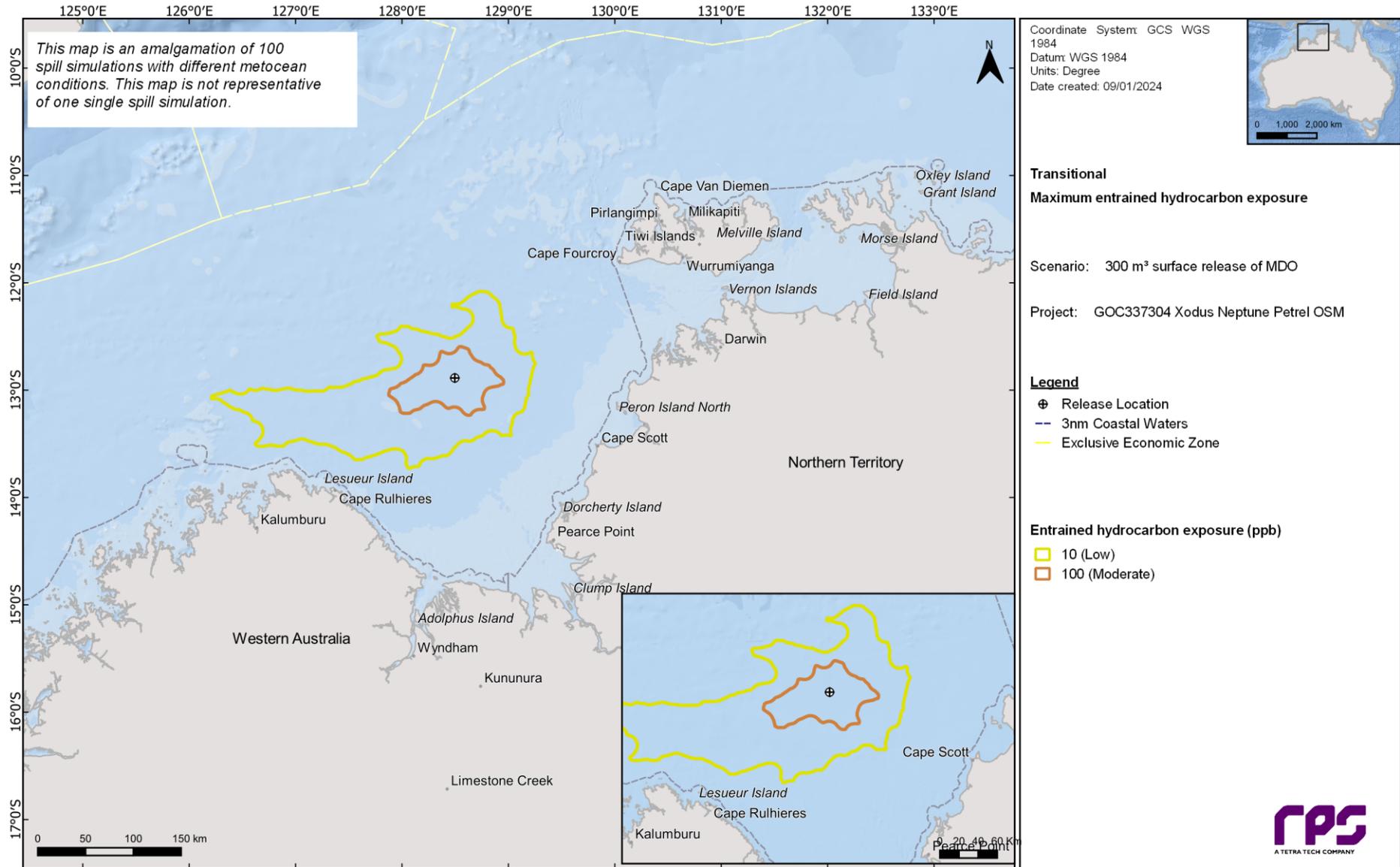


Figure 13.15 Predicted zones of entrained hydrocarbon exposure from a surface vessel spill during transitional conditions. The results were calculated from 100 spill simulations.



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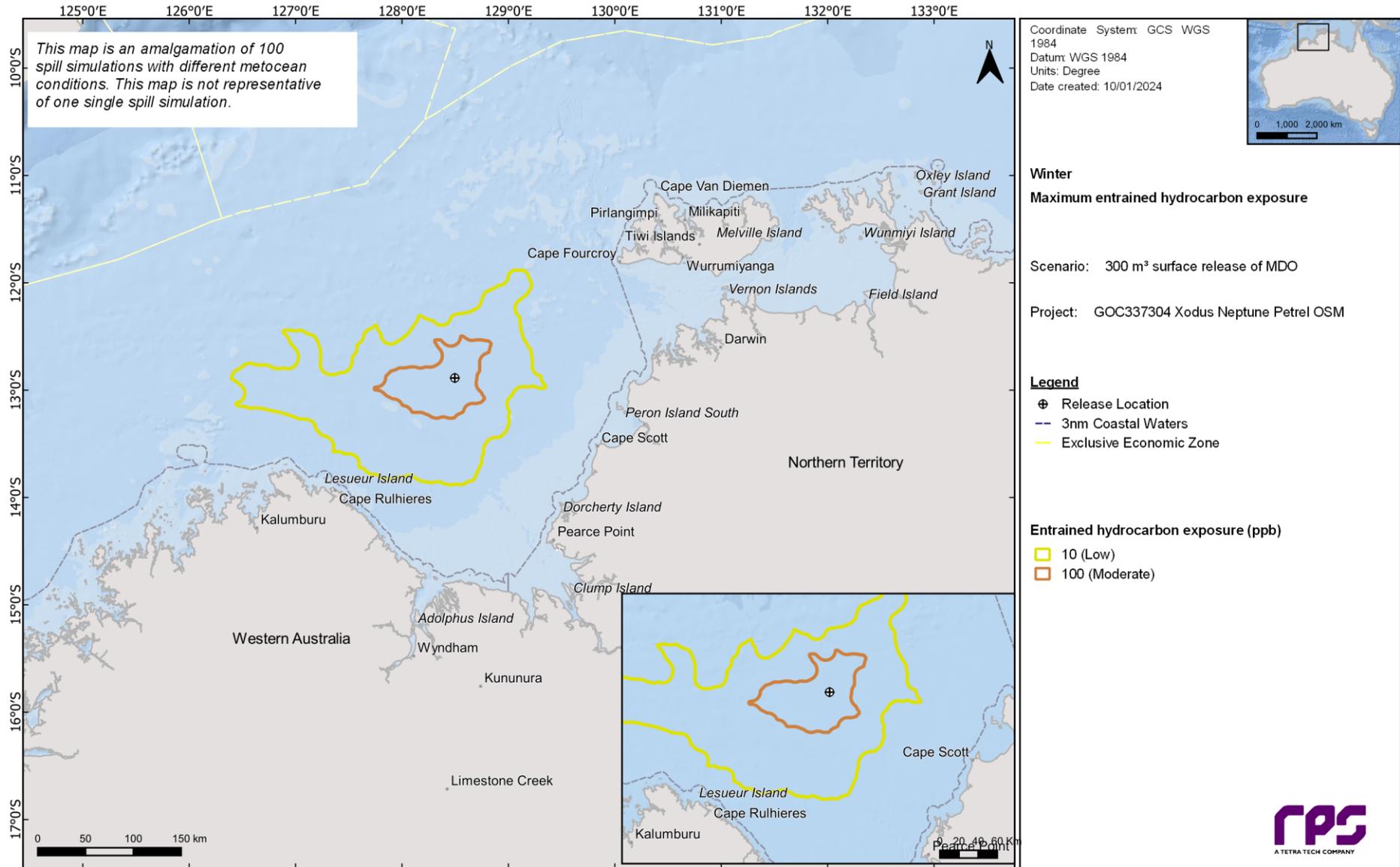


Figure 13.16 Predicted zones of entrained hydrocarbon exposure from a surface vessel spill during winter conditions. The results were calculated from 100 spill simulations.



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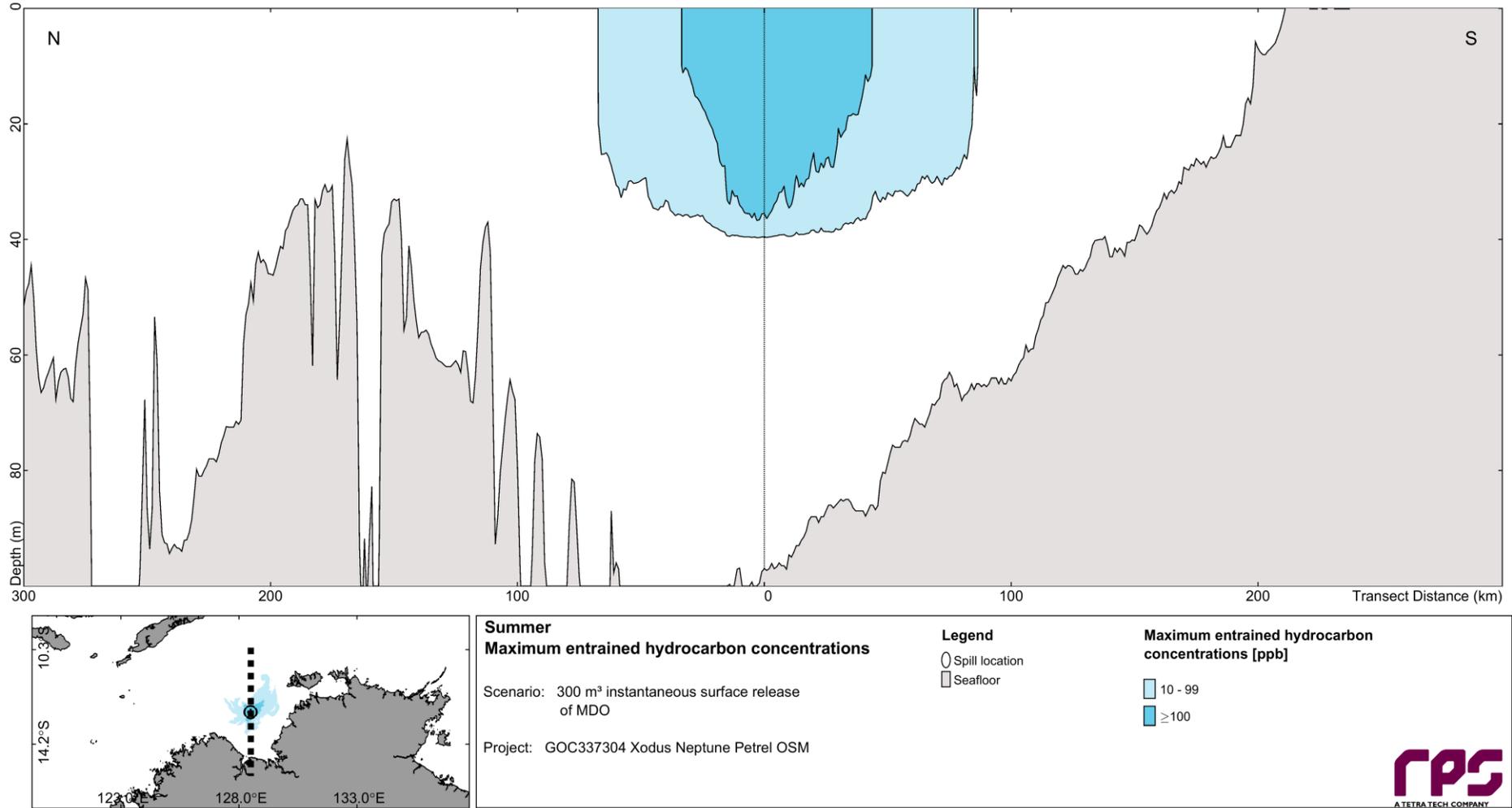


Figure 13.17 North-south cross-section transect of entrained hydrocarbon concentrations from a surface vessel spill during summer conditions. The results were calculated from 100 spill simulations.

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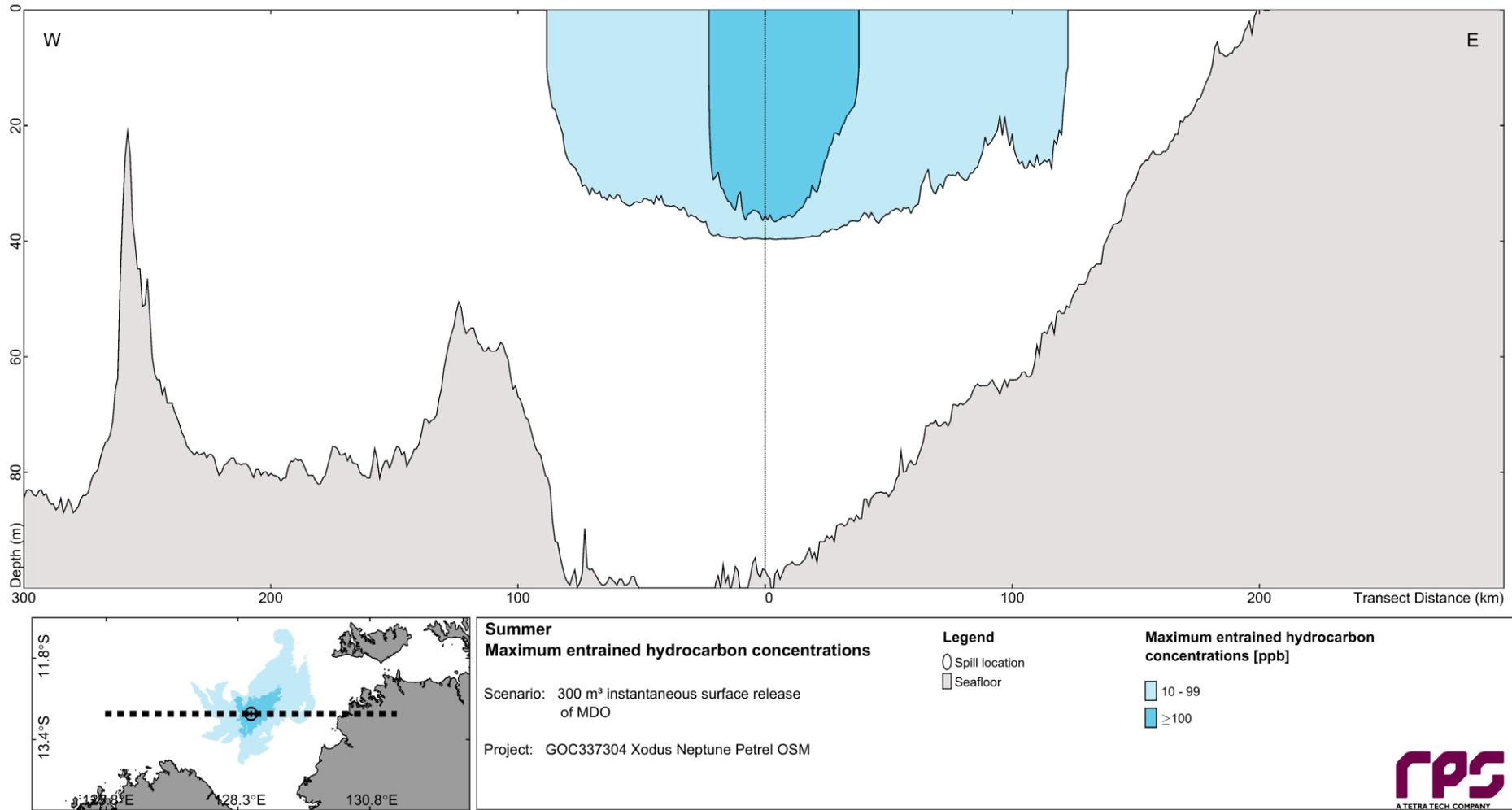


Figure 13.18 East-west cross-section transect of entrained hydrocarbon concentrations from a surface vessel spill during summer conditions. The results were calculated from 100 spill simulations.

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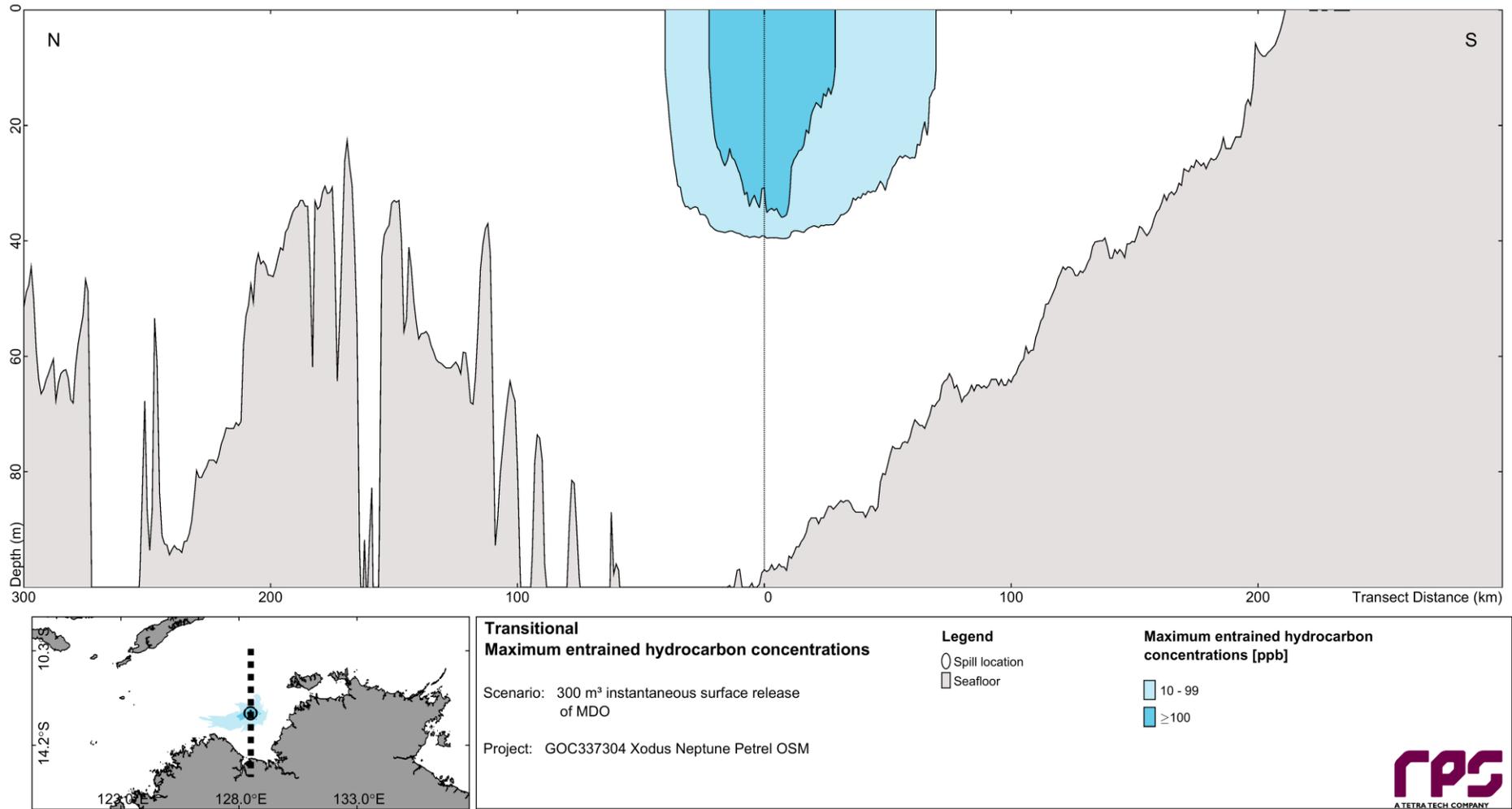


Figure 13.19 North-south cross-section transect of entrained hydrocarbon concentrations from a surface vessel spill during transitional conditions. The results were calculated from 100 spill simulations.

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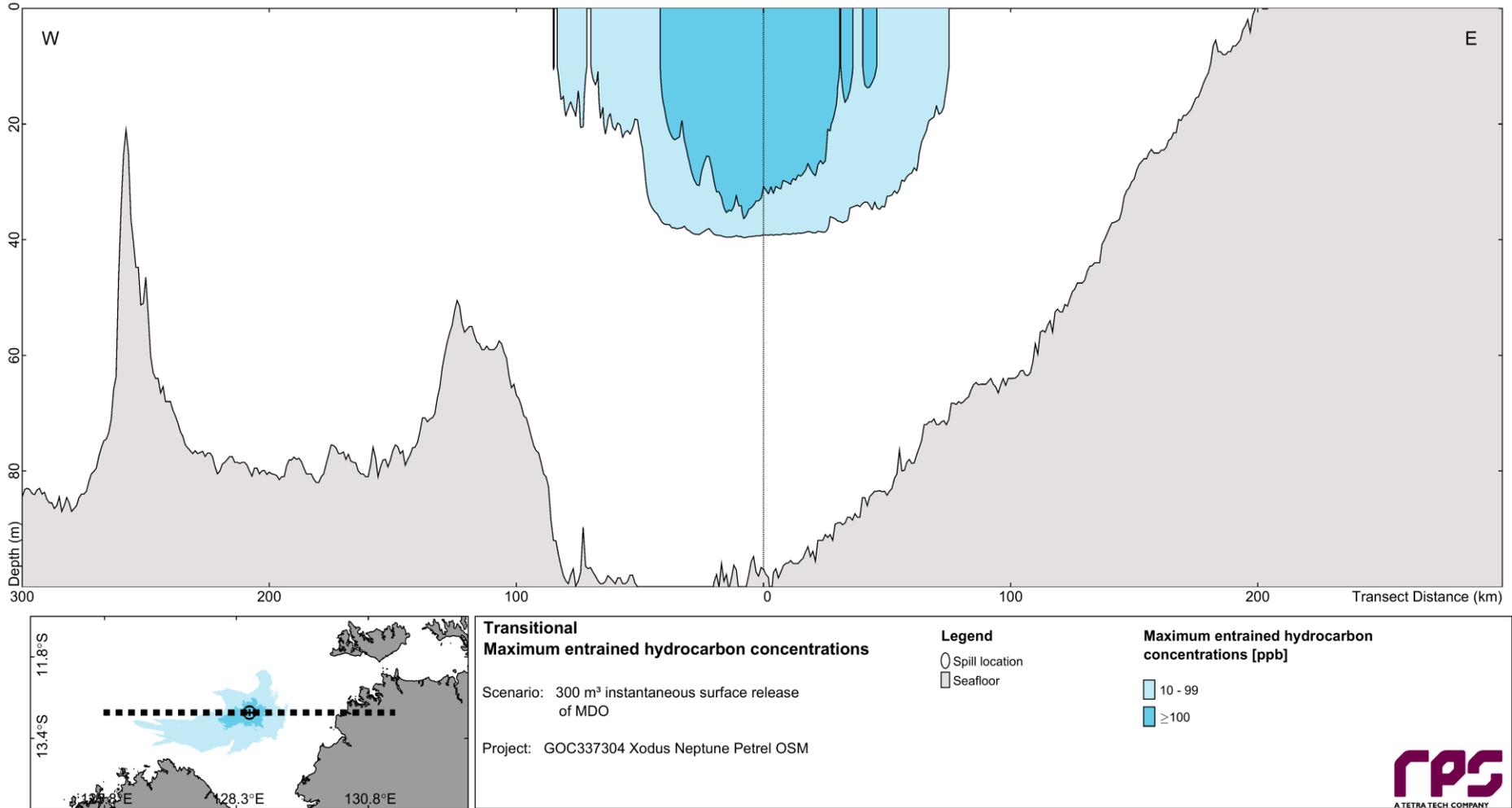


Figure 13.20 East-west cross-section transect of entrained hydrocarbon concentrations from a surface vessel spill during transitional conditions. The results were calculated from 100 spill simulations.

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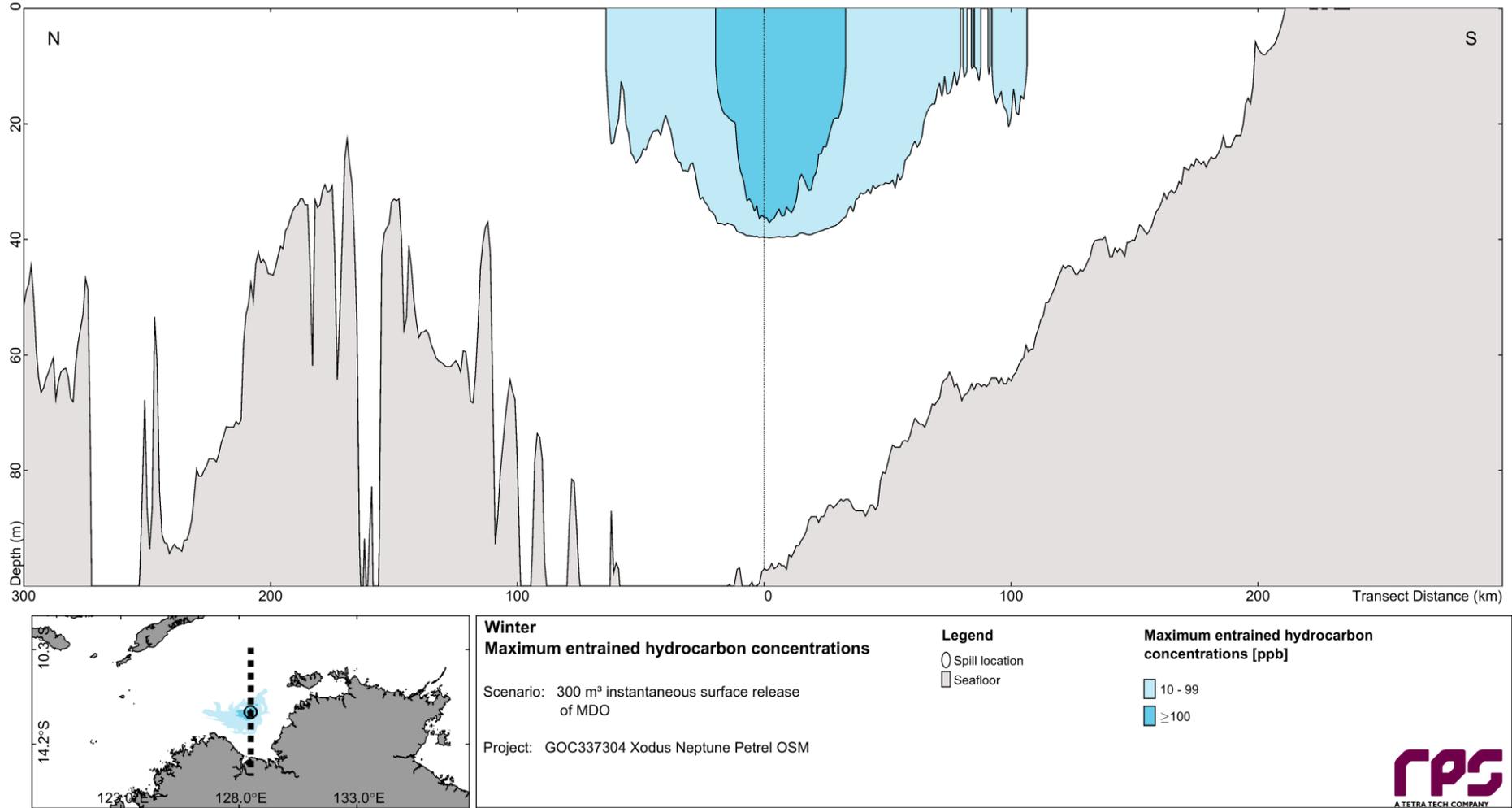


Figure 13.21 North-south cross-section transect of entrained hydrocarbon concentrations from a surface vessel spill during winter conditions. The results were calculated from 100 spill simulations.

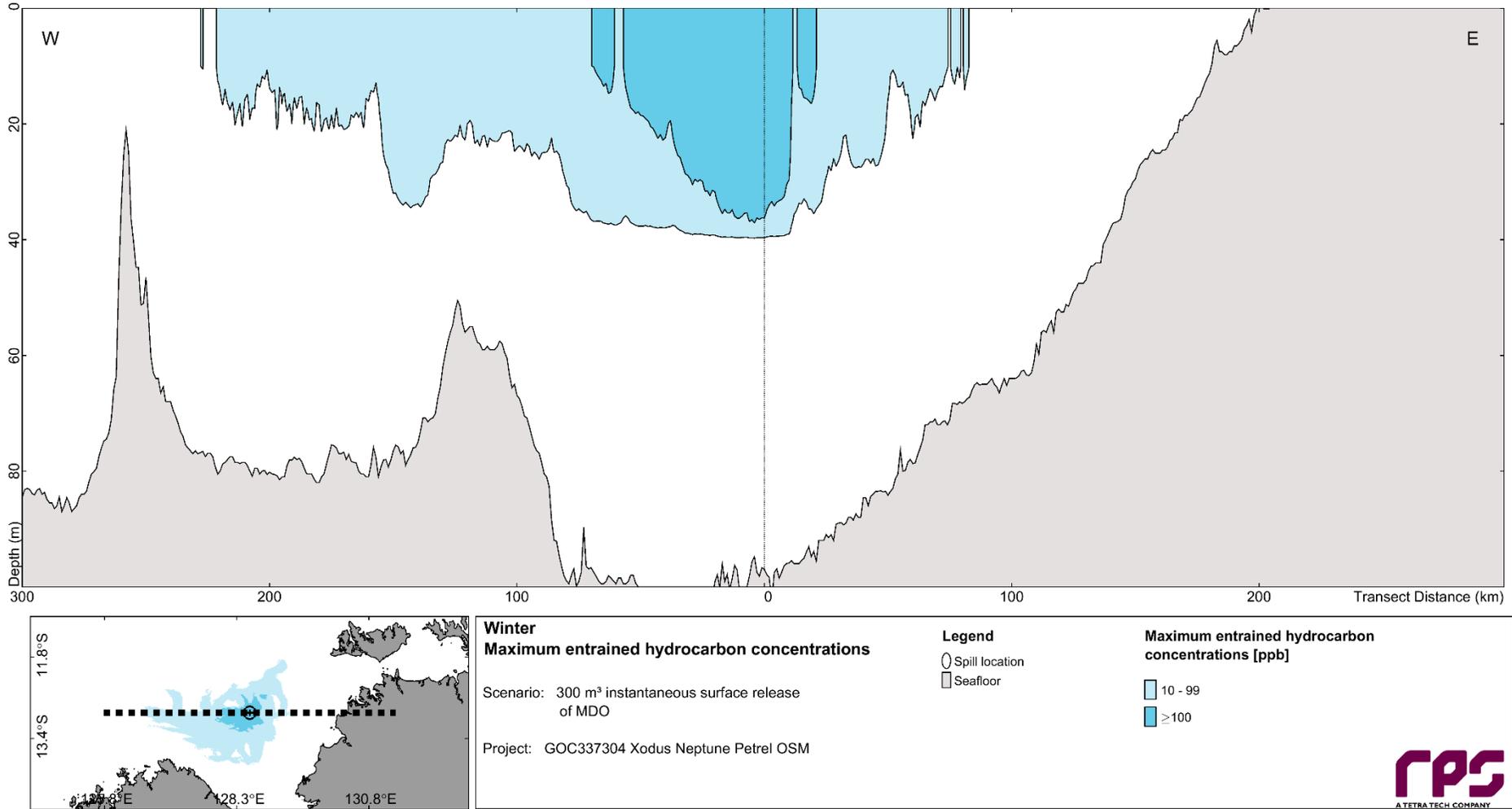


Figure 13.22 East-west cross-section transect of entrained hydrocarbon concentrations from a surface vessel spill during winter conditions. The results were calculated from 100 spill simulations.

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			Validity Status	Rev. No. B	

Appendix E: OPEP

PETREL-3 AND PETREL-4 MONITORING AND DECOMMISSIONING OIL POLLUTION EMERGENCY PLAN

**IN THE EVENT OF AN OIL SPILL GO DIRECTLY TO SECTION 1
(FIRST STRIKE PLAN) AND COMPLETE THE NOTIFICATIONS
AND RELEVANT ACTIONS.**

**ADDITIONAL SUPPORTING INFORMATION THAT MAY
INFORM THE RESPONSE IS PRESENTED IN SECTIONS 2 – 8.**

PR-OP	0	09/09/2024	Issued for submission	Xodus	JCO	LGI		
PR-OP	A	21/08/2024	Issued for review	Xodus	JCO	JCO		
Validity Status	Rev. Number	Date	Description	Prepared by	Checked by	Approved by	Contractor Approval	Company Approval
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TABLE OF CONTENTS

ACRONYMS AND DEFINITIONS	7
1 FIRST STRIKE PLAN	10
1.1 Notifications	16
1.2 Escalation and De-Escalation of Response Levels	18
1.2.1 Spill Response Levels	18
1.2.2 Initial OPEP activations for a Level 1 spill	19
1.2.3 Initial OPEP activations for a Level 2/3 spill	21
1.3 Mobilisation of Response Strategies	21
1.3.1 Operational and Scientific Monitoring	23
2 OIL POLLUTION EMERGENCY PLAN OVERVIEW	24
2.1 Scope	24
2.2 High-Level Objectives of OPEP	25
2.3 Interface with External Plans	25
2.4 Interface with Internal Documents	25
2.5 Incident Action Plan	26
3 RESOURCES AND MOBILISATION SUMMARY	29
3.1 AMOSC, OSRL and AMSA Resources Available	29
3.2 Logistics Resources	31
3.3 Aircraft Resources	31
3.4 Vessel Resources	32
3.5 Labour Hire	33
4 OPEP REQUIREMENTS AND LEGISLATIVE FRAMEWORK	34
4.1 Jurisdictional Authorities and Control Agencies	34
4.2 Relevant Authorities	36
4.2.1 Response to Vessel spills in Commonwealth Waters	36
4.2.2 NOPSEMA	37
4.2.3 AMOSC	37
4.2.4 AMSA	38
4.2.5 OSRL	38
5 ENI INCIDENT AND CRISIS MANAGEMENT STRUCTURE	42
5.1 ICM Organisational Structure	42
5.2 Chain of Command	42

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 3 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

5.3	Activation	43
5.4	Site Response	44
5.5	Location of the Incident Management Team	44
5.6	Incident Management Team	44
5.6.1	IMT and Support Resourcing	45
5.6.2	IMT Capability	46
5.6.3	Roles and Responsibilities.....	47
5.6.4	Verification of IMT Resourcing and Training	48
5.6.5	Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria	49
5.7	Coordination with Other Organisations	49
5.7.1	Advisory Capacity	49
5.7.2	Off Scene Liaison.....	50
5.8	Management of Public Information	51
6	IDENTIFIED SPILL RISKS	52
6.1	Credible Spill Scenario.....	52
6.2	Marine Diesel Oil.....	52
6.3	Hydrocarbon Spill Modelling	53
6.4	Weathering and Fate.....	53
6.5	Response Planning Thresholds.....	56
6.6	Hydrocarbon Spill Modelling Results	57
7	NET ENVIRONMENTAL BENEFIT ANALYSIS	63
7.1	Pre-operational NEBA	63
7.2	Operational NEBA	67
8	RESPONSE STRATEGIES.....	68
8.1	Source Control	69
8.1.1	Overview	69
8.1.2	Response	69
8.1.3	Termination Criteria.....	69
8.1.4	Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria	70
8.2	Monitor and Evaluate	70
8.2.1	Overview	70
8.2.2	Capability and Resources	71
8.2.3	Oil Spill Trajectory Modelling.....	74
8.2.4	Satellite Tracking Buoys	74
8.2.5	Vessel Surveillance	74
8.2.6	Aerial Surveillance.....	75

	eni australia	Company document identification	Owner document identification		Rev. index.		Sheet of sheets 4 / 140
		000694_DV_ES.HSE.0285.000_00	Validity Status	Rev. No.			
					PR-OP	0	

8.2.7	Satellite Monitoring.....	76
8.2.8	Termination Criteria.....	77
8.2.9	Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria	78
8.3	Oiled Wildlife Response.....	79
8.3.1	Overview	79
8.3.2	Capability and Resources	79
8.3.3	Response Activities.....	83
8.3.4	Termination Criteria.....	83
8.3.5	Response Required and Adequacy	83
8.3.6	Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria	84
8.4	Operational and Scientific Monitoring Program.....	84
8.4.1	Operational Monitoring Programs	84
8.4.2	Scientific Monitoring Programs	85
8.4.3	Mobilisation	86
8.4.4	Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria	86
8.5	Spill Response Termination	86
9	TRAINING, EXERCISE AND AUDIT	87
9.1	CMT/IMT Training	87
9.2	Oil Spill Responders	88
9.3	Competency of Vessel Contractors	89
9.4	Oil spill response organisations.....	89
9.5	Testing Arrangements	89
9.6	Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria	92
10	OPEP REVIEW AND AUDITS	94
10.1	OPEP Consultation	94
11	REFERENCES.....	95

TABLES

Table 1-1:	Notifications by the IMT if activated (Level 2/3)	16
Table 1-2:	Escalation and de-escalation triggers for oil spill response.....	18
Table 1-3:	Eni oil spill response levels.....	19

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Table 1-4: Activations for Level 1 spills	20
Table 1-5: Activations for Level 2/3 spills response.....	21
Table 1-6: NEBA summary and operational plans for response strategies – Level 1	22
Table 1-7: NEBA summary and operational plans for response strategies – Level 2/3.....	22
Table 2-1: Associated External Plans.....	25
Table 2-2: Eni Crisis and Emergency Management Plans	26
Table 2-3: Incident Action Plan procedure	27
Table 3-1: Resource and mobilisation overview	29
Table 3-2: Aircraft resources	32
Table 4-1: Relevant Commonwealth legislation	34
Table 4-2: Marine oil pollution arrangements for spills in Commonwealth waters	36
Table 4-3: Triggers for Jurisdictional Authorities and support organisations to join the Eni IMT.....	36
Table 4-4: OSRL Service Level Agreement.....	38
Table 4-5: OSRL and AMOSC mobilisation & nominated call-out authority	41
Table 5-1: Activation of levels in the ICM organisation	43
Table 5-2: Main responsibilities of key roles involved in an oil spill response	47
Table 6-1: Petrel-3 and Petrel-4 Monitoring and Decommissioning Worst Credible Spill Scenarios.....	52
Table 6-2: Physical properties MDO	52
Table 6-3: Boiling point ranges for MDO	53
Table 6-4: Summary of parameters and justifications for marine diesel spill modelling	53
Table 6-5: Hydrocarbon thresholds for response planning	56
Table 6-6: Maximum distances from the release location to floating hydrocarbon exposure thresholds for surface spill of MDO (RPS 2024).	58
Table 6-7: Summary of the stochastic modelling results of floating hydrocarbon exposure to receptors for a MDO spill during each season. Results were calculated from 100 spill simulations per season (RPS 2024).....	59
Table 7-1: NEBA summary and response option considerations.....	64
Table 8-1: Monitor and evaluate strategy summary	72
Table 8-2: Oiled wildlife stockpiles available to Eni	79
Table 8-3: Oiled wildlife strategy summary.....	81
Table 8-4: Operational Monitoring Programs	85
Table 8-5: Scientific Monitoring Programs.....	85
Table 9-1: Minimum oil spill response training requirements for Eni.....	87
Table 9-2: Testing arrangements plan and objectives	91

FIGURES

Figure 3-1: Logistics map with aerial support bases, response times	30
Figure 5-1: The ICM organisation's principal duties and timescales	42

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 6 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Figure 5-2: Incident and crisis management organisation chain of command	42
Figure 5-3: IMT and Support Teams for Oil Spill Response operation.....	45
Figure 5-4: Advisory capacity to IMT.....	50
Figure 5-5: Principle of liaison when another organisation is the Controlling Agency.....	51
Figure 5-6: Principle of liaison when EAL is the Controlling Agency	51
Figure 6-1: Mass balance plot for an instantaneous 50m ³ surface release of MDO subjected to a constant 5 knot (2.6m/s) wind, currents and 27°C water temperature (RPS 2024).....	55
Figure 6-2: Mass balance plot for an instantaneous 50m ³ surface release of MDO subjected to variable wind speeds (1–12m/s or 2-24knots), currents and 27°C water temperature (RPS 2024).....	56
Figure 6-3: Stochastic modelling results of floating hydrocarbons exposure from a surface vessel spill during summer conditions at Low, Moderate and High exposure thresholds. Source: RPS 2024.	60
Figure 6-4: Stochastic modelling results of floating hydrocarbons exposure from a surface vessel spill during transitional conditions at Low, Moderate and High exposure thresholds. Source: RPS 2024.	61
Figure 6-5: Stochastic modelling results of floating hydrocarbons exposure from a surface vessel spill during winter conditions at Low, Moderate and High exposure thresholds. Source: RPS 2024.	62
Appendices	
APPENDIX A SPILL RESPONSE FORMS	98
APPENDIX B INCIDENT ACTION PLAN TEMPLATE	120
APPENDIX C NET ENVIRONMENTAL BENEFIT ASSESSMENT	122
APPENDIX D BONN APPEARANCE CODES	133
APPENDIX E ESTIMATING OIL SLICKS AT SEA	136
APPENDIX F IMT RESOURCING PLAN	139

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 7 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

ACRONYMS AND DEFINITIONS

Acronym	Definition
ADIOS	Automated Data Inquiry for Oil Spills
ALARP	As Low As Reasonably Practicable
AMOSOC	Australia Marine Oil Spill Centre
AMOSPlan	Australian Marine Oil Spill Centre Plan
AMSA	Australian Maritime Safety Authority (Commonwealth)
AMP	Australian Marine Park
ANZECC	Australian and New Zealand Environment Conservation Council
API	American Petroleum Institute
AusSAR	Australian Search and Rescue
Bbl	Barrels
BAOAC	Bonn Agreement Oil Appearance Code
CMT	Crisis Management Team
CMTL	Crisis Management Team Leader
Cth	Commonwealth
DBCA	Department of Biodiversity, Conservation and Attractions (Western Australia)
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DEPWS	Department of Environment, Parks and Water Security (Northern Territory)
DFES	Department of Fire and Emergency Services (Western Australia)
DIPL	Department of Infrastructure, Planning and Logistics (Northern Territory)
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety (Western Australia)
DNP	Director of National Parks (Commonwealth)
DPIR	Department of Primary Industry and Resources (Northern Territory)
DoEE	Department of Environment and Energy (Commonwealth) (now Department of Agriculture, Water and the Environment)
DoT	Department of Transport (Western Australia)
DPIRD	Department of Primary Industries and Regional Development (Western Australia)
DTSC	Department of Tourism, Sport and Culture (Northern Territory)
DWER	Department of Water and Environmental Regulations (Western Australia)
EAL	Eni Australia Limited
EMBA	Environment that May Be Affected
EMERG	HQ Emergency Response Department (Global)
Eni HQ	Eni Spa Headquarters, Milan
EP	Environment Plan
EPO	Environment Performance Outcome
EPS	Environment Performance Standard
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ERT	Emergency Response Team

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 8 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

Acronym	Definition
FOB	Forward Operating Base
GDS	Global Dispersant Stockpile
HMA	Hazard Management Agency
HR	Human resources
HSE	Health, Safety and Environment
HQ	Headquarter
IAP	Incident Action Plan
IC	Incident Controller
ICM	Incident and Crisis Management
IMO	International Maritime Organisation
IMP	Incident Management Plan
IMT	Incident Management Team
IMTL	Incident Management Team Leader
ITOPF	The International Tanker Owners Pollution Federation
JRCC	Joint Rescue Coordination Centre
JSCC	Joint Strategic Coordination Committee
KSAT	Kongsberg Satellite Services
L	Litres
LO	Liaison Officer
LOWC	Loss of well control
MD	Managing Director
MDO	Marine Diesel Oil
MEE	Western Australia State Hazard Plan for Maritime Environmental Emergencies
MEER	Marine Environmental Emergency Response
MEECC	Maritime Environmental Emergency Co-ordination Centre
MC	Measurement Criteria
MODU	Mobile Offshore Drilling Unit
MOP	Marine Oil Pollution
MoU	Memorandum of Understanding
N/A	Not applicable
NEBA	Net Environmental Benefit Analysis
NatPlan	National Plan for Maritime Environmental Emergencies
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NOPTA	National Offshore Petroleum Titles Administrator
NRT	National Response Team
NT	Northern Territory
NT EPA	Northern Territory Environment Protection Authority
NTOWRP	Northern Territory Oiled Wildlife Response Plan
OEPA	Office of the Environment Protection Authority (OEPA)
OIM	Offshore Installation Manager

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 9 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Acronym	Definition
OIW	Oil in water
OPEP	Oil Pollution Emergency Plan
OPGGS Act	<i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i>
OPGGS (E) Regulations	Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023
OSA	Offshore Services Australia
OSC	On Scene Commander
OSRA	Oil Spill Response Atlas
OSRL	Oil Spill Response Limited
OSM	Oil Spill Modelling
OSMP	Operational and Scientific Monitoring Program
POLREP	Marine Pollution Report
POS	Production Operations Supervisor
PPE	Personal Protection Equipment
PWC	NT Parks and Wildlife Commission
QA/QC	Quality Assurance / Quality Control
ROVs	Remotely Operated Vehicles
SAF	Sea Alarm Foundation
SAR	Synthetic Aperture Radar
SARO	Senior Search and Rescue Officer-Aviation
SC	Safety Case
SCAT	Shoreline Clean-up Assessment Technique
SEQ	Safety, Environment, Quality
SG	Specific gravity
SHP-HAZMAT	State Hazard Plan for Hazardous Materials
SITREP	Marine Pollution Situation Report
SMEERC	State Maritime Environmental Emergency Coordinator
SMP	Scientific Monitoring Program
SMPC	State Marine Pollution Coordinator
SMV	Surveillance, Modelling, and Visualisation
SOPEP	Shipboard Oil Pollution Emergency Plans
TEMC	Territory Emergency Management Council
TEP	Territory Emergency Plan
UAV	Unmanned Aerial Vehicle
VOCs	Volatile Organic Compounds
WA	Western Australia
WAOWRP	Western Australia Oiled Wildlife Response Plan
WC	Wildlife Coordinator
WMC	Waste Management Coordinator
WCSS	Worst Credible Spill Scenario
YGP	Yelcherr Gas Plant
ZPI	Zone of Potential Impact

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 10 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

1 FIRST STRIKE PLAN

QUICK REFERENCE SECTION - OIL SPILL RESPONSE

OIL SPILL RESPONSE PRIORITIES

Response priorities in the event of an oil spill are:

- PEOPLE
- ENVIRONMENT
- ASSETS
- REPUTATION.

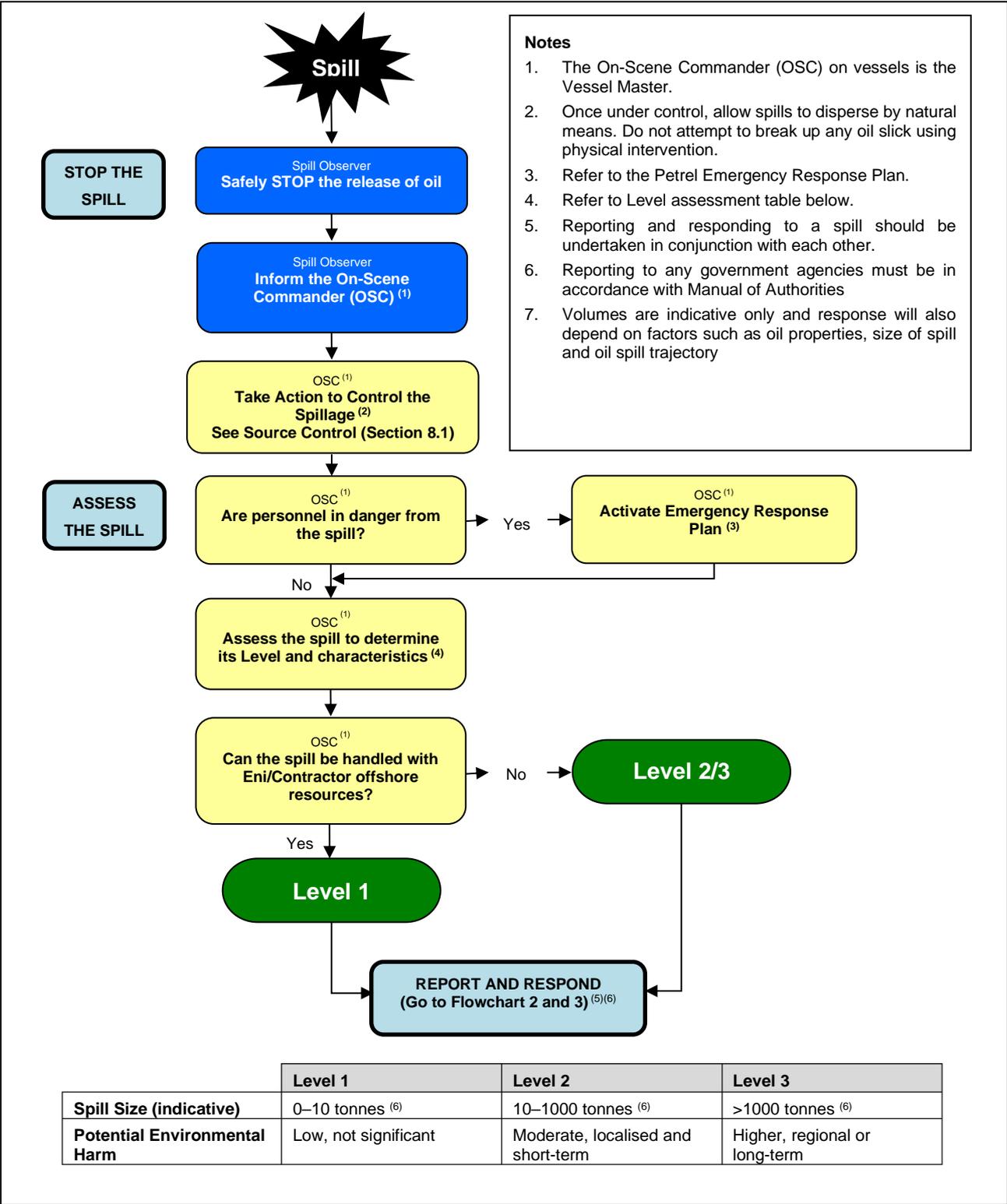
WHAT TO DO IF AN OIL SPILL OCCURS OFFSHORE?

- | | |
|------------------------------------|-------------------------------------|
| 1. Stop the Spill (Flowchart 1). | 4. Monitor the Spill (Flowchart 3). |
| 2. Assess the Spill (Flowchart 1). | 5. Combat the Spill (Flowchart 3). |
| 3. Report the Spill (Flowchart 2). | |

TEN QUESTIONS

1. What is it (hydrocarbon type)?
2. Where?
3. How big (quantity/size)?
4. Is the source contained?
5. Are all personnel safe?
6. What is in the way/what could it contact?
7. How long is it until it gets there?
8. Weathering?
9. Worst credible scenario?
10. What can we do?

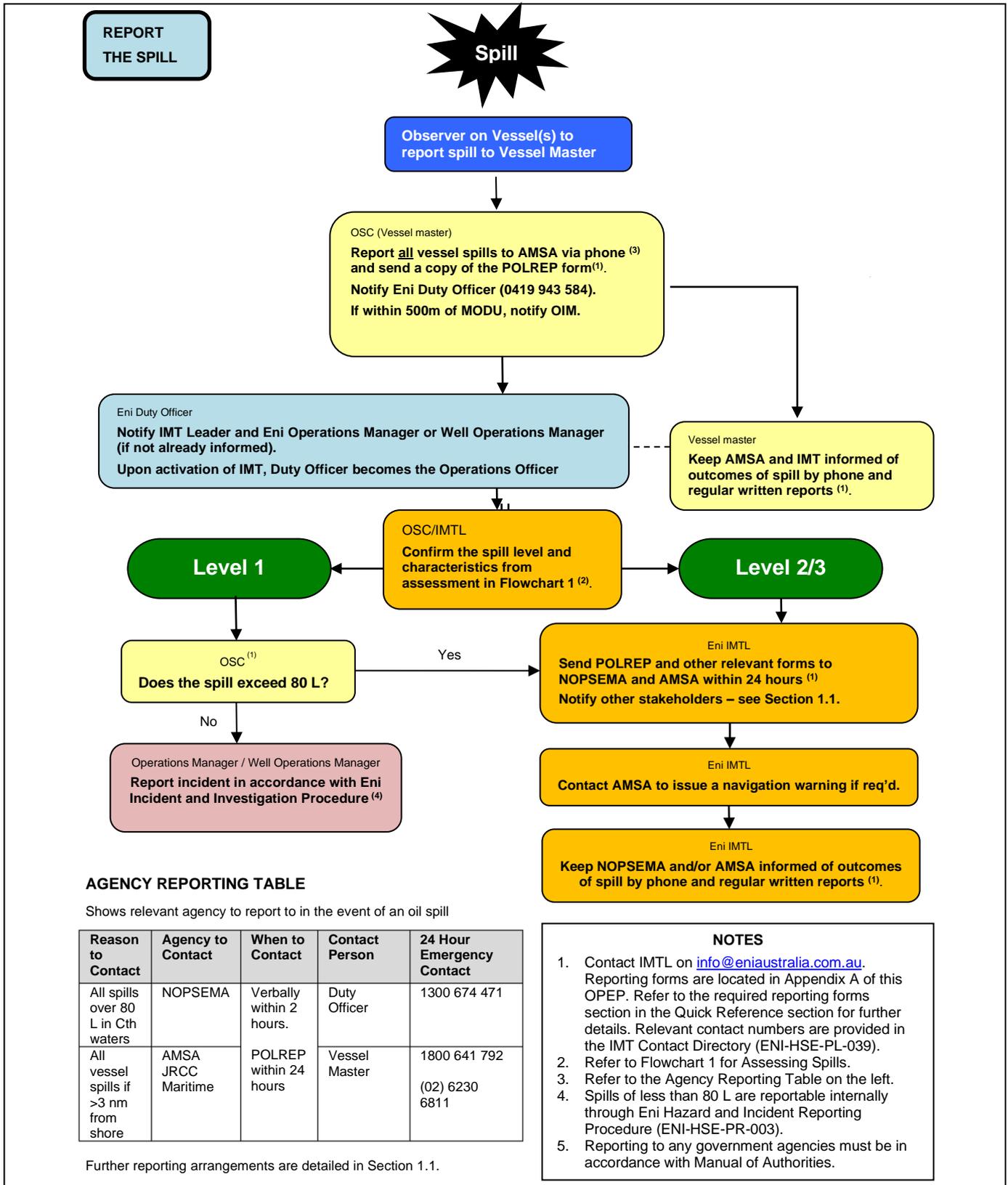
FLOWCHART 1 – STOP AND ASSESS THE SPILL



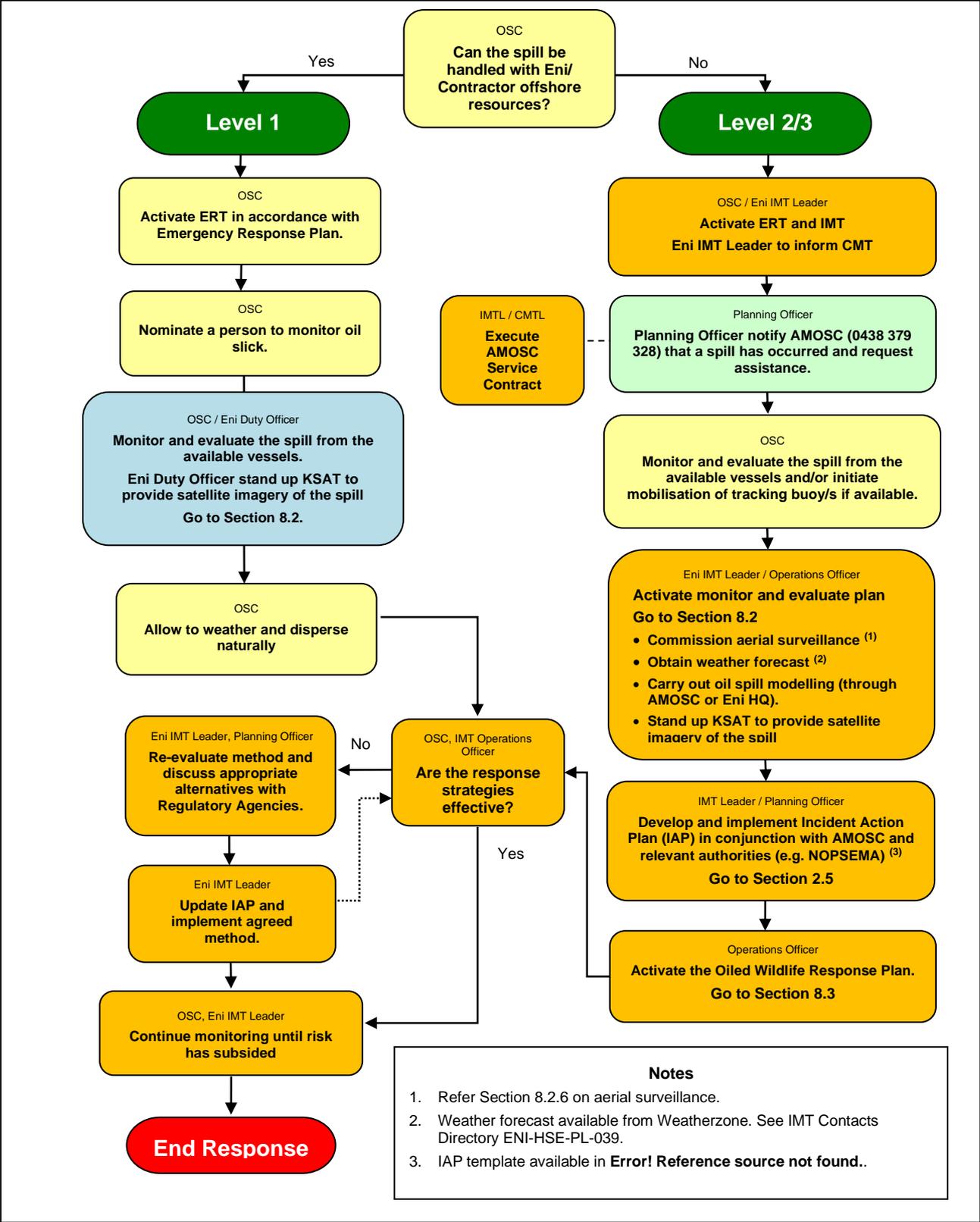
Notes

1. The On-Scene Commander (OSC) on vessels is the Vessel Master.
2. Once under control, allow spills to disperse by natural means. Do not attempt to break up any oil slick using physical intervention.
3. Refer to the Petrel Emergency Response Plan.
4. Refer to Level assessment table below.
5. Reporting and responding to a spill should be undertaken in conjunction with each other.
6. Reporting to any government agencies must be in accordance with Manual of Authorities
7. Volumes are indicative only and response will also depend on factors such as oil properties, size of spill and oil spill trajectory

FLOWCHART 2 – REPORT THE SPILL



FLOWCHART 3 – RESPONSE (MONITOR AND COMBAT)



 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 14 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

IMMEDIATE NOTIFICATIONS		
Action	Vessel spill	
Initial evaluation by OSC	Vessel Master	
Internal Notification	For spills during Decommissioning Activities (MODU in the field)	For spills during Vessel Activities (MODU <u>not</u> in the field)
	Vessel Master informs the MODU OIM (decommissioning operations) of any vessel spills with 500m of the MODU	Vessel Master notifies the Duty Officer: 0419 943 584
	OIM notifies the Drilling Superintendent	
	Drilling Superintendent notifies the Duty Officer: 0419 943 584	
	Duty Officer notifies: <ul style="list-style-type: none"> • IMTL • Well Operations Manager 	Duty Officer notifies: <ul style="list-style-type: none"> • IMTL • Operations Manager
	Spills of less than 80 L are reportable internally through Eni Hazard and Incident Reporting Procedure (ENI-HSE-PR-003).	
Completion of POLREP by OSC	Well Operations Manager	Vessel Master (OSC)
External Notification	All vessel spills to be reported to AMSA within 2 hours by the Vessel Master or Eni Duty Officer.	
	The Vessel Master or Well Operations Manager will report spills over 80L in Cth waters via phone to NOPSEMA within 2 hours. Send POLREP and other relevant forms (Appendix A). For ongoing response in event of Level 2/3 the IMTL will send the POLREP and SITREP. See 1.1 for all IMT notifications.	

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 15 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

REQUIRED REPORTING FORMS (All reporting forms are contained within Appendix A)			
Form No.	Form Title	Use	Submit to
028	Marine Pollution Report (POLREP)	Primarily a "first report" used to notify Government agencies, AMOSC and Eni IMT of a spill.	<ul style="list-style-type: none"> • AMSA (vessel spills) • AMOSC (all spills where support is required) • NOPSEMA (spills in Commonwealth waters) • WA DoT (spills in WA waters) • NT DEPWS (spills in NT waters) • Eni IMTL/Duty Officer
029	Marine Pollution Situation Report (SITREP)	For ongoing reports. Spill response activities are reported on this form.	Refer Form ENI-HSE-FR-028.
FM0831	NOPSEMA Reportable Environmental Incident Form (Part 1)	A "reportable incident" is an incident associated with the activity that has caused or has the potential to cause moderate to significant environmental damage (e.g. oil spill of greater than 80L).	NOPSEMA (within three days of incident).
FM0831	NOPSEMA Reportable Environmental Incident Form (Part 2)	A "reportable incident" is an incident associated with the activity that has caused or has the potential to cause moderate to significant environmental damage (e.g. oil spill of greater than 80L).	NOPSEMA (within 30 days of incident).
FM0928	Recordable Environmental Incident Monthly Summary Report	<p>A monthly report used to summarise any recordable incidents.</p> <p>A recordable incident is an incident arising from the activity that breaches a performance objective or standard in the EP and is not a reportable incident.</p>	NOPSEMA (not later than 15 days after the end of the calendar month).

For contact details, refer to Section 1.1: Notifications or Eni IMT Emergency Contacts Directory ENI-HSE-PL-039.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 16 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

1.1 Notifications

On a vessel, the observer must notify the Vessel Master, who in turn will notify the OSC if within the 500m of the MODU.

The On-Scene Commander (OSC) is appointed by default as follows:

- Vessel Activities: Vessel Master; and
- Decommissioning Activities when MODU is in the field: MODU Offshore Installation Manager (OIM).

The OSC or Well Operations Manager shall report spills greater than 80 litres to NOPSEMA verbally within two hours. The OSC or Well Operations Manager (Level 1 spill) or IMT Leader (IMTL) (Level 2/3 spills) is responsible for written reporting to NOPSEMA and other external authorities. A written report of the event must be provided to NOPSEMA within three days. Eni shall report spills less than 80 litres to NOPSEMA within 15 days of the end of the reporting month.

All spills must be reported to AMSA, regardless of location. The OSC shall notify AMSA within two hours. A POLREP form (Appendix A) is required to be sent to AMSA in order to provide details of the spill. The OSC shall prepare the POLREP form.

For spills occurring in Commonwealth waters requiring, or potentially requiring external assistance (i.e. Level 2/3 spills), the IMTL is responsible for subsequent activations and notifications, which will depend on the circumstances of the spill (Table 1-1).

For the full list of contacts and contact details, refer to the IMT Emergency Contact Directory ENI-HSE-PL-039.

Table 1-1: Notifications by the IMT if activated (Level 2/3)

NOTIFICATIONS TO BE COMPLETED BY ENI'S INCIDENT MANAGEMENT TEAM			
Notification Timing	Authority/ Company	Contact Number	Instruction
As soon as practicable	AMOSC	24/7 Duty Office: 0438 379 328 (24/7)	As soon as practicable
As soon as practicable	OSRL	24/7 Duty Office: +65 6266 1566 (Singapore) 24/7 Duty Officer: +61 8 6557 8552 (Perth)	Notify OSRL that a spill has occurred, and Eni may require the stand-up of the resources and equipment.
Within 2 hours	AMSA Joint Rescue Coordination Centre (JRCC)	24/7 hotlines: Within Australia: 1800 641 792 Outside Australia: (02) 6230 6811 https://amsa-forms.nogginoca.com/public/	Verbal notification within 2 hours. Written POLREP within 24 hours on request from AMSA (Appendix A).

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 17 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

NOTIFICATIONS TO BE COMPLETED BY ENI'S INCIDENT MANAGEMENT TEAM

Notification Timing	Authority/ Company	Contact Number	Instruction
Within 2 hours	NOPSEMA	1300 674 472 Incident reporting requirements: https://www.nopsema.gov.au/environmental-management/notification-and-reporting/	Verbal within 2 hours Written report as soon as practicable, no later than three days
As soon as practicable	Department of Climate Change, Energy, the Environment and Water (DCCEEW)	epbc.permits@environment.gov.au	Email notification as soon as practicable.
Within 7 days	National Offshore Petroleum Titles Administrator (NOPTA)	reporting@nopta.gov.au	Written report to NOPTA within seven days of the initial report being submitted to NOPSEMA. Provide same written report as provided to NOPSEMA
Incidences which occur within an Australian Marine Park (AMP) or are likely to impact on an AMP	Director of National Parks (DNP)	Director of Marine Parks: 0419 293 465 (24-hour Marine Compliance Duty Officer)	The DNP should be made aware of oil/gas pollution incidences which occur within an AMP or are likely to impact on an AMP as soon as possible.
Should impact be expected to community members including: <ul style="list-style-type: none"> fishing industry; tourism industry; local community; and indigenous groups. 	Refer to Petrel Stakeholder Database for stakeholder representatives	Refer to Petrel Stakeholder Database for stakeholder representatives	Contact relevant stakeholder representatives as per details within the Petrel Stakeholder Database

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 18 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

1.2 Escalation and De-Escalation of Response Levels

Table 1-2 lists escalation and de-escalation response triggers. The OSC is responsible for de-escalation and termination of the response for Level 1 spills. The IMTL is responsible for escalation and de-escalation of Level 2 or 3 spills.

Table 1-2: Escalation and de-escalation triggers for oil spill response

Escalation Triggers	De-escalation Triggers
<p>An incident will escalate from Level 1 to a 2 if:</p> <ul style="list-style-type: none"> Greater than 10m³ of oil has been spilt or is predicted to spill in the near future; or Additional support resources are required at local, regional or national level. 	<p>The incident will be de-escalated from Level 2 to 1 if the hydrocarbon source is under control and additional support resources are no longer required.</p>
<p>The level will escalate from Level 2 to a 3 if:</p> <ul style="list-style-type: none"> Greater than 1000m³ of oil has been spilt or is predicted to spill in the near future; or The surface slick is predicted to reach a shoreline; or Significant external support (from local, regional, national and international organisations) and/or a response of an extended duration is required. Incident controller delegates all incident management functions to focus on leadership and strategy. 	<p>The incident will be de-escalated from Level 3 to 2 when:</p> <ul style="list-style-type: none"> Continued response activities will have no further improvements; or Endpoint criteria for response strategies have been met.

1.2.1 Spill Response Levels

Eni's incident response levels broadly align with state, territory and national incident response plans including the WA MEE, NT Plan and the NatPlan. Spill response levels help to identify the severity of an oil spill incident and the level of response required to manage the incident and mitigate environmental impacts. Incident response levels are further detailed in Table 1-3 for hydrocarbon spills.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 19 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Table 1-3: Eni oil spill response levels

Level 1	
An incident which will not have an adverse effect on the public or the environment. An incident which can be controlled by the use of resources normally available on-board vessel in the case of this EP without other external assistance.	
As a guide only – spills up to 10 tonnes (0–70bbl or 0–11m ³). Oil is contained within the incident site. Spill occurs within immediate site proximity. Able to respond to the spill immediately.	Source of spill has been contained. Oil is evaporating quickly and no danger of explosive vapours. Spill likely to naturally dissipate. No media interest/not have an adverse effect on the public.
Level 2	
An incident that cannot be controlled by using onsite resources alone and requires external support and resources to combat the situation; or An incident that can be controlled onsite, but which may have an adverse effect on the public or the environment.	
All spills between 10 and 1000 tonnes (71–7000bbl or 11m ³ –1113m ³). Danger of fire or explosion. Possible continuous release. Concentrated oil accumulating in close proximity to the site or vessel. Potential to impact other installations.	Level-1 resources overwhelmed, requiring additional regional resources. Potential impact to sensitive areas and/or local communities. Local/national media attention/may adversely affect the public or the environment.
Level 3	
An event capable of determining a very dangerous condition for the site and/or the surrounding area. An incident which may require the mobilisation of external state, national or international resources to bring the situation under control.	
Loss of well integrity. Actual or potentially serious threat to life, property, industry. Major spill beyond site vicinity. As a guide – spills above 1,000 tonnes (>7000bbl or >1113m ³). Significant shoreline environmental impact.	Level-2 resources overwhelmed, requiring international assistance. Level-3 resources to be mobilised. Significant impact on local communities. International media attention.

1.2.2 Initial OPEP activations for a Level 1 spill

The OSC is responsible for initial activations for a Level 1 spill. Also refer to Flowcharts 1, 2 and 3 above.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 20 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Table 1-4: Activations for Level 1 spills

When	Activation	Who
Immediate	Manage the safety of personnel on the vessel / MODU and in operational area.	OSC
Immediate	Control the source using resources as per the SOPEP and OPEP. Refer to Source Control – go to Section 8.1 .	OSC
30 minutes	Make initial notifications. Activate the Notifications Plan – go to Section 1.1 .	OSC
90 minutes	Monitor and evaluate the spill from the available vessels. Go to Section 8.2 .	OSC
Ongoing	Provide updates and incident reporting in accordance with Notifications Plan – go to Section 1.1 . For vessel spills in Commonwealth waters, Eni will act as Control Agency until such time that AMSA assumes the role of Control Agency in which case Eni will follow direction of AMSA and provide all necessary onsite resources.	OSC

	eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 21 / 140
				Validity Status	Rev. No.	
				PR-OP	0	

1.2.3 Initial OPEP activations for a Level 2/3 spill

Following activation of the first strike plan outlined in Flowcharts 1, 2 and 3, the response will be activated as follows.

Table 1-5: Activations for Level 2/3 spills response

FOR IMMEDIATE RESPONSE ACTIVATIONS (<1 HR) REFER TO FLOW CHART 1, 2 AND 3			
When	Objective	Strategy	Who
90 minutes	Gain situational awareness and undertake spill surveillance.	Activate the Monitor and Evaluate Plan – go to Section 8.2 .	Operations Officer Logistics Officer Environmental Advisor
3 hours	Use operational inputs to inform the response planning	Initiate the development of Incident Action Plan – go to Section 2.5 and template in Appendix B.	Planning Officer Environment Advisor
5 hours	Prevent/mitigate impacts to wildlife.	Activate the Oiled Wildlife Response Plan – go to Section 8.3 .	Environmental Advisor Operations Officer
8 hours	Manage the safety of all responders.	Initiate the development of a Safety Management Plans .	Safety Officer
1 day	Assess and monitor impacts from spill and response.	Activate Scientific Monitoring Plan – go to Section 8.4 .	Environmental Advisor Planning Officer Logistics Officer
Ongoing	For vessel spills in Commonwealth waters, following notification of a Level 2/3 vessel spill, AMSA as the legislated Control Agency, may formally assume control of the spill response and provide direction to those activities already commenced by Eni.		N/A

1.3 Mobilisation of Response Strategies

The following response strategies have been identified in the pre-operational Net Environmental Benefit Analysis (NEBA) (Section 7). Mobilisation of response strategies is dependent on the spill level (Refer to Flowchart 1 for Spill Response Levels).

Table 1-6 and Table 1-7 present the first response actions relevant for Level 1 and Level 2/3 Marine Diesel Oil (MDO) spills. Response strategies should be re-evaluated in an Operational NEBA (Section 7).

	eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 22 / 140
				Validity Status	Rev. No.	
				PR-OP	0	

Table 1-6: NEBA summary and operational plans for response strategies – Level 1

Strategy	Applicable	First response actions	Action by	Resource
Monitor and Evaluate	Yes	Appoint vessel crew to observe the spill area or slick	OSC	Section 8.2 (Monitor and Evaluate) 000694_DV_ES.HSE.0286.000_00 (OSMP)
		Stand up KSAT to provide satellite imagery of the spill	Eni Duty Officer	
Source control	Yes	Implement SOPEP	OSC	SOPEP See Section 8.1

Table 1-7: NEBA summary and operational plans for response strategies – Level 2/3

Strategy	Applicable	First response actions	Action by	Resource
Monitor and Evaluate	Yes	Implement OMP1 – mobilise vessel and aircraft for surveillance.	IMTL	Section 8.2 (Monitor and Evaluate) 000694_DV_ES.HSE.0286.000_00 (OSMP)
		Deployment of satellite tracking buoy	OSC	
		Implement OMP2 – sample hydrocarbon for chemical and physical properties.	IMTL	
		Source real time oil spill modelling via AMOSC.	Planning Officer	
		Stand up KSAT to provide satellite imagery of the spill.	Ops Officer	
		Depending on results of modelling and monitoring, consider OMP3. Mobilise resources for marine megafauna assessment.	IMTL	
Source control	Yes	Implement Shipboard Oil Pollution Emergency Plans (SOPEP) or equivalent.	OSC	SOPEP See Section 8.1
Shoreline clean up	No	N/A	N/A	N/A
Surface Dispersants	No	N/A	N/A	N/A

	eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 23 / 140
				Validity Status	Rev. No.	
				PR-OP	0	

Subsea Dispersants	No	N/A	N/A	N/A
Containment and Recovery	No	N/A	N/A	N/A
Protection and Deflection	No	N/A	N/A	N/A
Oiled wildlife response	Yes	Equipment from AMOSC, OSRL, and AMSA if required. Western Australian Stockpiles and relevant personnel mobilised.	Logistic Officer	Section 8.3
Waste Management	No	N/A	N/A	N/A
Scientific Monitoring	Yes	Set up Purchase Order under Eni Environment and Social Impact Consultancy Services Panel	Logistic Officer	000694_DV_ES.HSE.0286.000_00(OSMP)
In-situ burning	No	N/A	N/A	N/A

1.3.1 Operational and Scientific Monitoring

Details on Eni's Operational and Scientific Monitoring capability and mobilization is included in the OSMP (000694_DV_PR.HSE.0286.000).

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 24 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

2 OIL POLLUTION EMERGENCY PLAN OVERVIEW

This OPEP has been developed specifically to respond to emergency oil spills as described and defined in the associated Petrel Environment Plan (EP):

- Petrel-3 and Petrel-4 Monitoring and Decommissioning EP (000694_DV_ES.HSE.0027.000_00).

2.1 Scope

The OPEP is an operational document and contains all information necessary for Eni to carry out a response to an emergency oil spill. This OPEP applies to all activities relating to Petrel-3 and Petrel-4 activities. It includes organisational responsibilities, actions, reporting requirements, and resources available to ensure the effective and timely management and response to an accidental oil spill.

For vessel based spills it will be the responsibility of the vessel owner to respond in accordance with the vessel specific Shipboard Oil Pollution Emergency Plan (SOPEP). This OPEP has been developed to support the individual vessel-based SOPEPs and details the interaction between contracted vessels spill response plans and Eni response arrangements in the event of an oil spill.

The coverage of this OPEP is based on the associated spill modelling and encompasses the Environment that May Be Affected (EMBA), Zone of Potential (ZPI) (moderate exposure area) presented in the Petrel-3 and Petrel-4 Monitoring and Decommissioning EP.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 25 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

2.2 High-Level Objectives of OPEP

The overall aim of this OPEP is to prevent long term significant environmental impacts by safely limiting the adverse environmental effects from an unplanned release of hydrocarbons to the marine environment to a level that is as low as reasonably practicable (ALARP); this will be achieved through the implementation of the various strategies presented throughout this OPEP, each with their own objectives.

2.3 Interface with External Plans

The OPEP is integrated with a number of governments plans as well as oil industry mutual assistance plans. These are listed in Table 2-1.

Table 2-1: Associated External Plans

Jurisdiction	Plan Title	Administering Agency	Function/Application
Industry (all waters)	Australian Marine Oil Spill Centre Plan (AMOSPlan)	Australian Marine Oil Spill Centre (AMOSC)	Sets out industry arrangements for mutual aid and access to AMOSC resources.
Commonwealth of Australia (Cth waters)	National Plan for Maritime Environmental Emergencies (NatPlan)	AMSA	Sets out oil spill preparedness and response procedures under the NatPlan.

2.4 Interface with Internal Documents

This OPEP interfaces with other relevant Eni crisis and emergency plans as detailed in Table 2-2.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 26 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Table 2-2: Eni Crisis and Emergency Management Plans

Document Title	Document Number	Scope and Function
Eni HSE IMS Framework	ENI-HSE-IN-002	Describes the way in which security, safety, health and the environment are managed by Eni.
Eni Crisis Management Plan	ENI-HSE-PL-033	Company-wide plan setting out Crisis Management Team (CMT) procedures.
Eni Incident Management Plan (IMP)	ENI-HSE-PL-034	Covers company-wide emergency management. Integrated with facility and Project environmental management plans.
IMT Support Team Manual	ENI-HSE-PL-037	Covers operation and roles and responsibilities of IMT support teams, including Oil Spill Response Planning Team, Aerial Surveillance Team, and Oil Spill Response Logistics team. Provides support team checklists.
IMT Emergency Contact Directory	ENI-HSE-PL-039	Provides extensive list of government, contractor and Eni contacts and contact details.
Eni Petrel Emergency Response Plan		Covers Petrel Facility emergency response.
Vessel Shipboard Oil Pollution Emergency Plans (SOPEPs)	As per contractor document control	SOPEPs as per International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL) requirements.

2.5 Incident Action Plan

The Incident Action Plan (IAP) is a key step in managing any significant response, recognising that all incidents are different and will be subject to variable factors such as weather, timing (seasons), sea state, duration, size and nature of release. The purpose of the IAP is to consider all these variable and changing factors, to ensure the response continues to be suitable for the event.

The IAP will use operational monitoring inputs to inform the response planning. The IAP will detail the response mechanisms and priority areas for protection based on the actual circumstances of the event, taking into account the spill trajectory, weather conditions and safety considerations.

Given the range of potential outcomes from a release event, an IAP is a critical step identified in the response strategy. Key activities to be addressed by the IAP include a review of the Net Environmental Benefit Analysis (NEBA), oil spill modelling (OSM), and ongoing consultation with affected/ involved stakeholders. To ensure that the IAP is appropriate for the nature of the spill, Eni shall seek the advisory support of technical experts as nominated by AMSA, AMOSC, and operators with activities within the spill area.

	eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 27 / 140
				Validity Status	Rev. No.	
				PR-OP	0	

Table 2-3 presents the steps for developing the IAP. A blank IAP template is provided in Appendix B.

Table 2-3: Incident Action Plan procedure

Task		Description	Action
1	Set Response Aim	This Response Aim is a broad statement of the overriding aim of the response, i.e. what the response is aiming to achieve. It may also set priorities. The aim may be set by the IMTL, Crisis Manager or Statutory Authority.	IMTL
2	Set Objectives	These are "goal statements" and indicate desired individual outcomes of the response (e.g. containment and recovery at location A). They are generally set by the IMTL.	Entire IMT
		Objectives may be set for all functions within the response. For example, "Delivery of equipment" might be an objective for the Logistics Officer.	
		Objectives should be ranked according to priorities, which are decided by the IMTL.	
3	Determine Response Strategies	Strategies describe how the IMT (in particular Operations) plan to achieve the stated objectives.	Relevant IMT Officers
		Strategy options may be limited by weather, availability of equipment or by a range of operational constraints.	
		The NEBA (Section 7) will present viable and appropriate strategies.	Planning Officer
		Some strategies may require regulatory approval. Obtain any permits required.	IMTL
4	Determine Tactics or Methods	Methods for implementing may be written as a series of tasks detailing the deployment of personnel and equipment.	Relevant IMT Officers
	Prepare/ Review	This may include, aerial surveillance, marine response, media, etc.	
5	Sub Plans	The Planning Officer should identify relevant plans for achieving the set objectives and coordinate the development of these plans, e.g. aerial surveillance and vessel surveillance.	Planning Officer
		The Logistics Officer should compile a list of equipment, personnel and service requirements for the planned response.	Logistics Officer

	eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 28 / 140
				Validity Status	Rev. No.	
				PR-OP	0	

6	Collate the IAP	Collate the IAP (Aim, Objectives, Strategies, Methods and Logistics etc.) and distribute to IMT and IMT officers.	Planning Officer
7	Approve IAP	The IMTL must approve the IAP and any revisions to the IAP. The IMTL is responsible for ensuring the IAP is consistent with regulatory requirements and this OPEP.	IMTL
8	Monitor	Monitor the progress of the response and assess against objectives.	Planning Officer
		Notify IMTL of the need to revise the IAP.	
9	Revise IAP	Repeat this process during the response as the situation, objectives, strategies or tactics change.	N/A

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 29 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

3 RESOURCES AND MOBILISATION SUMMARY

3.1 AMOSC, OSRL and AMSA Resources Available

Table 3-1: Resource and mobilisation overview

Resource	Time period from notification to mobilise		
	<24 hours	48-72 hours	> 96 hours
AMOSC	Deploy from various stockpile locations. Transport: Aircraft	Deploy from various stockpile locations. <ul style="list-style-type: none"> Transport: Aircraft/truck/boat-optimum will be chosen. Oiled Wildlife Equipment. 	Deploy from various stockpile locations. Transport: Aircraft/truck-optimum will be chosen. <ul style="list-style-type: none"> Communications Tracking Buoys Oiled Fauna Kit.
OSRL	-	Available is 50% of the OSRL equipment (if required). Time for delivery of equipment will vary-commence receiving within 72 hours.	-
AMSA	Deploy from various locations Transport: Aircraft	Deploy from various stockpile locations. Transport: Truck/boat/aircraft-optimum will be chosen. <ul style="list-style-type: none"> Oiled Fauna Kit. 	Deploy from various stockpile locations. Transport: Aircraft/truck-optimum will be chosen. <ul style="list-style-type: none"> Communications Tracking Buoys Oiled Fauna Kit.



eni australia

Company document identification
000694_DV_ES.HSE.0285.000_00

Owner document identification

Rev. index.	
Validity Status	Rev. No.
PR-OP	0

Sheet of sheets
30 / 140

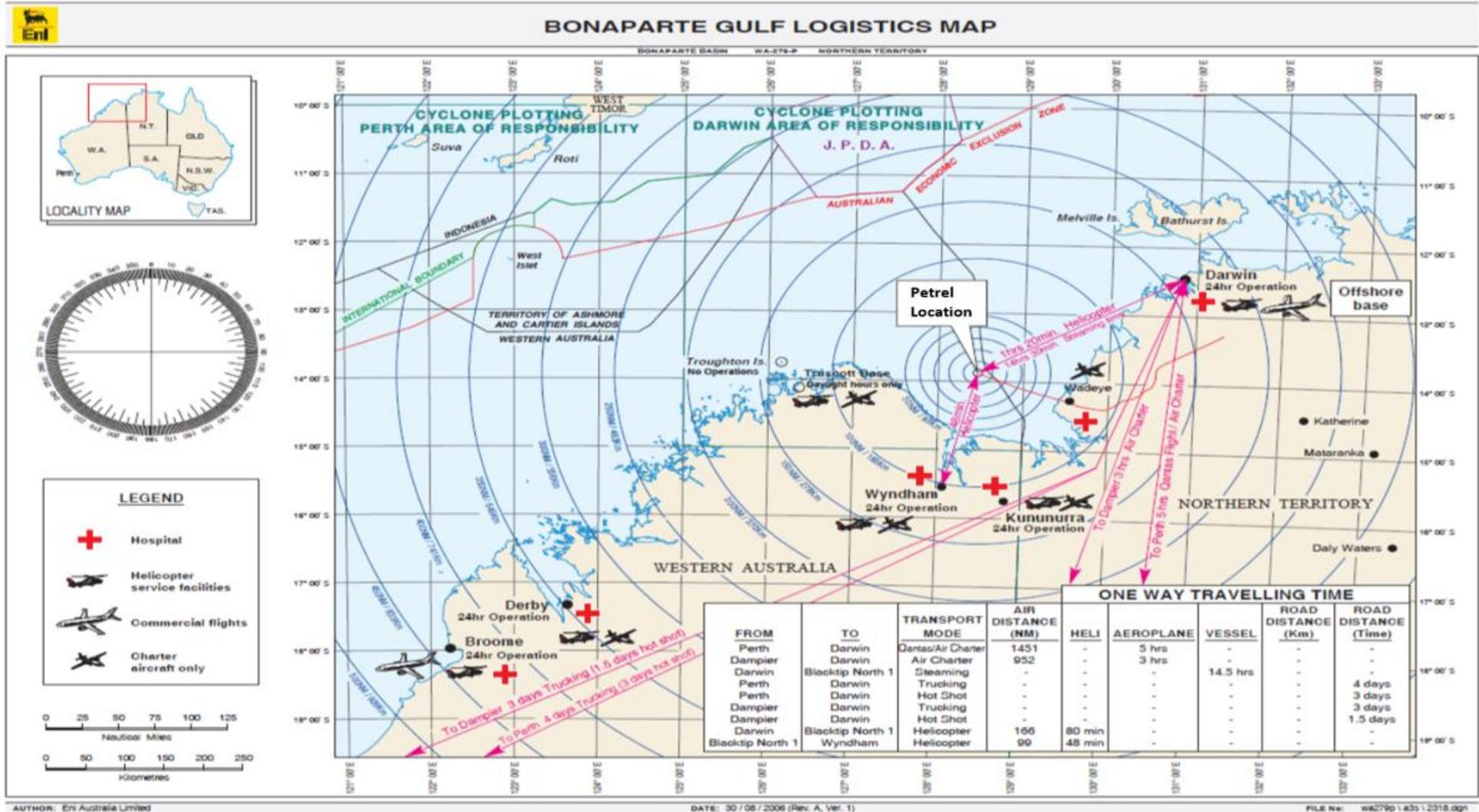


Figure 3-1: Logistics map with aerial support bases, response times

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 31 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

3.2 Logistics Resources

Eni's supply base in Darwin is the TOLL Supply Base. TOLL is Eni's integrated logistics provider in Australia and will support of emergency services. TOLL has contracted ISS as Toll's (Australian) national emergency responder.

TOLL can provide immediate access to maritime professionals through their personnel network in Darwin and Perth that could assist in the event of a spill.

Company	Function	Contact Details
TOLL	ISS emergency response	ISS 24/7 emergency responder: 1300 131 001 info@iss-solutions.com.au
	Reception (Eni)	+61 8 9320 1111
	Logistics – Support (Eni)	+61 488 101 637

3.3 Aircraft Resources

Eni has contracts in place with Offshore Services Australia (OSA), PHI and Hardy Aviation Solutions.

Company	Contact Details
Offshore Services Australia Truscott Operations	OSA.TSTOPS@chcheli.com +61 8 9161 4072
PHI	phibmeops@phi-int.com +61 8 9138 7719
Hardy Aviation	ops@hardyaviation.com.au + 61 427 278 110

These aircraft may be used for:

- Aerial observation duties;
- Transportation of personnel to attend to a response; and
- Transportation of equipment.

If additional aircraft are required, other helicopter and fixed wing aircraft service providers in Darwin and Broome will be contacted. Service providers include:

- Hardy Aviation.

If local aircraft are unavailable, or sources cannot be located, the IMT Logistics Officer will immediately contact the Senior Search and Rescue Officer-Aviation (SARO) Australian Search and Rescue (AusSAR) Canberra for available aircraft. The request should specify the task to be performed by an aircraft.

When implementing aerial resources, a flight exclusion is required from the Civil Aviation Safety Authority via AMSA.

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 32 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

The types of aircraft available to Eni in the event of a spill, and their capability is summarised in Table 3-2.

Table 3-2: Aircraft resources

Transport Type	Base	Oil Spill Response Capability	Comment
Helicopters	Truscott	OSA and PHI AMOSC and AMSA. Visual observation.	Pilot and trained observer deployed from Darwin, for visual spill observations. Search and rescue support.
Fixed wing aircraft	Darwin and Truscott.	Murin through TOLL. Visual observation. Cargo. General transport.	Additional resources may be contracted through TOLL.
Chartered fleet	Truscott, Darwin, Derby or Broome. Australia. International.	AMSA and AMOSC. Visual observation. Technical cameras.	Pilot and trained observer deployed from Darwin, for visual spill observations. Highly technical camera system to measure thickness of the oil slick - GIS mapping, to direct booms and to produce a daily chart for visual observations and to check for anomalies.

3.4 Vessel Resources

In the event of a spill, vessels may be required for assistance in any one of the response strategies for transportation of equipment or active involvement in spill response activities. Vessels may be required for:

- Marine surveillance duties;
- Transportation of personnel to attend a response;
- Oiled wildlife response; and
- Transportation of equipment.

Within 12 hours of a spill, the IMT Logistics Officer will identify any vessels within the immediate area with a capability to assist with the response if required. The Logistics Officer may identify vessel of opportunity by making contact with Shipping Agents within Darwin (as specified on the Darwin Port Handbook).¹

Eni may also engage through TOLL all vessel operators and owners in WA, NT and Singapore to charter suitable vessels. Refer to Section 3.2 for TOLL contact details.

The IMT Logistics Officer would then make contact with other shipping agents to determine what vessels are available in the greater region, such as areas including Broome, Dampier and Exmouth. However, relevant transit times are to be considered as part of procuring vessels from distant locations. Spot hire vessel contracts will specify the requirement for use of mud/slops tanks as part of the spill response for recovered

¹ Available: <https://www.darwinport.com.au/trade/port-handbook>

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 33 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

oil, this will enable greater capacity of storage on-board the vessel. Storage capacities are expected to vary between vessels, however vessels with larger capacities will be utilised for recovery operations.

Vessels contracted to assist in the spill will be utilised to support a number of response activities such as oiled wildlife and shoreline protection, and throughout the duration of the spill the vessel role may change from one response activity to focus on another (shoreline protection to shoreline clean-up). The Logistics, Planning and Operations Officers will continually assess the vessel resources available and determine the most efficient means of use.

3.5 Labour Hire

The contract with TOLL includes provision for labour hire. Refer to Section 3.2 for TOLL contact details.

Additional response personnel can be accessed through AMOSC Core Group if required (up to 100 personnel available). See Section 4.2.3 for further details.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 34 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

4 OPEP REQUIREMENTS AND LEGISLATIVE FRAMEWORK

The OPEP has been developed to meet all relevant requirements of the OPGGS(E) Regulations 2023. It is consistent with the national system for oil pollution preparedness and response, including:

- The National Plan for Maritime Environmental Emergencies (NatPlan) managed by the Australian Maritime Safety Authority (AMSA) (AMSA, 2020); and
- Australian Government Coordination Arrangements for Maritime Environmental Emergencies (AMSA, 2017)

The OPEP also provides information consistent with Appendix 5 of the Offshore Petroleum Industry Guidance Note - Marine Pollution: Response and Consultation Requirements.

This OPEP is made available to the following Regulatory agencies and stakeholders:

- National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA);
- Australian Maritime Safety Authority (AMSA);
- Australian Maritime Oil Spill Centre (AMOSC);
- Western Australia Department of Transport as the Hazard Management Authority (WA DoT); and
- NT Department of Environment, Parks and Water Security (DEPWS).

A summary of all relevant legislation is provided in Table 4-1.

Table 4-1: Relevant Commonwealth legislation

Legislation	Purpose	Authority
Environmental Protection and Biodiversity Conservation Act 1999	Protection of Australia's environment and biodiversity values	DCCEEW
Environmental Protection and Biodiversity Conservation Regulation 2000	Protection of Australia's environment and biodiversity values	DCCEEW

4.1 Jurisdictional Authorities and Control Agencies

During a spill response there will be both a Jurisdictional Authority and a Control Agency assigned to the oil spill incident for all spill response levels depending on the location and spill origin. The National Plan for Maritime Environmental Emergencies (AMSA, 2020) sets out the divisions of responsibility for an oil spill response.

Definitions of Control Agency and Jurisdictional Authority are as follows:

- Control agency: the organisation assigned by legislation, administrative arrangements or within the relevant contingency plan, to control response activities to a maritime environmental emergency. Control agencies have the

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 35 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

operational responsibility of response activities but may have arrangements in place with other parties to provide response assistance under their direction.

- Jurisdictional authority: the agency which has responsibility to verify that an adequate spill response plan is prepared and, in the event of an incident, that a satisfactory response is implemented. The Jurisdictional Authority is also responsible for initiating prosecutions and the recovery of clean-up costs on behalf of all participating agencies.

Table 4-2 provides guidance on the designated Jurisdictional Authority and Control Agency for all hydrocarbon spills in Commonwealth and State/Territory waters.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 36 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Table 4-2: Marine oil pollution arrangements for spills in Commonwealth waters

Role	Spill Level	Commonwealth waters	
		Petroleum activities ¹	Vessel ²
Control Agency	1	Eni	AMSA
	2/3	Eni	AMSA
Jurisdictional Authority	1/2/3	NOPSEMA	AMSA

¹Includes a 'facility', such as a fixed platform, FPSO/FSO, MODU, subsea infrastructure, or a construction, decommissioning and pipelaying vessel. As defined by Schedule 3, Part 1, Clause 4 of the OPGGS Act 2006

²Vessels are defined by Australian Government Coordination Arrangements for Maritime Environmental Emergencies (AMSA, 2017) as a seismic vessel, supply or support vessel.

In all instances, Eni will act in the role of Control Agency, and implement a first-strike response, until such time that another Control Agency (referred to in Table 4-2) takes control if required.

The provision of resources for any level of oil spill event response will be coordinated by Eni IMT when Eni are the Control Agency.

Support agencies may be requested to join the Eni IMT at the commencement of an incident. Triggers for inviting the support agencies into the IMT are provided in Table 4-3.

Table 4-3: Triggers for Jurisdictional Authorities and support organisations to join the Eni IMT

Support	Trigger to join the IMT
AMSA	Spill response activated or requiring NatPlan Resources. An event which has, in the opinion of the IMTL, the potential to escalate into a Level 2 or Level 3 spill.
AMOSC and OSRL	Level 2 or Level 3 spill requiring AMOSC support and Core Group members or specialist OSRL resources. An event which has, in the opinion of the IMTL, the potential to escalate into a Level 2 or Level 3 spill.

Note: Based on spill modelling undertaken for the Worst Credible Spill Scenario (WCSS) scenarios identified in the Petrel-3 and Petrel-4 Monitoring and Decommissioning EP, it is expected that spill response will take place primarily, and potentially completely, within offshore Commonwealth waters. Therefore, the arrangements for State/Territory waters response have not been included.

4.2 Relevant Authorities

4.2.1 Response to Vessel spills in Commonwealth Waters

For a vessel incident originating in Commonwealth waters, the Jurisdictional Authority and Control Agency is AMSA. AMSA is the national shipping and maritime industry regulator and was established under the Australian Maritime Safety Authority Act 1990. AMSA manages the NatPlan on behalf of the Australian Government, working with State

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 37 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

and the Northern Territory governments, emergency services and private industry to maximise Australia's marine pollution response capability.

Eni is required to have adequate preparedness arrangements for spills from vessels undertaking Petroleum Activities within Commonwealth waters under OPGGS Act 2006 and OPGGS(E) Regulations.

Eni will be responsible for coordinating a first-strike response to a vessel-based spill in Commonwealth waters until such time as AMSA takes over the role as Control Agency, at which time Eni would provide all available resources as a Supporting Agency.

4.2.2 NOPSEMA

The function of the NOPSEMA includes regulation of environmental management of offshore petroleum activities in the Commonwealth offshore areas and in coastal waters where WA State and NT powers have been conferred.

NOPSEMA is the National Authority for offshore petroleum activities and a Statutory Authority under the NatPlan. In these roles, NOPSEMA is responsible for the oversight of response actions to pollution events from offshore petroleum operations (excluding vessel-only spills) in areas of Commonwealth jurisdiction.

4.2.3 AMOSC

Industry assistance is available through the Australia Marine Oil Spill Centre (AMOSC), an industry funded response facility based in Fremantle, WA and Geelong, Victoria. As a member company of AMOSC, Eni has access to AMOSC's oil spill recovery and response equipment, training, technical capabilities along with those resources held by member companies as outlined in the AMOSPlan.

AMOSC has contracts with all its member companies to enable the immediate release of Core Group personnel to be made available for any Eni requirements, as outlined in Eni's *Master Service Contract and Principle and Agency Agreement* with AMOSC.

The IMTL has authorisation to request the mobilisation of AMOSC resources. AMOSC support is facilitated through the AMOSPlan using various legal instruments signed by all members. The AMOSPlan also provides a link into the NatPlan (AMSA) resources. To avoid delays in accessing critical resources, AMOSC will continue preparing for mobilization of requested resources but the mobilization of resources can only be confirmed by the Nominated Call-Out Authorities (Table 4-5).

Upon activation, AMOSC provides an immediate response service.

AMOSC Core Group of over 100 personnel re-validate their competencies every two years through additional training and exercises at AMOSC and relies on competence-based training for its skill-base. This ensures personnel have appropriate training and competency for oil spill response to ensure tasks, for example offshore containment and recovery, shoreline protection and deflection can be completed effectively. AMOSC Core Group personnel provide the surge capability in response to a Level 2 or 3 spill.

AMOSC will supply a liaison person directly to the IMT to assist the IMTL and Planning and Operations Officers.

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 38 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

4.2.4 AMSA

Eni has a Memorandum of Understanding (MoU) in place with Australian Maritime Safety Authority (AMSA) which outlines respective roles and responsibilities when responding to a hydrocarbon spill. AMSA will be the control agency for all vessel based spills in commonwealth waters, and Eni will provide any support as per arrangements outline in this OPEP where required.

AMSA manages the NatPlan, which has been developed in consultation with State/Territory government, the shipping, oil and gas exploration and production companies, chemical industries and emergency service organisations to maximise Australia's marine pollution response capability.

A master services agreement is in place between AMOSC and AMSA, enabling AMSA to hire equipment and personnel from AMOSC in accordance with the National Plan. These resources include both AMOSC's own resources and those that may be available from Participating Companies. The agreements in place with AMOSC allow resources from these companies to be hired through AMOSC by AMSA on behalf of the NatPlan (including DoT for WA State/NT waters).

4.2.5 OSRL

Eni has access to additional oil spill resources through Oil Spill Response Ltd (OSRL), which is based in Singapore and Southampton. An outline of the OSRL Service Level Agreement is provided in Table 4-4.

Anyone from Eni Australia can notify OSRL of an incident on the 24/7 Emergency Numbers detailed in Table 4-4. To avoid delays in accessing critical resources, OSRL will continue preparing for mobilization of requested resources but the mobilization of resources can only be confirmed by the Nominated Call-Out Authorities (Table 4-5).

Table 4-4: OSRL Service Level Agreement

Service	Service Standard
Response Notification Service / Advice	Available 24 hours a day, 365 days a year using contact details below. <ul style="list-style-type: none"> During normal office hours, calls will be transferred directly to the OSRL Duty Manager; or Out of hours, the switchboard will immediately make contact with the OSRL Duty Manager. The OSRL Duty Manager will call back within 10 minutes of receiving notification of the call. The DM will guide the caller to complete the Notification forms and Mobilization forms (see attached) as necessary, which can be sent to OSRL by fax or email.
	Emergency TELEPHONE Contact Singapore +65 6266 1566
	Emergency FAX Contact Singapore +65 6266 2312
Guaranteed Response	OSRL retains sufficient types and quantities of response equipment to meet a wide range of oil spill scenarios. Access to this equipment is on a first come first served basis regardless of membership level.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 39 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Service	Service Standard
Dedicated Resources: Personnel	<p>Personnel are on standby and available 24 hours a day, 365 days a year with equipment and logistics support to initiate, mobilise and sustain a response comprising of up to 18 fully trained and competent response personnel.</p> <p>A second team is also available in the event of a further incident from another Member.</p> <p>The response team will be mobilised from within OSRL's global pool of expertise by applying reasonable endeavours to provide the most appropriate competence and experience as determined by the Member requirements. Due consideration will be given to response travel time, initial availability and continuity of response.</p> <p>Technical Advice</p> <p>On request and at its discretion, OSRL will dispatch a technical advisory and response expertise to support response to an incident or potential incident. This resource of up to five personnel will be provided at no cost for the initial period normally of up to 5 days from arrival in-country. A confirmatory exchange of emails will be sufficient to mobilise this team. If these personnel are retained after the free (5 day) period, a signed Mobilisation form will be required, and these personnel will form part of the 18 person SLA entitlement.</p> <p>The skill set of the team will be determined by the specifics of the incident and needs. Typical initial roles of the team may include, but are not limited to the following tasks:</p> <ul style="list-style-type: none"> • Technical advice and incident management coaching within the command centre; • Development of an Incident Management Plan; • Tier 1 / 2 equipment readiness and training of contractors; • In-country logistics planning and support for inbound equipment; • Impact assessment and advice on response strategy selection; • SCAT and aerial surveillance / quantification surveys; and • Tactical response planning. <p>In the event that a full response is subsequently initiated, terms and conditions, including rates, will be as per the mobilising party's Participant or Associate Member Agreement.</p> <p>OSRL maintains a minimum pool of 80 dedicated response staff. Members are entitled to the number of response staff shown above, however, in the event that more are required, this may be approved on a case by case basis. If additional staffs are provided, it is on the condition that they may be recalled by OSRL in the event of a further incident response.</p>

	eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 40 / 140
				Validity Status	Rev. No.	
				PR-OP	0	

Service	Service Standard
Dedicated Resources: Equipment	<p>Response equipment is housed in secure facilities, customs cleared where required, ready for deployment. Equipment will be mobilised from the most appropriate location to provide the most timely and effective response.</p> <p>Wide range of pre-packaged equipment suited to a range of spill scenarios, including access to stocks of various dispersant types stored throughout OSRL's main response bases. These stocks are separate to those accessed through individual supplementary agreements, such as the GDS (Global Dispersant Stockpile).</p> <p>Global aerial dispersant coverage is provided through a range of aerial platforms and application systems:</p> <ul style="list-style-type: none"> • Senai, Malaysia: Hercules L-382 equipped with Rapid Installation Dispersant Delivery System; and • Doncaster, UK: Boeing 727-252F jet aircraft with built in aerial dispersant spray system. <p>Logistics support including:</p> <ul style="list-style-type: none"> • Access to global cargo network via contracted broker for aircraft of opportunity or access to OSRL's dedicated dispersant aircraft, the most appropriate option will be agreed with the member; • Vehicles and vessels for local equipment mobilisation; and • Access to aircraft of opportunity for passenger charter services through a contracted broker. <p>For an up-to-date list of OSRL equipment stocks, refer to www.oilspillresponse.com</p> <p>Access to equipment is restricted to 50% of the equipment by type available at the time of the request per member company. Additional equipment can be considered for release on request that is highly specialised or applicable to very specific response scenarios but may be subject to recall in the event of a further incident.</p> <p>An OSRL member may access 50% of the SLA dispersant stockpile. Access to more than 50% will be considered on a case by case basis and subject to the resupply of SLA dispersant stocks.</p>
Oil Spill Trajectory and Tracking	3D and 2D modelling available on request providing trajectory, stochastic and backtrack modelling.
Satellite Surveillance	Access to satellite imagery on a global basis through the agreement with our dedicated satellite provider.
Oiled Wildlife Advice	Access to expert oiled wildlife advice via OSRL's contracted provider Sea Alarm Foundation (SAF).
Unmanned Aerial Vehicles	Access to unmanned aerial vehicles (UAVs) through strategic partnerships on a best endeavour basis.

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 41 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

Table 4-5: OSRL and AMOSC mobilisation & nominated call-out authority

Name	Position	Phone	Email
Denis Palermo	Managing Director	0061 893201129 0061 473801597	denis.palermo@eni.com
Luigi Gini	Operations Manager	0061 893202639 0061 492165693	luigi.gini@eni.com
Joe Covic	HSEQ Manager	0061 893202611 0061 419833760	joe.covic@eni.com

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 42 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

5 ENI INCIDENT AND CRISIS MANAGEMENT STRUCTURE

5.1 ICM Organisational Structure

Eni's Incident and Crisis Management (ICM) organisation will be activated in the event of a Level 2/3 hydrocarbon spill regardless of the type of spill or jurisdiction. The ICM consists of the three core levels: CMT, IMT and Site Response. The principal duties of each level are shown in Figure 5-1.

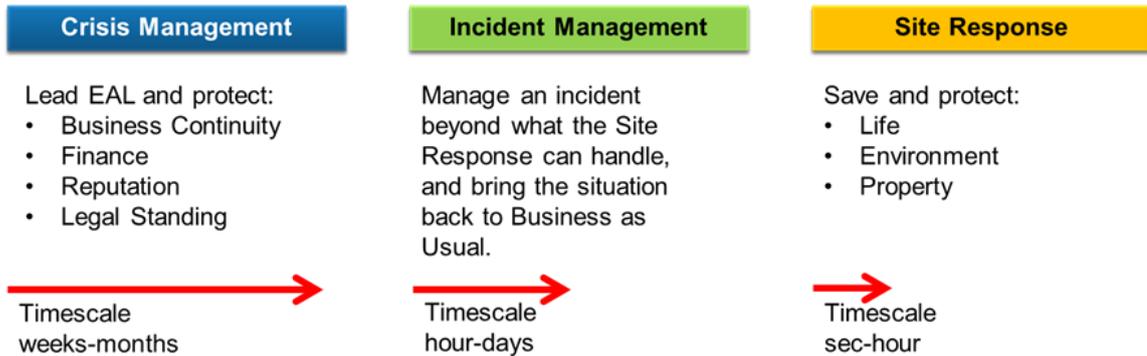


Figure 5-1: The ICM organisation's principal duties and timescales

5.2 Chain of Command

Eni Australia's ICM Chain of Command is a three-level structure. This is represented in Figure 5-2.

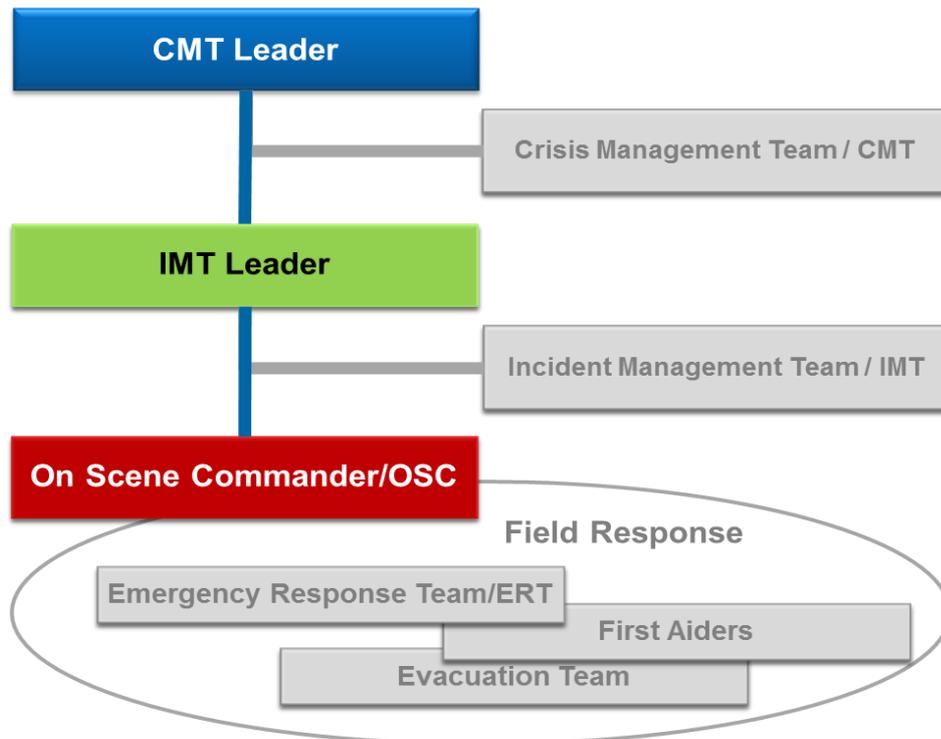


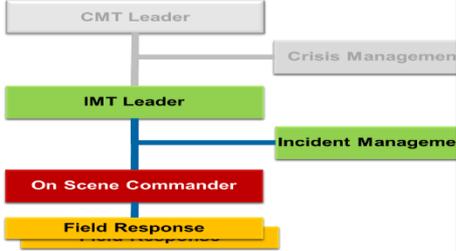
Figure 5-2: Incident and crisis management organisation chain of command

	eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 43 / 140
				Validity Status	Rev. No.	
				PR-OP	0	

5.3 Activation

Activation of the ICM organisation is to be executed in the following steps (Table 5-1).

Table 5-1: Activation of levels in the ICM organisation

Severity Level	Activation & Notification	Illustration (Activated parts of the organisation in colour)
<p>Pre-alarm</p> <p>Any event, strictly defined as a process safety event or event generated on the equipment by natural risks, which does not lead to an emergency but is visible, audible or in any case noticeable by the population, Institutions, Administrations and Bodies responsible for health, safety and the environment and which may have a significant media impact at local or national level.</p>	<p>Operational response only</p> <p>IMT Informed</p>	
<p>Level 1</p> <p>An event that can be managed at site level with the personnel and equipment available on site, under the responsibility of the Employer.</p>	<p>Planned tactical response only</p> <p>IMT informed</p>	
<p>Level 2</p> <p>An event that can be managed at Subsidiary level under the responsibility of the Employer with assistance from the EAL IMT and from Authorities and public administrations at a local and regional level.</p>	<p>Planned tactical response</p> <p>IMT mobilised.</p> <p>Managing Director Eni Australia Limited informed</p> <p>CMT mobilised (MD Discretion)</p>	
<p>Level 3</p> <p>An event that can be managed at Subsidiary level under the responsibility of the Employer with assistance from the EAL IMT, CMT, Eni Upstream Head Quarter ERT and from Authorities and public administrations at a local, regional and national level.</p>	<p>Planned tactical response</p> <p>IMT mobilised</p> <p>CMT mobilised</p> <p>Eni Headquarter (HQ) mobilised</p>	

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 44 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

5.4 Site Response

Site or field response conducts the mitigation work and can involve Emergency Response Teams (ERTs), first aiders, evacuation team and oil spill response teams. OSCs is appointed by default as follows:

- Vessel Activities: Vessel Master; and
- Decommissioning Activities when the MODU is in the field: MODU OIM.

All Eni staff and contractors must report spills or observations of oil or oily substances on the sea immediately to the OSC, who in turn will notify the Offshore Representative (MODU or vessels) and Duty Officer.

If a vessel spill is within 500m of the MODU the Vessel Master will notify the OIM.

Additional forward facilities may be established in the field to:

- On site response management;
- Deployment of equipment or personnel; or
- Provision of services.

5.5 Location of the Incident Management Team

The IMT shall normally operate from the IMT room at Level 5; in the Perth Office. The team shall be able to operate with some of its members on remote locations.

The IMT shall also be equipped, trained and ready to operate from an alternative location as advised by the IMTL.

5.6 Incident Management Team

The structure of the IMT, including oil spill response support teams if required, is shown in Figure 5-3.

	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 45 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

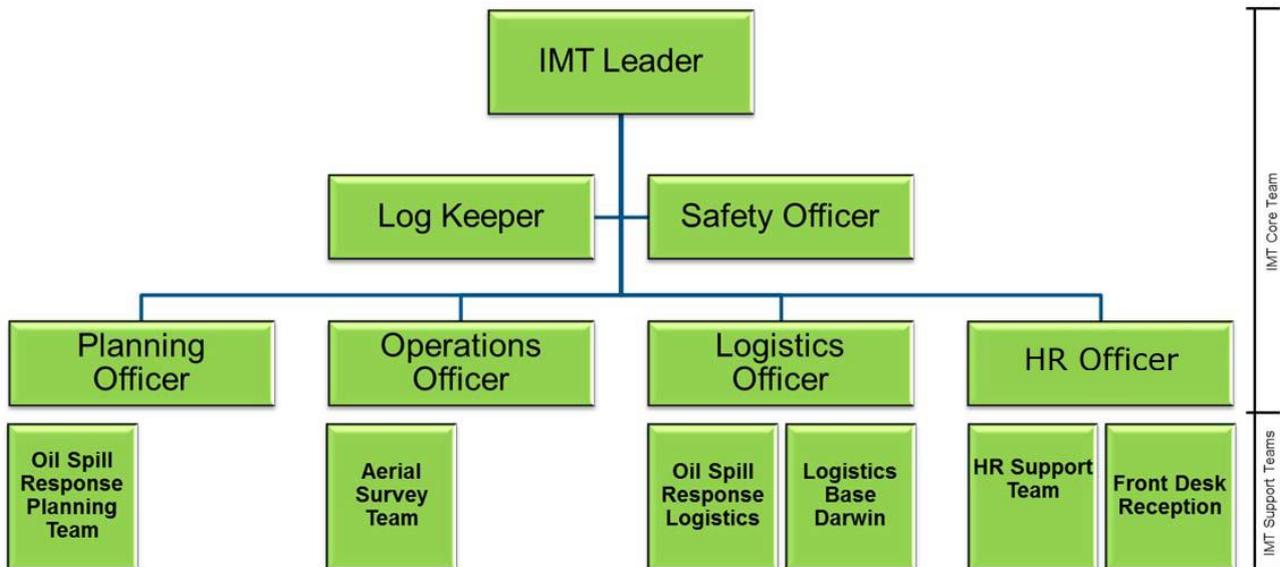


Figure 5-3: IMT and Support Teams for Oil Spill Response operation

5.6.1 IMT and Support Resourcing

Should an incident occur, the IMT Duty Officer would be notified immediately. This rostered role is on-call, 24 hours/day and 7 days/week. The IMT Duty Officer would then inform the IMTL who in turn will decide to activate the IMT or not depending on the nature and scale of the spill incident.

Eni manages its IMT resourcing through a range of arrangements including internal Eni Australia personnel, Eni Natural Resources and external support. Eni internal capability includes competent personnel available for IMT from various departments in Australia.

The personnel required for an oil spill incident, by order of importance is provided from the following sources:

- Eni Australia: the team will be partly or wholly involved in the incident. Currently, 14 engineers are working in the well operations department. The operations team, including decommissioning, will be added to this team;
- Eni Natural Resources: the Eni headquarter has a stablished ERT in place for managing the incidents globally (EMERG). Upon initiation of IMT in Eni Australia, EMERG will be notified and will be active involved from hour one of the incident. Depending on the extent of the incident, additional personnel will be mobilised to the country;
- AMOSC: the organisation has a pool of experienced personnel in the area of spill prevention and combat. AMOSC has expressed their capacity and readiness to assist operators, where required. Eni's master services contract with AMOSC gives access approximately 100 oil spill trained personnel through industry core group (refer Section 4.2.3);
- OSRL: OSRL has approximately 150 oil spill technical personnel available across their global bases. Eni has guaranteed access to 18 Response Specialists from OSRL for any incident under the Associate Membership Agreement (refer Section 4.2.5). Eni may request for additional resources from OSRL for major oil spill events and the resources will be available on a best endeavour basis; and

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	
					46 / 140

- Other operators in Australia; under the MOU agreement which has been re-signed by the majority of the operators in offshore Australia.

5.6.2 IMT Capability

Eni has an internal capability of up to 16 trained oil spill responders who can be deployed in the field in a spill response. Eni also has access to 18 Eni trained responders located at the Indonesian Natural Resources Headquarters. All IMT roles identified within Figure 5-3 will be filled with Eni personnel in first instance.

Eni also has additional redundancy in numbers to fill IMT functional positions by having access to external, trained spill responder resources, such as AMOSC and the AMOSC Core Group personnel (total of 50 personnel guaranteed), AMOSC mutual aid agreements (up to 100 personnel) and OSRL personnel (18 guaranteed). If required, additional personnel can be obtained via local resource agencies.

A IMT Resourcing Plan was developed (Appendix F) to demonstrate Eni's capacity to respond to a worst-case Level 2/3 oil spill. Eni will have access to sufficient incident management personnel to meet its IMT requirement for Petrel-3 and Petrel-4 activities. Refer to Table 5-2 for the key responsibilities of the main IMT roles anticipated for this OPEP and refer Table 9-1 for IMT training requirements.

	eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 47 / 140
				Validity Status	Rev. No.	
				PR-OP	0	

5.6.3 Roles and Responsibilities

Table 5-2: Main responsibilities of key roles involved in an oil spill response

Role	Main Responsibility
Non IMT/CMT	
On Scene Commander (OSC) - MODU OIM (Decommissioning) - Vessel Master (Vessel Activities)	<ul style="list-style-type: none"> Assess situations/incidents and develop the IAP; Single point of communications between site/MODU and IMT; Communicate the incident action plan and delegates actions to the Incident Coordinator; Manage the incident in accordance with Petrel Emergency Response Plan, Third Party Incident Response Plan; Coordinate medical evacuations as required; Make initial verbal notifications about incident; Prepare POLREP form; and Submit POLREP form (Level 1 spills).
Vessel Master (note, may also have role of OSC)	<ul style="list-style-type: none"> Make an initial evaluation of vessel-based spill, establish its level and assesses whether the incident has the potential to escalate; Prepare and submit POLREP form; Notify and report vessel-based spills to AMSA JRCC; and Notify the OIM on spill if observed within 500m of the MODU.
Offshore Representative (vessel activities and petroleum activities)	<ul style="list-style-type: none"> Advise Duty Officer of spill incidents.
HSEQ Manager	<ul style="list-style-type: none"> Ensuring annual oil spill response drills are undertaken Ensuring the OPEP is maintained
Environment Advisor	<ul style="list-style-type: none"> Oversight of operational and scientific monitoring; Support IMT in implementing this OPEP; and Maintain the OPEP and communicating the requirements of the OPEP.
Role	Main Responsibility
IMT	
Duty Officer / Operations Officer	<ul style="list-style-type: none"> Stand up satellite monitoring (KSAT); Manage all activities and response to resolve the incident; and Point of communications between IMT and OSC/ERT.
IMT Leader (IMTL)	<ul style="list-style-type: none"> Coordinate all onshore support in accordance with the OPEP; Submit POLREP form (Level 2/3 spills); Set the response objectives and strategic direction; Oversee the development and implementation of Incident Action Plans; Oversee implementation of MoUs and contracted support for 'mutual aid'; Ensure coordination with external organisations/policies, etc; Prepare and review strategic and tactical objectives with the CMT; and Liaise with the CMT and provide factual information.

	eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 48 / 140
				Validity Status	Rev. No.	
				PR-OP	0	

Role	Main Responsibility
Planning Officer	<ul style="list-style-type: none"> Lead the Planning Team in interpreting existing response plans and the development of incident action plans and related sub plans; Collect and document situational awareness information of the incident; Develop, document, communicate and implement Incident Action Plans to achieve incident objectives; Determine the status of action/s or planned activities under the Incident Action Plans and assess and document performance against the objectives; and Assess long term consequences of incident and plan for long term recovery.
Logistics Officer	<ul style="list-style-type: none"> Lead the Logistics Team in relation to the provision of supplies to sustain the response effort; Mobilise response equipment, helicopters, vessels, supplies and personnel; Provide transport and accommodation for evacuated personnel; Liaise with the Procurement Department to activate supply contracts and arrange procurements; and Coordinate authorities for search and rescue.
Log Keeper	<ul style="list-style-type: none"> Ensure the IMT can communicate and operate; Keep the IMT room sufficiently manned; Distribute manuals, contact lists and supporting information to IMT personnel; Record and collect all information associated with the response to the incident; and Maintain filing system for Incident Response.
Safety Officer	<ul style="list-style-type: none"> Manage notification to Designated Safety Authorities and liaise as required; Assist in the development of Incident Action Plans; and Oversee the development and implementation of incident Safety Management Plans as required.
HR Officer	<ul style="list-style-type: none"> Health and wellbeing of Eni personnel; Coordinating labour hire; and Areas of management include Security, Health, Relative Response, HR Support Services, HR Planning and Next of Kin.

5.6.4 Verification of IMT Resourcing and Training

A number of means of IMT resourcing and training verification methods are in place to ensure that the IMT remains in a state of readiness, these include:

- Maintenance of the Eni IMT registers (Australian and Indonesian), including personnel names and level of training;
- Review of the Eni IMT registers (Australian and Indonesian) approx. 2 months prior to activity commencement to ensure that mobilisation and personnel requirements are available to meet the resourcing requirements;
- Periodic testing (including approx. 2 months prior to activity commencement) of the IMT key contacts (on duty) to ensure that the IMT can be mobilised;
- Periodic IMT contact directory reviews (including approx. 2 months prior to activity commencement) for contact currency; and
- IMT testing arrangements, as per Section 9.5.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 49 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

5.6.5 Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria

IMT		
EPO: Maintain resourcing for the IMT pre-mobilisation and during mobilisation		
Control	EPS	MC
IMT resourcing and maintenance	Maintenance of numbers of personnel with the minimum training for the IMT roles (refer Table 9-1).	Audit of personnel against training requirements showing IMT personnel are trained to the levels in Table 9-1
	Eni will maintain access to additional IMT mutual aid capability, via contracts with AMOSC and OSRL.	Memberships/contractual arrangements with AMOSC and OSRL
	Maintenance of the Eni IMT registers (Australian and Indonesian), including personnel names and level of training.	Eni IMT registers (Australian and Indonesian) include personnel names and level of training. Registers show availability of personnel.
	Review of the Eni IMT registers (Australian and Indonesian) approx. 2 months prior to activity commencement to ensure that mobilisation and personnel requirements are available.	Eni IMT registers (Australian and Indonesian) include personnel names and level of training. Registers show availability of personnel.
	Periodic testing (including approx. 2 months prior to activity commencement) of the IMT key contacts (on duty) to ensure that the IMT can be mobilised	Records show that periodic testing of the IMT duty phone is occurring (including approx. 2 months prior to activity commencement)
	Periodic IMT contact directory reviews (including approx. 2 months prior to activity commencement) for contact currency	Records show that the IMT contact directory is reviewed periodically (including approx. 2 months prior to activity commencement).

5.7 Coordination with Other Organisations

Contact and coordination with other organisations and public authorities shall be managed in accordance with the HSE EAL Incident Management Plan ENI-HSE-PL-034. A summary is provided below.

5.7.1 Advisory Capacity

Technical advisors from AMOSC, AMSA and or OSRL would be embedded in the IMT in an advisory capacity (unless where specifically engaged to fill an IMT role).

Where appropriate, technical advisors may also be embedded within the Planning or Operations function.

	eni australia Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 50 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

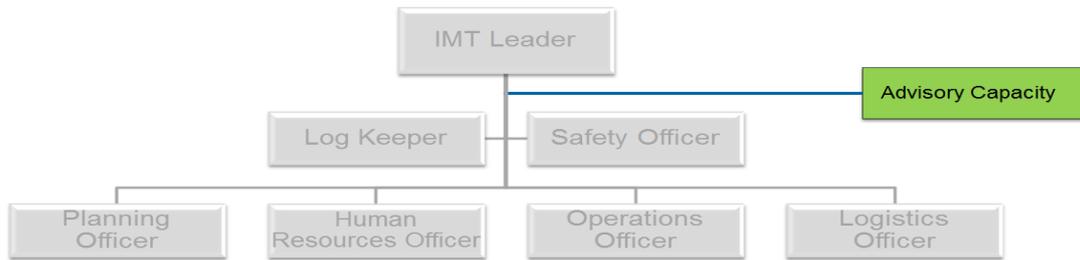


Figure 5-4: Advisory capacity to IMT

5.7.2 Off Scene Liaison

Liaison officers may be mobilised to third party ICM systems of Contractors or Government Agencies where required/requested.

The CMTL and IMTL will appoint Liaison Officers (LO) (not one of the CMT/IMT members), who will be embedded within the third party CMT/IMT and act as the point of contact between Eni and third party CMT/IMTs.

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 51 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

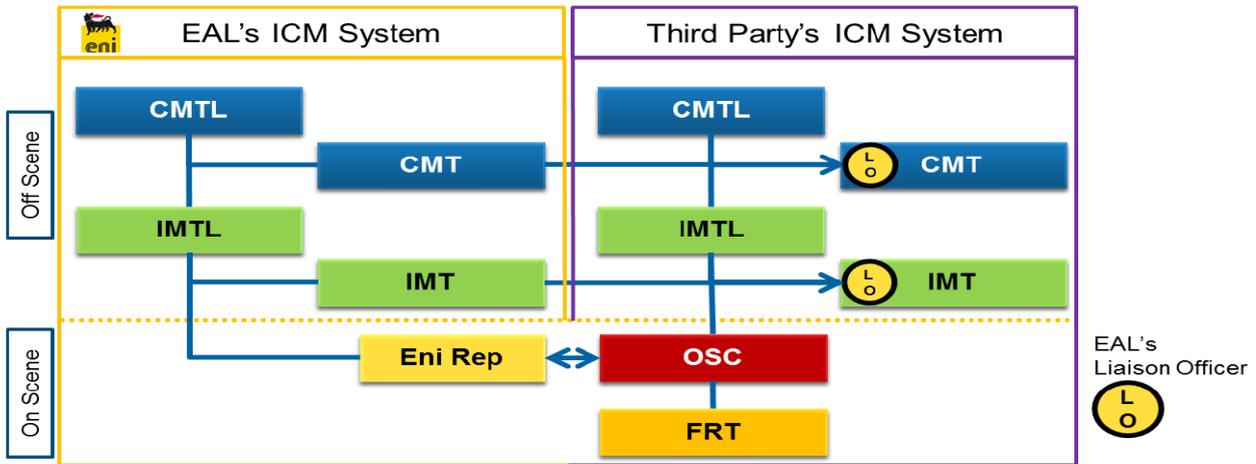


Figure 5-5: Principle of liaison when another organisation is the Controlling Agency

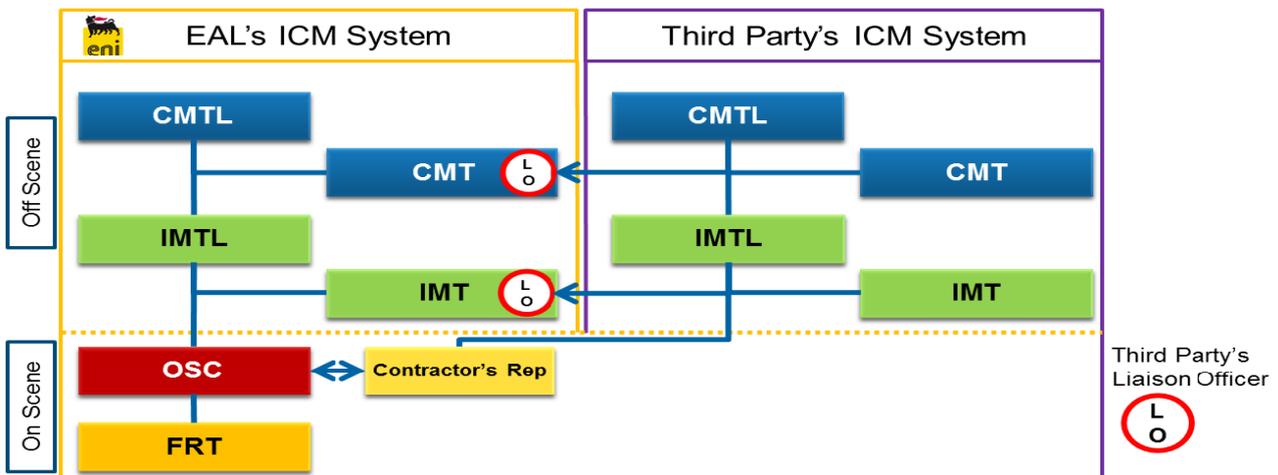


Figure 5-6: Principle of liaison when EAL is the Controlling Agency

5.8 Management of Public Information

Public information will be managed in accordance with the EAL Incident Management Plan ENI-HSE-PL-034 and Eni's Press Release Process.

Decision on Information Strategy as well as all media contacts, whether active or passive contacts, and all press releases shall be determined in the CMT, if CMT is activated, and if not, by HSEQ Manager.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 52 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

6 IDENTIFIED SPILL RISKS

6.1 Credible Spill Scenario

Unplanned loss of containment events for Petrel-3 and Petrel-4 have been identified during risk assessments of monitoring and decommissioning activities. Table 6-1 presents the WCSS identified for Petrel-3 and Petrel-4 monitoring and decommissioning. Further details including spill modelling are presented in the Petrel-3 and Petrel-4 Monitoring and Decommissioning EP.

Response strategies detailed in Section 8 encompass response to the WCSS detailed in Table 6-1 and are also applicable to all other scenarios of a lesser scale and extent.

Table 6-1: Petrel-3 and Petrel-4 Monitoring and Decommissioning Worst Credible Spill Scenarios

Scenario	Volume	Release duration	EP Section	Modelled
An instantaneous surface spill of marine diesel oil (MDO) of 300m ³ from a vessel incident at Petrel-4 (NT/RL1).	300m ³	instantaneous	EP Section 8.6	Yes

6.2 Marine Diesel Oil

Marine Diesel Oil (MDO) is categorised as a group II oil (light-persistent) according to the International Tankers Owners Pollution Federation (ITOPF 2020) and US EPA/USCG classifications. The classification is based on the specific gravity of hydrocarbons in combination with relevant boiling point ranges. It is important to note that some of the heavier components contained in the MDO (i.e. low volatile and persistent portions) will have a strong tendency to physically entrain into the upper water column in the presence of moderate winds (i.e. >12knots) and breaking waves but can re-float to the surface if these energies abate. The low viscosity (14cP) indicates that this oil will spread quickly when released and will form a thin to low thickness film on the sea surface, increasing the rate of evaporation.

Generally, about 4% of the MDO mass should evaporate within the first 12 hours (Boiling point (BP) < 180°C); a further 32.0% should evaporate within the first 24 hours (180°C < BP < 265°C); and an additional 54.0% should evaporate over several days (265°C < BP < 380°C). Approximately 10% (by mass) of MDO will not evaporate, though will decay slowly over time.

Table 6-2 and Table 6-3 show the physical characteristics and boiling point ranges for MDO.

Table 6-2: Physical properties MDO

Properties	Value
Density (kg/m ³)	890 (at 25°C)
API	27
Dynamic viscosity (cP)	14 (at 25 °C)
Pour point (°C)	-9
Hydrocarbon property category	Group II
Hydrocarbon property classification	Light persistent

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 53 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Table 6-3: Boiling point ranges for MDO

Name	Volatiles (%)	Semi-Volatiles (%)	Low Volatiles (%)	Residual (%)
Boiling point (°C)	< 180	180-265	265-380	> 380
	Non persistent			Persistent
MDO	4.0	32.0	54.0	10.0

6.3 Hydrocarbon Spill Modelling

To inform the risk assessment process, a 300 m³ MDO surface release was modelled by RPS (2024). The modelling was conducted at Petrel-4 for summer, winter and transitional seasons and is considered appropriate, although conservative, for informing the approximate spatial extent of potential impacts from a vessel collision event during the Petrel-3 and Petrel-4 monitoring and decommissioning activities.

Table 6-4 presents the parameters and justifications used in the modelling.

Table 6-4: Summary of parameters and justifications for marine diesel spill modelling

Parameter	Description
Description	MDO vessel spill in Commonwealth waters
Number of spill simulations	300 total (100 per season)
Seasons	Summer (January, February, December) Transitional (March, September to November) Winter (April to August)
Spill volume	300m ³
Oil type	Marine diesel oil
Release depth	Surface
Release duration	Instantaneous
Simulation length	30 days

6.4 Weathering and Fate

A series of weathering tests were conducted to illustrate the potential behaviour following a 50m³ instantaneous surface release of MDO. The tests included a model under calm wind conditions (5knots) and under variable weather conditions (2-24knots), assuming seasonal water temperature (27°C) and ambient tidal and drift currents. The first case is indicative of the potential weathering rates under calm conditions that would not generate entrainment, while the second case would be more representative of the moderate winds experienced over the region.

The mass balance forecast for the constant wind case shows that 36.1% of the diesel is predicted to evaporate within 24 hours. The remaining MDO on the water surface will weather at a slower rate and be subject to more gradual decay through biological and photochemical processes (Figure 6-1).

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	
					54 / 140

In the variable wind speeds test (Figure 6-2), characterized by stronger average winds and breaking waves, there is an increased entrainment of MDO into the water column. Approximately 24 hours into the spill, the forecast indicates that 80.5% of the MDO will have entrained, with an additional 15.0% expected to have evaporated. Hence, only a <1% of floating oil remains on the water surface. The low volatile and residual compounds are anticipated to entrain beneath the surface under conditions generating wind waves (winds approximately >6m/s).

While the MDO is entrained, it is forecast to decay at a higher rate of 3% per day or 21% after 7 days, attributed to biological and photochemical degradation. This is in contrast to a rate of 0.14% per day and a total of approximately 1% after 7 days for the constant wind case. Given the proportion of entrained MDO and its tendency to remain mixed in the water column, the remaining hydrocarbons are expected to undergo decay over several weeks.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

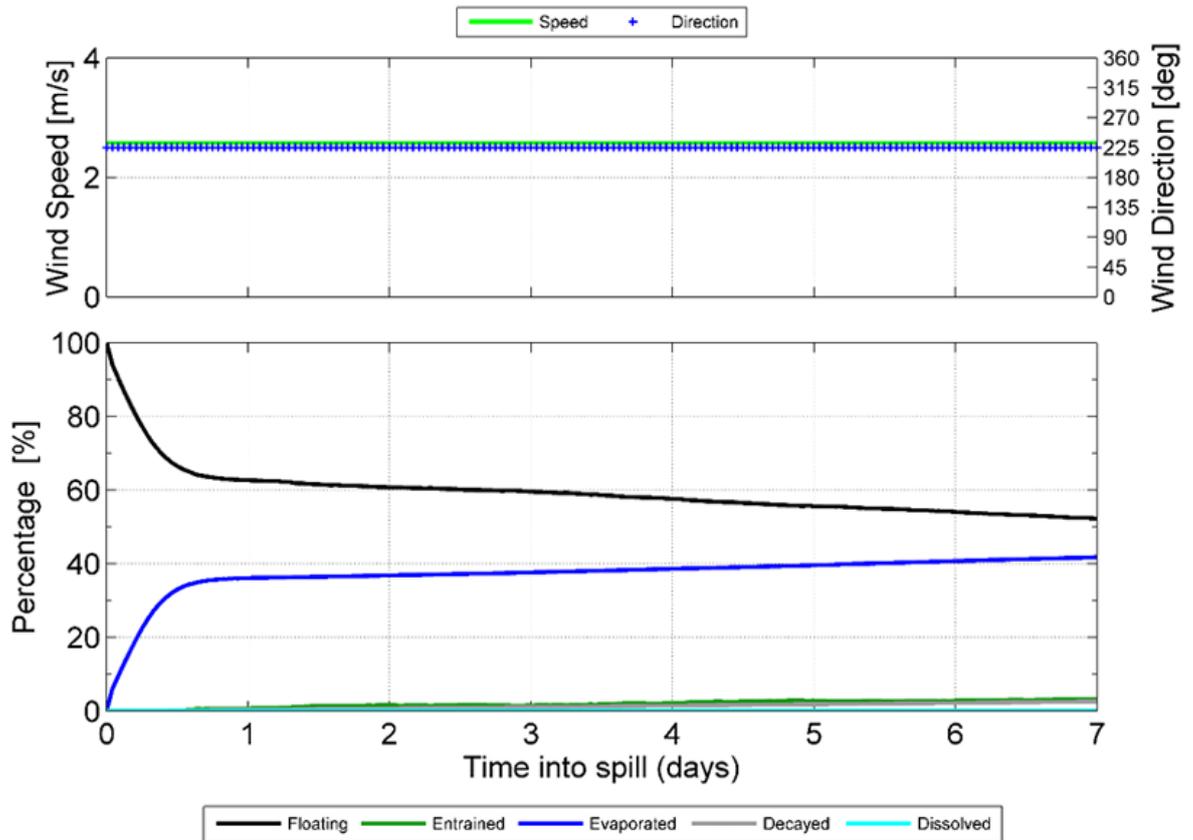


Figure 6-1: Mass balance plot for an instantaneous 50m³ surface release of MDO subjected to a constant 5 knot (2.6m/s) wind, currents and 27°C water temperature (RPS 2024).

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

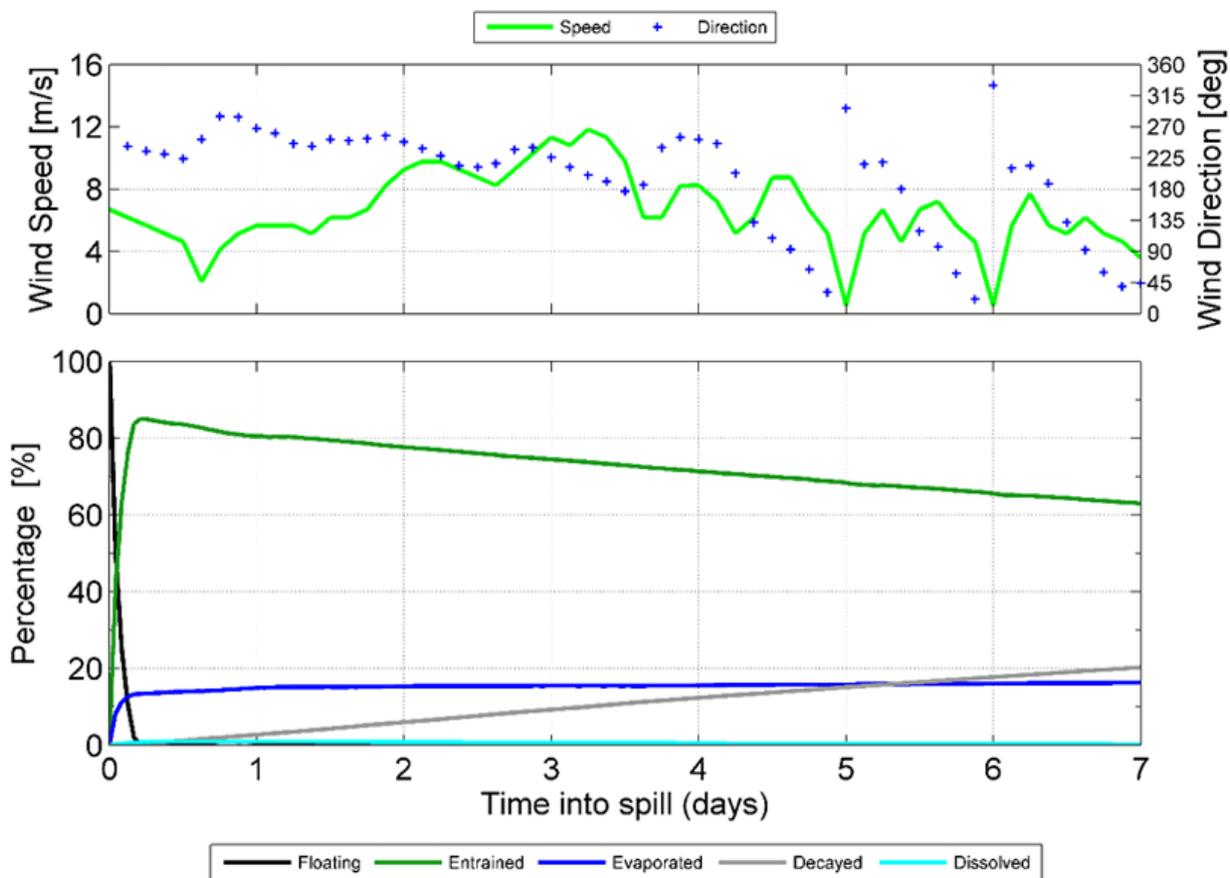


Figure 6-2: Mass balance plot for an instantaneous 50m³ surface release of MDO subjected to variable wind speeds (1–12m/s or 2–24knots), currents and 27°C water temperature (RPS 2024).

6.5 Response Planning Thresholds

Environmental exposure thresholds are addressed in Section 8.6 of the EP. In addition to the environmental exposure thresholds, response thresholds have been developed for response planning to determine the conditions that response strategies would be effective. The relevant response planning thresholds for this spill scenario are shown in Table 6-5.

Table 6-5: Hydrocarbon thresholds for response planning

Hydrocarbon threshold (g/m ²)	Description
>10	Estimated minimum threshold for commencing some scientific monitoring components (refer to Section Table 8-4).
>50 ¹	Estimated minimum floating hydrocarbon threshold for containment and recovery and surface dispersant application. <i>Note: Containment and recovery and surface dispersant are not applicable spill response strategies under this OPEP (see Table 1-6).</i>

	eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 57 / 140
				Validity Status	Rev. No.	
				PR-OP	0	

Hydrocarbon threshold (g/m ²)	Description
>100	<p>Estimated floating hydrocarbon threshold for effective containment and recovery and surface dispersant application.</p> <p>Estimated minimum shoreline accumulation threshold for shoreline clean-up.</p> <p><i>Note: Containment and recovery, surface dispersant and shoreline clean-up are not applicable spill response strategies under this OPEP (see Table 1-6).</i></p>

6.6 Hydrocarbon Spill Modelling Results

For the purpose of spill response preparedness, outputs relating to floating hydrocarbons and hydrocarbons accumulated on the shoreline are the most relevant (i.e. oil that can be diverted, contained, collected or dispersed through the use of spill response strategies) for the allocation and mobilisation of spill response resources.

Modelling results for dissolved and entrained oil for the worst-case scenarios have not been included in this OPEP given there are limited response strategies that will reduce subsurface impacts. Refer to Section 8.6.2.5 of the EP for dissolved and entrained thresholds and Section 8.6.3 for impacts to receptors.

No hydrocarbon accumulation on was predicted to occur on any shorelines at or above the low threshold of 10g/m² from the 300 spill simulations (RPS, 2024).

Table 6-6 summarises the maximum distances from the release location to floating hydrocarbon exposure zones. Floating oil concentrations exceeding 1g/m² could extend up to 99 km from the release location. The distances reduced to 43km and 12km as the thresholds increase to 10g/m² and 50g/m², respectively.

Table 6-6 presents the predicted floating oil exposure to receptors for each season.

Figure 6-3 to Figure 6-5 illustrates the extent of floating oil exposure zones for each season.

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 58 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

Table 6-6: Maximum distances from the release location to floating hydrocarbon exposure thresholds for surface spill of MDO (RPS 2024).

Season	Distance and direction travelled	Floating oil exposure thresholds		
		Low (1g/m ²)	Moderate (10g/m ²)	High (50g/m ²)
Summer	Maximum distance (km) from release location	40	28	17
	Direction	Northwest	South	Southeast
Transitional	Maximum distance (km) from release location	99	43	15
	Direction	West	West	Southeast
Winter	Maximum distance (km) from release location	46	33	12
	Direction	Northeast	Southwest	West

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 59 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Table 6-7: Summary of the stochastic modelling results of floating hydrocarbon exposure to receptors for a MDO spill during each season. Results were calculated from 100 spill simulations per season (RPS 2024).

Receptor		Summer						Transitional						Winter					
		Probability (%) of floating oil			Minimum time before floating oil exposure (hours)			Probability (%) of floating oil			Minimum time before floating oil exposure (hours)			Probability (%) of floating oil			Minimum time before floating oil exposure (hours)		
Category	Name	1 g/m ²	10 g/m ²	50 g/m ²	1 g/m ²	10 g/m ²	50 g/m ²	1 g/m ²	10 g/m ²	50 g/m ²	1 g/m ²	10 g/m ²	50 g/m ²	1 g/m ²	10 g/m ²	50 g/m ²	1 g/m ²	10 g/m ²	50 g/m ²
IMCRA	Oceanic Shoals	1	-	-	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KEF	Carbonate bank and terrace system of the Sahul Shelf	-	-	-	-	-	-	2	-	-	126	-	-	-	-	-	-	-	-
	Pinnacles of the Bonaparte Basin	-	-	-	-	-	-	1	-	-	101	-	-	-	-	-	-	-	-



eni australia

Company document identification
000694_DV_ES.HSE.0285.000_00

Owner document identification

Rev. index.

Validity
Status

Rev.
No.

PR-OP

0

Sheet of
sheets

60 / 140

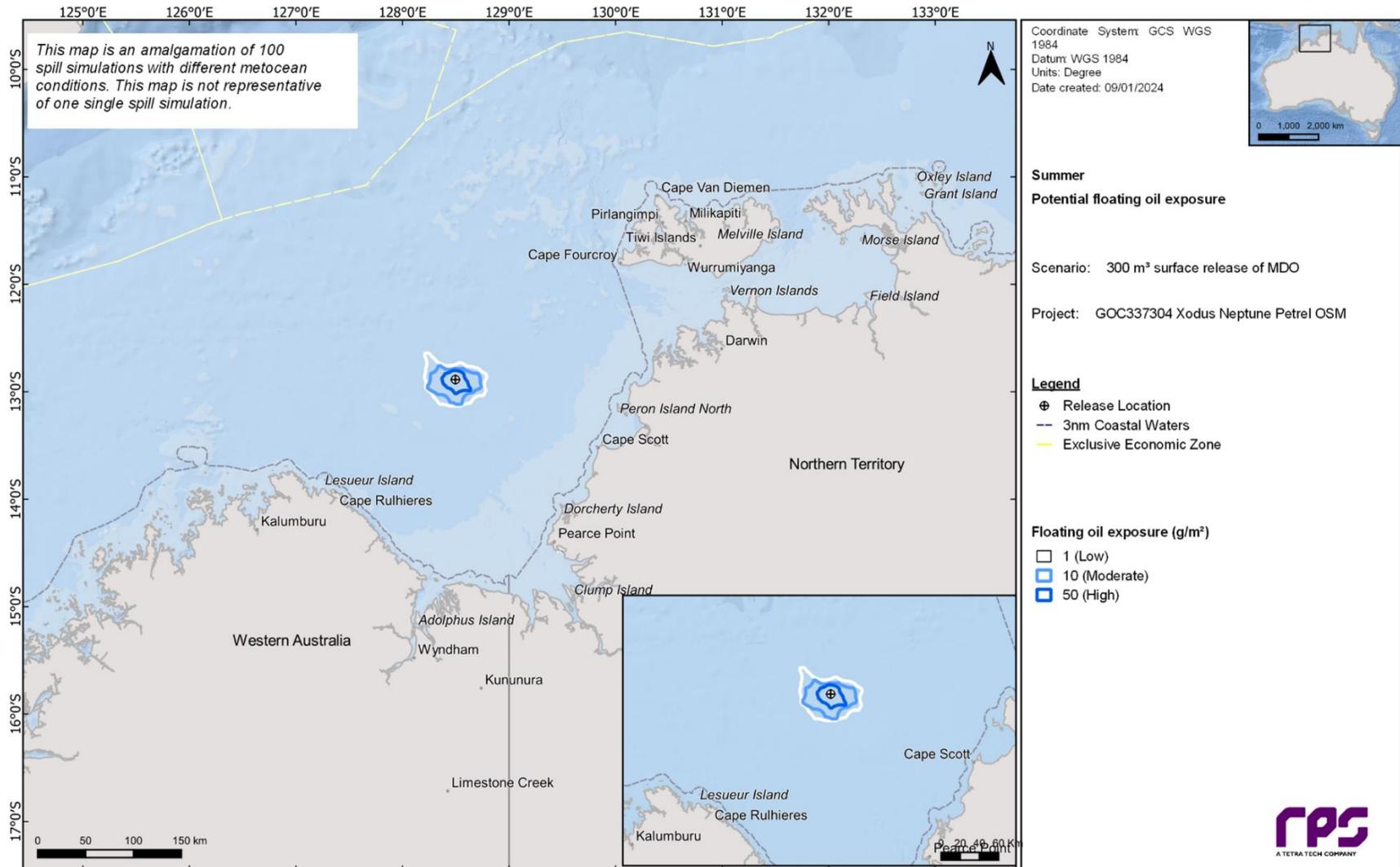


Figure 6-3: Stochastic modelling results of floating hydrocarbons exposure from a surface vessel spill during summer conditions at Low, Moderate and High exposure thresholds. Source: RPS 2024.



eni australia

Company document identification
000694_DV_ES.HSE.0285.000_00

Owner document identification

Rev. index.

Validity
Status

Rev.
No.

PR-OP

0

Sheet of
sheets

61 / 140

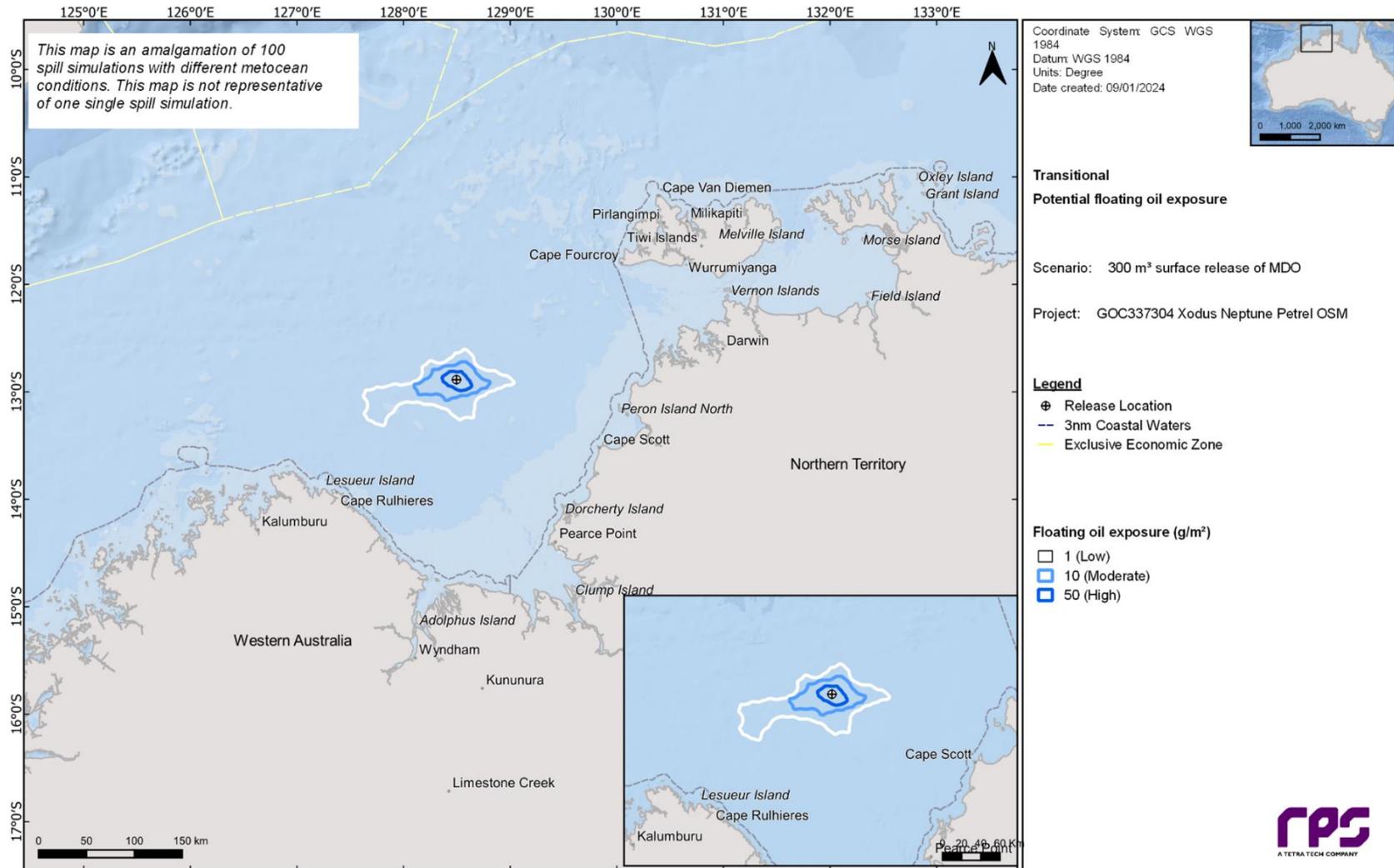


Figure 6-4: Stochastic modelling results of floating hydrocarbons exposure from a surface vessel spill during transitional conditions at Low, Moderate and High exposure thresholds. Source: RPS 2024.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 62 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

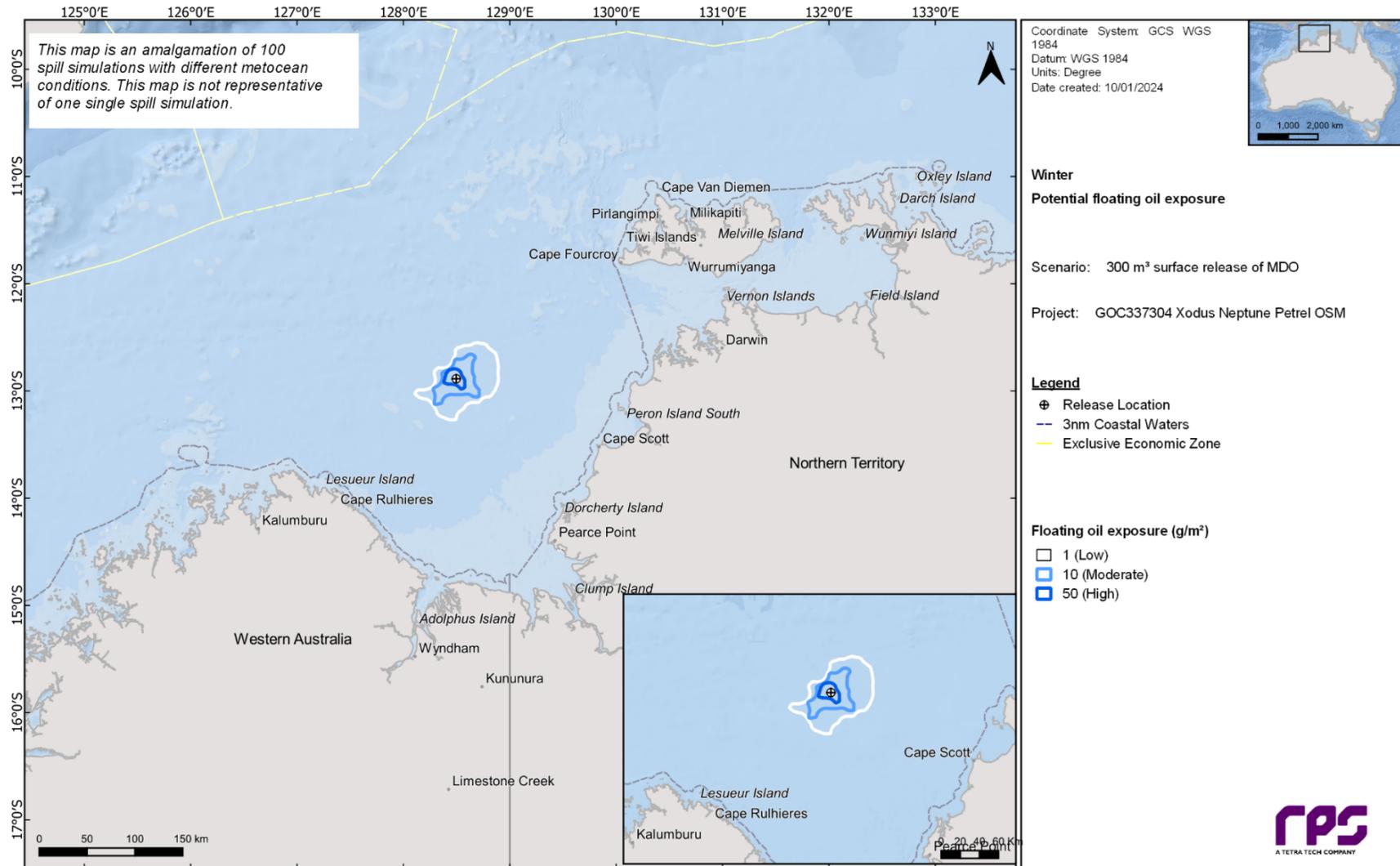


Figure 6-5: Stochastic modelling results of floating hydrocarbons exposure from a surface vessel spill during winter conditions at Low, Moderate and High exposure thresholds. Source: RPS 2024.

	eni australia Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 63 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

7 NET ENVIRONMENTAL BENEFIT ANALYSIS

7.1 Pre-operational NEBA

A pre-operational NEBA has been conducted to assess the net environmental benefit of different response strategies for spill during the at the Petrel-3 and Petrel-4 monitoring and decommissioning activities. Strategy identification is based on strategies which have been implemented in the past or considered to be good industry practice.

Table 7-1 was used to determine the net benefit of each response strategy and presents an evaluation on the implementation of these strategies based on their suitability for the spill scenarios identified for Petrel-3 and Petrel-4 (refer Section 6.1).

The key considerations taken into account in the assessment were:

- Properties and weathering profile of the MDO;
- Nature and scale of the WCSS; and
- Safety and environmental risks and impacts involved with the response.

Based on the identified spill risks for the Petrel-3 and Petrel-4 monitoring and decommissioning activities, the available oil spill response strategies have been adopted or rejected through assessment of hydrocarbon type and WCSS, as summarised in Table 7-1 below.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 64 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Table 7-1: NEBA summary and response option considerations

Strategy	Description	Applicability and Environmental Benefit	Adopted/Reject
Source Control	Vessel SOPEP.	Applicable to MDO spills from vessel. The SOPEP is the procedure for responding to a vessel spill.	Adopt
Monitor and evaluate	Monitor and evaluate is used to predict and monitor the trajectory and fate of the spill, to determine the effectiveness of response strategies and to identify and report on any potential/actual contacts to flora, that occurs.	<p>Primary response strategy.</p> <p>There are various specific techniques (vessel/aerial surveillance, oil spill modelling) within this response strategy which may be suitable. Use will be based on the spill fate / loss volumes as well as other considerations such as access to locations and environmental / metocean conditions.</p> <p>Monitor and evaluate is used to inform further response planning and execution and the operational NEBA.</p>	Adopt
Surface chemical dispersion	Chemical dispersant is applied to break down the hydrocarbons and allow/enhance dispersion into the water column, thereby preventing/reducing potential shoreline contact and increasing biodegradation.	<p>MDO is not conducive to chemical dispersion due to rapid evaporation and low surface concentrations.</p> <p>A weathering study on MDO by RPS in 2024 showed that the rate of evaporation of MDO is rapid with 36.1 – 80.5% of the volume of the MDO is lost within the first 24 hours depending on the wind speeds (see Figure 6-1 and Figure 6-2). In general, only 10% is predicted to remain at the surface as residual hydrocarbons (RPS, 2024).</p>	Reject
Physical dispersion	Physical dispersion is undertaken by running vessels through the hydrocarbon plume and using the turbulence developed by the propellers or hydro-blasting from vessel hydrants to break up the slick. The process enhances dispersion.	<p>MDO is not conducive to physical dispersion due to rapid evaporation and low surface concentrations.</p> <p>Physical dispersion is typically only effective on surface oil concentrations >50g/m². Surface hydrocarbons in the event of a vessel spill are only expected to exceed 10 g/m² in the immediate vicinity of the well for a very short period.</p> <p>A weathering study on MDO by RPS in 2024 showed that the rate of evaporation of MDO is rapid with 36.1 – 80.5% of the volume of the MDO is lost within the first 24 hours, depending on the wind speeds (see Figure 6-1 and Figure 6-2). In general, only 10% is predicted to remain at the surface as residual hydrocarbons (RPS, 2024).</p>	Reject

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 65 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Strategy	Description	Applicability and Environmental Benefit	Adopted/Reject
Containment and recovery	Containment and recovery of hydrocarbons can offer a preventive form of protection to sensitive receptors. Skimmers (mechanical) and booms will be used at sea. This strategy is only effective in calm conditions.	MDO is generally not conducive to containment and recovery strategies due to their rapid evaporation and low surface concentrations. Containment and recovery is effective on oil concentrations >50g/m ² . Surface oil concentrations from a MDO release is not predicted to exceed 10g/m ² and/or 50g/m ² surface oil thresholds (see Table 6-7). Containment and recovery is therefore not effective.	Reject
Protection and deflection	Protection and deflection activities involve the use of booms to deflect spills away from sensitive receptors and deflect spills to an area that provides increased opportunity for recovery activities.	MDO not conducive to protection and deflection strategies due to their rapid evaporation and low surface concentrations. Protection and deflection is effective on oil concentrations >10g/m ² . Surface oil concentrations from a MDO release is not predicted to exceed 10g/m ² and/or 50g/m ² surface oil thresholds (see Table 6-7). The modelling did not predict exposure of hydrocarbons at any threshold to any shoreline receptors. Protection and recovery is therefore not effective.	Reject
Shoreline Clean-up	Shoreline Clean-up activities involve the use personnel or machinery to remove hydrocarbons from impacted shorelines.	The hydrocarbon modelling did not predict exposure of hydrocarbons at any threshold to occur at any shoreline.	Reject
Oiled wildlife response (OWR)	Oiled wildlife response aims at preventing wildlife from becoming oiled and/or the treatment of animals that do become oiled.	Significant offshore OWR is not applicable due to the low concentrations of surface hydrocarbons expected and hydrocarbon types. However, as a precaution OWR is included as a response strategy. This response has the potential to cause negative impacts to wildlife if undertaken if not executed properly (with only trained personnel) Activities such as hazing (dispersing) of birds will not be undertaken given the low likelihood of a spill of a size presenting a significant risk of oiling wildlife unless at the direction of, and under direct supervision of trained personal from the Control Agency.	Adopt

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 66 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Strategy	Description	Applicability and Environmental Benefit	Adopted/Reject
		Capture and rehabilitation may be undertaken under the National Plan.	
In-situ burning	<p>Technique involves the controlled burning of oil that has spilled (from a vessel or a facility).</p> <p>On conducive hydrocarbons, and when conditions are favourable and conducted properly, in situ burning will reduce the amount of oil on the water.</p>	<p>For in-situ burning to be undertaken oil has to be thicker than 1-2 mm.</p> <p>MDO is not conducive to in-situ burning due to rapid evaporation and low surface concentrations.</p>	Reject
Scientific Monitoring	<p>This is the main tool for determining the extent, severity, and persistence of environmental impacts from an oil spill and allows operators to determine whether their environmental protection outcomes have been met (via scientific monitoring activities). This strategy also evaluates the recovery from the spill.</p>	<p>Scientific monitoring is especially beneficial for the purpose of monitoring entrained and dissolved oil impacts. Response strategies are generally targeted to manage the surface oil impacts.</p> <p>For information on scientific monitoring refer to the Petrel-3 and Petrel-4 Monitoring and Decommissioning Operational and Scientific Monitoring Plan (000694_DV_PR.HSE.0286.000).</p>	Adopt

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	
					67 / 140

7.2 Operational NEBA

The Control Agency IMT will use the pre-operational NEBA process to inform the development and refinement of IAPs.

As a component of the incident action planning process, an operational NEBA is conducted by the Control Agency with responsibility for the spill response activity.

Operational monitoring data would be used to help support the decision-making process for the Operational NEBA with specific consideration of:

- Identified sensitivities within the area potentially affected as informed by trajectory modelling;
- Potential effects of response strategies on each sensitivity are assessed in terms of their benefit or otherwise to the socioeconomic sensitivities; and
- All persons involved and data inputs have been considered for the analysis.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	
					68 / 140

8 RESPONSE STRATEGIES

This section details the priorities, equipment, resources and response strategies that would be deployed in the event of a spill from the Petrel-3 and Petrel-4 monitoring and decommissioning activities.

Response strategies may be implemented concurrently depending on the location and characteristics of the spill. The viability of implementing response strategies will be dependent on a number of factors including but not limited to environmental conditions, resources available and distance from sensitivities. Development of an IAP (Appendix B) will assess these various factors. A NEBA (as detailed in Section 7; Appendix C) will be undertaken for each operational period to determine which response strategies will provide a net environmental benefit to the environmentally sensitive locations that may be impacted.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 69 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

8.1 Source Control

8.1.1 Overview

In the event MDO is released from a vessel due to a tank rupture, source control procedures for a vessel collision are detailed in the vessel SOPEP, as applicable under MARPOL.

For support vessel collisions, the vessel's SOPEP will be followed to control the source, reduce the loss of hydrocarbons and prevent escalation of the incident.

The sections below provide an outline of source control activities noting that the Vessel SOPEP, where applicable, will provide a higher level of detail for specific incidents.

8.1.2 Response

Depending on the vessel-specific procedures for source control, the following activities could be evaluated immediately for implementation, providing it is safe to do so:

- Reduce the head of fuel by dropping or pumping the tank contents into an empty or slack tank;
- Consider pumping water into the leaking tank to create a water cushion to prevent further fuel inventory loss;
- If the affected tank is not easily identified, reduce the level of the fuel in the tanks in the vicinity of the suspected area if stability of the vessel will not be compromised;
- Evaluate the transfer of fuel to other vessels;
- Trim or lighten the vessel to avoid further damage to intact tanks; and/or
- Attempt repair and plugging of hole or rupture.

8.1.3 Termination Criteria

The source control response strategy will terminate once all the following criteria are satisfied:

- Release of hydrocarbon to the marine environment has ceased and the workplace environment is deemed environmentally safe and free of hydrocarbon.
- For refuelling spills, release of hydrocarbon into the marine environment has ceased and the workplace environment is deemed environmentally safe and free of hydrocarbons.
- For vessel tank rupture, the cargo in the ruptured fuel or storage tank is secured and release to the marine environment has ceased.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 70 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

8.1.4 Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria

SOURCE CONTROL		
EPO: Stop the release of hydrocarbons into the marine environment		
Control	EPS	MC
Vessel Spill Response Plan (emergency management plan/SOPEP)	Vessel has and implements a vessel emergency management plan or SOPEP pursuant to MARPOL Annex I.	Approved vessel emergency management plan or SOPEP
	Vessel emergency management plan or SOPEP spill response exercises conducted prior to activity commencement to ensure personnel are prepared.	Spill exercise records or evidence of a spill exercise

8.2 Monitor and Evaluate

8.2.1 Overview

The following sections summarise the key methods used, more detail is provided in the Petrel OSMP (000694_DV_PR.HSE.0286.000) (operational monitoring programs 1 and 2 [OMP1 and OMP2]).

The ongoing monitoring and evaluation of the oil spill is essential to maintaining situational awareness. Situational awareness based on the likely fate and trajectory of the spilt oil is fundamental to putting in place an oil spill response that will be efficient and effective.

Based on the potential impact area, Eni will use a variety of methods to gain and maintain situational awareness of the spill. Monitoring and evaluation will be undertaken for any level size to monitor the location of the spill and state of natural weathering.

There are five key methods for monitoring a spill:

1. Oil spill trajectory modelling (OSTM);
2. Satellite tracking buoys;
3. Vessel surveillance;
4. Aerial surveillance; and
5. Satellite surveillance.

The use of these techniques will be based on the spill fate / volumes as well as other considerations such as access to locations and environmental / metocean conditions.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	
					71 / 140

If criteria are triggered, monitoring programs in the Petrel-3 and Petrel-4 OSMP (000694_DV_PR.HSE.0286.000) shall also be undertaken as part of the monitoring and assessment response. Through AMOSC, Eni has access to the NatPlan environmental mapping resource, the Oil Spill Response Atlas (OSRA). OSRA utilises a Geographic Information System platform and maps sensitive habitats and areas in Australian waters that could be potentially impacted by an oil spill and will be used to supplement environmental data on potentially affected sites as described in the EP and relevant baseline studies.

8.2.2 Capability and Resources

This strategy is summarised in Table 8-1, highlighting the minimum time standard for deployment upon activation.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 72 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Table 8-1: Monitor and evaluate strategy summary

Task	Outcome	Resources	Location	Resource owner	Minimum standard
Visual observation	Identify extent and direction of oil, visual characteristics. Manual calculations estimating likely spill trajectory and time scales to contact environmental sensitivities.	1 x on-site observer	On-site	Eni	Immediate (visual observations). Within 3 hours (spill trajectory calculations).
Oil spill trajectory modelling	Forecast the behaviour of the surface slick. Identify and assess risks to environmental sensitivities within the moderate exposure area. Inform development of the IAP.	APASA, via AMOSC	Fremantle, WA	AMOSC	Within 24 hours
		HSE Panel consultants	Perth, WA	Eni	
Determination of surface and dispersed oil trajectory and fate	Identify the likely trajectory and fate of the spill and dispersed oil, timeframes for the oil (surface or dispersed) to interact with environmental sensitivities.	One person with oil spill assessment training.	Fremantle, WA	AMOSC	Within 24 hours of OSTM being undertaken.
Satellite tracking buoys deployed	Follow the trajectory of the spill front.	Satellite tracking buoys available from AMOSC	On-site	Eni to keep buoys on support vessels or the MODU during monitoring and decommissioning activities	Within 96 hours of spill event
Visual observation – from vessels of opportunity	Identify extent and direction of oil, visual characteristics.	As available	On-site	As available	Within 24 hours

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 73 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Task	Outcome	Resources	Location	Resource owner	Minimum standard
Visual observation – from chartered vessels	Identify extent and direction of oil, visual characteristics.	One Vessel One Observer	On-site	Eni May also engage through TOLL	Within 72 hours
Visual observation – from aircraft/ helicopter	Identify extent and direction of oil, visual characteristics.	One trained observer	Fremantle, WA	AMOSC, AMSA or OSRL	Within 24 hours
		One Aircraft (Eni approved aviation providers)	Darwin, NT Perth, WA	Eni contractors	
		One Aerial support base	Perth, WA	To be confirmed between AMOSC and Eni	
Satellite imagery	High fidelity photographs using different spectrums to identify the trajectory of the oil.	KSAT	N/A	Eni or AMOSC	Within 24 hours and every 24 hours thereafter.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 74 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

8.2.3 Oil Spill Trajectory Modelling

Real time oil spill modelling will be used to estimate the likely movement and behaviour of the spill and will be verified by field observations. The modelling will be sourced, via AMOSC, within 24 hours using their 24/7 emergency capability. The location of the slick predicted by oil spill modelling will be verified by field observations. Preliminary estimations using visual observations from the field and manual calculations will be available within approximately three hours to inform the mobilisation of equipment and resources in preparation for potential response strategies.

8.2.4 Satellite Tracking Buoys

Satellite tracking buoys will be deployed in the event of a Level 2 or 3 spill. Deployment will be made from the support vessel at the leading edge of the spill plume to:

- Monitor movement of surface oil; and
- Qualify and assist surveillance monitoring.

Tracking buoys are available through AMSA and AMOSC, 96 hours after mobilisation, see Table 3-1.

8.2.5 Vessel Surveillance

Vessel surveillance will involve visual monitoring from vessels of opportunity, which may be engaged immediately in the event of a spill. Vessel surveillance may assist in determining if additional response actions are required.

Within 12 hours of a spill, the IMT Logistics Officer will identify any vessels within the immediate area with a capability to assist with the response and determine if weather conditions are suitable for vessel surveillance. The IMT will also determine whether there are any unacceptable safety risks that may preclude vessel surveillance, such as the presence of gas and Volatile Organic Compounds on the sea surface and continue to monitor for these risks.

The IMT Logistics Officer may identify vessel of opportunity by making contact with Shipping Agents within Darwin (as specified on the Darwin Port Handbook).²

Eni may also engage through TOLL all vessel operators and owners in WA, NT and Singapore to charter suitable vessels. TOLL has contracted ISS as Toll's (Australian) national emergency responder. Contact details below:

² Darwin Port Handbook is available at: <<https://www.darwinport.com.au/trade/port-handbook>>

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 75 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Company	Function	Contact Details
TOLL	ISS emergency response	ISS 24/7 emergency responder: 1300 131 001 or 1800 639 621 or +61 (03) 8545 1000
	Reception (Eni)	+61 8 9320 1111
	Logistics – Support (Eni)	+61 488 101 637

Visual observations from chartered vessels occur within 72 hours of mobilisation.

Vessel surveillance will incorporate operational monitoring studies as outlined in the Petrel-3 and Petrel-4 OSMP (000694_DV_PR.HSE.0286.000), this will involve various monitoring and sampling methodologies of water to determine the extent of surface, entrained and dissolved hydrocarbons in the water column and near sensitive receptors. Guidelines on how to estimate spill volumes at sea are provided in Appendix E.

8.2.6 Aerial Surveillance

Eni has contracts in place with Offshore Services Australia, PHI and Hardy Aviation.

Contact for aerial surveillance is provided below:

Company	Contact Details
Offshore Services Australia Truscott Operations	OSA.TSTOPS@chcheli.com +61 8 9161 4072
PHI	phibmeops@phi-int.com +61 8 9138 7719
Hardy Aviation	ops@hardyaviation.com.au + 61 427 278 110

Aerial surveillance will be undertaken for Level 2 and 3 spills. Visual observations may be undertaken from specially mobilised aircraft. Procedures for visually tracking the movement and behaviour of the spill are provided in Appendix E. Trained observers are to be present on the surveillance aircraft. Trained observers will be sourced from AMOSC, AMSA and OSRL to undertake the required aerial surveillance in the event of a spill.

Aerial surveillance may assist in determining if additional response actions are required. Minimum requirements are:

- One visual observer;

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 76 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

- One aircraft (helicopter or fixed wing); and
- One aerial support base (Darwin airfield).

If aerial surveillance is required, an over-flight schedule is developed by the IMT. The frequency of flights will be sufficient to ensure that the information collected during each flight (i.e., observer log and spill mapping) meets the information needed to direct response activities.

During each flight a photographic record and marine fauna sighting record sheet is completed for each marine fauna sighting made and recorded on the observer log.

Aerial surveillance would be used at the start of a spill to assess its trajectory (in conjunction with revised real-time oil spill modelling); data collected is vital to developing operational IAPs and deciding on appropriate initial and ongoing responses.

It would also be used during the response to monitor ongoing oil spill modelling, changes to spill and visual effectiveness and assessment of response strategies used.

Initial reconnaissance may be basic, whilst later observations may require more skill/calculations to estimate behaviour, therefore trained observers are critical.

For surveillance tasks, aircraft will have:

- Good downward visibility (e.g. helicopters or fixed wing aircraft with an over-fuselage wing);
- Space for observers, excluding pilot(s);
- Visibility from both sides;
- Pilot-observer and pilot to vessel communications; and
- Navigational aids to follow proposed flight path.

If acting in support of marine response, aircraft should be equipped with radios that allow direct communication with the vessels or other aircraft.

8.2.7 Satellite Monitoring

Eni has contracted Konsberg Satellite Services (KSAT) to provide satellite monitoring for its operations. Eni may also access KSAT through AMOSC.

KSAT provide high fidelity photographs using different spectrums to identify the trajectory of the oil. In case of a spill reported to KSAT by Eni, KSAT will activate its Emergency Response Team that is targeted to be assembled within 24 hours. The first image will be received within 24 hours of acceptance of the proposed acquisition plan.

KSAT can be contacted as below:

Company	Contact Details
KSAT	Direct phone: +47 77 60 02 51 Switchboard: +47 77 60 02 50

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 77 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

	Fax: +47 77 60 02 99
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8.2.8 Termination Criteria

Vessel-based surveillance is undertaken at scheduled intervals during daylight hours, and continues for 24 hours after the source is under control and a surface sheen is no longer observable, or

- Until no net environmental benefit is being achieved, or
- As directed by the Control Agency.

Aerial surveillance undertaken at scheduled intervals during daylight hours and continues for 24 hours after the source is under control and a surface sheen is no longer observable, or

- Until no net environmental benefit is being achieved; or
- As directed by the Control Agency.

Tracking buoy deployment will continue for 24 hours after the source is under control and a surface sheen is no longer observable, or

- Until net environmental benefit is no longer being achieved; or
- As directed by the relevant Control Agency.

Satellite monitoring will continue until no further benefit is achieved from continuing; or as advised by relevant Control Agency.

The 'monitor and evaluate' response strategy will terminate once all the following criteria are satisfied:

- The source of the spill is contained, and no more hydrocarbons are being leaked to the environment;
- Water and sediment quality monitoring demonstrates there are no longer any hydrocarbons above baseline levels (as determined from baseline/reactive monitoring data and/or control sites);
- Oil spill modelling indicates the coastline will not/no longer be impacted by surface or entrained oil; and
- Surveillance following cessation of the spill reports no visible sheen (daylight), i.e. a 'silvery/grey' sheen as defined by the BAOAC is not observable.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 78 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

8.2.9 Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria

MONITOR AND EVALUATE		
EPO: Gain situational awareness from monitor and evaluate techniques and predict the fate of the spill		
Control	EPS	MC
Oil spill trajectory modelling	Detailed modelling service available for the duration of the incident upon activation through AMOSC.	AMOSC Participating Member Contract
	Modelling can be sourced, via AMOSC, within 24 hours of activation. using their 24/7 emergency capability	AMOSC Participating Member Contract IAP documentation
Tracking Buoys	Tracking buoys are available through AMSA and AMOSC within 96 hours	Detailed in IAP documentation. AMOSC Participating Member Contract
Vessel surveillance	Visual observations from chartered vessels occur within 72 hours of mobilisation.	IAP documentation
	Vessel surveillance shall continue until termination criteria detailed in Section 8.2.5 have been met.	Criteria have been met prior to termination of the response strategy. Detailed in IAP documentation.
Aerial surveillance	Visual observation – from aircraft/ helicopter are made within 24 hours of mobilisation.	IAP documentation
	Trained observer is mobilised and making visual observations within 24 hours of mobilisation.	IAP documentation
	Aerial surveillance shall continue until termination criteria detailed in Section 8.2.6 have been met.	Criteria have been met prior to termination of the response strategy. Detailed in IAP documentation.
Satellite imagery	Contract in place with satellite provider to enable access and analysis of satellite imagery.	Contract with KSAT (satellite imagery provider)
	First image received with 24 hours.	IAP documentation
	Satellite Imagery services available during response.	Contract with KSAT (satellite imagery provider) IAP documentation

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 79 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

8.3 Oiled Wildlife Response

8.3.1 Overview

In Commonwealth waters, DCCEEW has the jurisdictional authority for wildlife, with AMSA (vessel spills) as Control Agency.

The modelling conducted by RPS for this project did not predict any hydrocarbon exposure to either State/Territory waters (RPS 2024).

Due to the characteristics of the MDO and the offshore open water environment OWR response is not anticipated to be required.

8.3.2 Capability and Resources

Eni would implement an oiled wildlife response that is appropriate to the nature and scale of the spill event. Due to the characteristics of the MDO, large numbers of oiled wildlife is unlikely. The below sections detail Eni's capability if oiled wildlife were encountered.

Table 8-3 presents a summary of the oiled wildlife response resources and availability timelines that Eni has access to if a OWR is required. Regional transport times are shown in Figure 3-1. Oiled wildlife equipment available to Eni and the time to mobilise are presented in Table 8-2.

The equipment in Table 8-2 can treat up to 600 wildlife per day by day 6 once mobilised.

Oiled wildlife response containers and kits which can be activated are located in Fremantle, Dampier, Darwin, Townsville, Sydney and Geelong.

The AMOSC oiled wildlife response equipment is based in Fremantle and comprises an Oiled Wildlife Container for washing up to 50 oiled birds per day.

OSRL OWR equipment is stored in Singapore.

Additional personnel can be accessed through a labour hire contract with TOLL.

Each oiled fauna kit provides the capability to treat approximately 100 wildlife. Each containerised washing station can treat up to 250 wildlife for a five-day period.

Table 8-2: Oiled wildlife stockpiles available to Eni

Resource Owner	Type of Equipment and Number	Available to be mobilised
AMOSC	1 x oiled fauna kit (Dampier)	Day 1
	1 x portable containerised washing station (Fremantle)	Day 2
	1 x oiled fauna kit (Karratha)	
	1 x oiled fauna kit (Exmouth)	
	1 x oiled fauna kit	Day 3

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 80 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Resource Owner	Type of Equipment and Number	Available to be mobilised
	1 x portable containerised washing station 2 x oiled fauna kits	Day 5
OSRL	Equipment to support intake and triage; cleaning and rehabilitation and a wildlife rehabilitation unit.	Day 6

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 81 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Table 8-3: Oiled wildlife strategy summary

Task	Outcome	Resources	Location	Resource Owner	Minimum Standard
Assessment	Assessment of wildlife at risk.	Aircraft and vessels Eni contractor	Various	Eni	As part of the Operational and Scientific Monitoring Programs (OSMP) operational monitoring.
NEBA	Determine if response strategy will have a net environmental benefit. Inform development of the IAP.	Eni IMT	Perth, WA	Eni	Within 24 hours of spill being detected (ongoing NEBA every 24 hours and as required).
Oiled Wildlife Response Team	Oiled Wildlife Commander in IMT. Oiled wildlife coordinators onsite. Trained wildlife response personnel mobilised to site as required and lead teams of volunteers at staging centres. Establish treatment or rehabilitation centre for oiled wildlife.	Oiled Wildlife Advisor to provide assistance to the IMT.	Various	AMOSC	Oiled Wildlife Advisor notified within 24 hours of spill being detected. Assist with operational monitoring.
		Ability to provide labourers to assist in wildlife response	Various	Eni AMOSC	Notified within 24 hours of spill being detected.
Equipment	Equipment required for oiled wildlife response	Oiled fauna kits Portable containerised washing station	Karratha, WA Exmouth, WA Dampier, WA Fremantle, WA	AMOSC AMSA	1 kit available to be mobilised within 24 hours. See Table 8-2

	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 82 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

Task	Outcome	Resources	Location	Resource Owner	Minimum Standard
Vessels	Vessels can be utilised to support oiled wildlife response activities. Such as hazing, pre-emptive capture	Vessels through existing contracts with providers such as TOLL (see Section 8.2.5)	Darwin, NT Exmouth, WA	Eni	Within 72 hours
Rehabilitation	Move the oiled fauna to a rehabilitation centre if deemed necessary.	Transportation to a rehabilitation centre.	Various	AMOSC	Within 4 days of being captured.
	Resources to assist at staging centres.	Recruitment agencies to provide a sustainable supply of resources during the response.	Various	AMOSC	Onsite within 7 days.

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 83 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

8.3.3 Response Activities

Oiled Wildlife Response activities may include:

Stage 1: Wildlife first strike response;

Stage 2: Mobilisation of resources;

Stage 3: Wildlife reconnaissance;

Stage 4: Incident Action Plan wildlife subplan development;

Stage 5: Wildlife rescue and staging;

Stage 6: Oiled wildlife response facility;

Stage 7: Wildlife rehabilitation; and

Stage 8: Oiled wildlife response termination.

Oiled wildlife response core group first mobilises to the vessel(s) to the spill location, it may be some time before they can rely on the IMT supply chain for delivery of specialised equipment (for fauna capture, stabilisation, containment and transport to an oiled wildlife response facility). Oiled Wildlife Coordinators will mobilise with sufficient PPE and fauna triage equipment to last for at least 72 hours. This will enable larger quantities of equipment to be procured and mobilised aligned with the scale of the response.

8.3.4 Termination Criteria

The oiled wildlife response strategy will cease when:

- Collection forays fail to find any new oiled fauna;
- Oiled wildlife recovery operations have ceased; and
- All recovered animals have been cleaned and rehabilitated

As advised by an appropriately qualified panel of experts and directed by Control Agency.

8.3.5 Response Required and Adequacy

The capability detailed in Section 8.3.2 provides the capacity for a level 5 OWR (ability to treat approximately 600 wildlife by day 6 of mobilisation), with additional capacity available through the National Plan. Materials for holding facilities, portable pools, enclosures and rehabilitation areas would be sourced as required.

Hydrocarbons are not predicted to reach shorelines and volumes released will be low (see Section 6.2), therefore, an offshore oiled wildlife response is not anticipated.

	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 84 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

8.3.6 Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria

OILED WILDLIFE		
EPO: Conduct Oiled Wildlife Response to ensure impacts to wildlife are minimised.		
Control	PS	MC
Wildlife equipment response	Contracted capability for one fauna kit for immediate mobilisation, which can treat up to 100 individual fauna.	AMOSC Participating Member Contract
Wildlife responders	Wildlife responders to be accessed through existing contracts.	AMOSC Participating Member Contract

8.4 Operational and Scientific Monitoring Program

Eni has prepared the Petrel-3 and Petrel-4 OSMP (000694_DV_PR.HSE.0286.000) to ensure capability required for activities covered in this OPEP are met. The Petrel-3 and Petrel-4 OSMP (000694_DV_PR.HSE.0286.000) provides guidance on how and when monitoring data will be collected in the event of a Level 2 or 3 hydrocarbon spill.

The data generated will be used to:

- Determine the magnitude of short and long term environmental impacts associated with the spill (and its response), including the extent, severity and persistence of the impacts;
- Support the planning and execution of the hydrocarbon spill response activities set out in the OPEP;
- Inform remediation efforts; and if required
- Determine whether environmental performance outcomes have been achieved.

The Petrel-3 and Petrel-4 OSMP conservatively covers the complete capability that Eni has to conduct operational and scientific monitoring programs. This capability was developed for the accepted Blacktip OSMP (000036_DV_PR.HSE.0860.000) in response to a more significant hydrocarbon release. The specific operational monitoring programs (OMPs) and scientific monitoring programs (SMPs) that are anticipated to be relevant to a spill during Petrel-3 and Petrel-4 Monitoring and Decommissioning activities covered are summarised below.

8.4.1 Operational Monitoring Programs

The OMPs presented in Table 8-4 have been developed to obtain and process information regarding the nature and scale of the hydrocarbon spill and the resources at risk. The OMPs shown below are those that may be implemented in the event of a MDO spill during Petrel-3 and Petrel-4 monitoring and decommissioning activities.

Refer to the Petrel-3 and Petrel-4 OSMP (000694_DV_PR.HSE.0286.000) for further details on the OMP capability of these studies.

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 85 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

Table 8-4: Operational Monitoring Programs

Study	Study Title	Description
OMP1	Monitoring of Surface Hydrocarbon Distribution at Sea and Visual Observation of Megafauna	The study monitors the distribution of hydrocarbons at sea, including the extent and possible exposure to environmental receptors. The study includes: <ul style="list-style-type: none"> • Aerial and vessel observations; • Oil spill trajectory modelling; • Satellite imagery; and • Opportunistic observations of Marine Megafauna. Opportunistic observations of marine mammals, large cartilaginous fish or marine reptiles will be recorded to help inform the oiled wildlife response and SMP1.
OMP2	Monitoring of Hydrocarbons: Weathering and Behaviour in Marine Waters	The study obtains data on the physical and chemical properties of the hydrocarbon that is released. Data is used to inform the selection of response strategies and predict the potential impacts on the environment. The study may include in situ hydrocarbon and water sampling and analysis. Data from this study is used to assist in the determination of the extent of floating, entrained and dissolved hydrocarbons.

8.4.2 Scientific Monitoring Programs

The SMPs presented in Table 8-5 provides qualitative or quantitative data for the assessment of short term and longer-term impacts and recovery of sensitive receptors. The SMPs shown below are those that may be implemented in the event of a MDO spill during Petrel-3 and Petrel-4 monitoring and decommissioning activities.

Refer to the Petrel-3 and Petrel-4 OSMP (000694_DV_PR.HSE.0286.000) for further details on the SMP capability of these studies.

Table 8-5: Scientific Monitoring Programs

Study	Study Title	Description
SMP1	Wildlife Impact Monitoring and Sampling	The study includes determination of cause of death for wildlife carcasses (i.e. tissue analysis) (if any).
SMP3	Assessment of Fish for the Presence of Hydrocarbons	The study obtains data to determine the presence of hydrocarbons in fish, including species caught by commercial and subsistence fishermen. This includes in-field collection of fish species and lab analysis of the fish caught.
SMP4	Fisheries Assessment	The study collects data to assess the effects on fish and fisheries in the Joseph Bonaparte Gulf (JBG) arising from the hydrocarbon spill. This will involve desktop and in-field studies.
SMP6	Hydrocarbon Fate and Effects Assessment	The study obtains data to better understand the physical and chemical weathering of the hydrocarbon. This is used to understand and inform the assessment of impacts on the environment and will follow on from OMP2.

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 86 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

Study	Study Title	Description
SMP8	Socio-economic and heritage Assessment	The study assesses the potential socio-economic and heritage impacts and subsequent recovery pathways following a Level 2/3 hydrocarbon spill. This may include impacts and recovery of cultural and heritage features, indigenous heritage features, underwater cultural heritage features (e.g., shipwrecks), socioeconomic features (e.g., tourism and recreational activities, commercial shipping, other marine users).

8.4.3 Mobilisation

Operational Monitoring is activated in accordance with the Activation criteria within each of the individual Operational Monitoring Plans (OMPs), as defined in the Petrel-3 and Petrel-4 OSMP (000694_DV_PR.HSE.0286.000).

8.4.4 Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria

Refer to the Petrel-3 and Petrel-4 OSMP (000694_DV_PR.HSE.0286.000), Section 1.8.

8.5 Spill Response Termination

Upon conclusion of the spill response activity, Eni will complete the following tasks:

- Prepare detailed reports and collate all documents;
- Report on the performance objectives of each individual spill response that was mobilised;
- Undertake an inventory of consumables and prepare accounts;
- Arrange for the return of equipment;
- Arrange for the refurbishment of consumed equipment;
- Conduct an investigation into the cause of the incident and report to relevant authorities; and
- Assess long-term environmental monitoring requirements.

Response termination of the OMP and SMPs are described in the Petrel-3 and Petrel-4 OSMP (000694_DV_PR.HSE.0286.000).

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 87 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

9 TRAINING, EXERCISE AND AUDIT

9.1 CMT/IMT Training

All personnel nominated to the IMT, must be trained to an appropriate level and in appropriate procedures relevant to their role. Training specific to each IMT role is identified in the HSE Training Needs Analysis.

Predetermined IMT members shall endeavour to attend at least one IMT training event per year. Training activities consist of:

- Basic IMT training, comprising role specific training and team training, during which at least two scenarios shall be included;
- Refresher IMT training, during which at least one scenario shall be included, which may include oil spill;
- Relevant IMO or ICS training courses or refresher sessions;
- Project specific briefings, prior to the commencement of operation or if major changes take place to a project; and
- Level 2 and 3 emergency drills as per the 4YR Planning and Execution of HSE Emergency Exercises (ENI-HSE-PL-050).

Classroom training will be supported by regular exercises to ensure that acquired competencies are maintained. In addition, the minimum oil spill response training levels required for each Eni oil spill response related IMT positions are summarised below.

Table 9-1: Minimum oil spill response training requirements for Eni

Position	Minimum Training Level				
	IMT and oil spill response training*	Oil spill response IMO2	Oil spill response IMO3	Exercises and drills	Environment Scientific and Technical training
Frequency	Annual	Every 3 years	Every 3 years	Every 4 years	Every 3 years
IMT positions					
IMTL	✓		✓	✓	
Planning Officer	✓	✓		✓	
Operations Officer	✓	✓		✓	
Logistics Officer	✓	R		✓	
Safety Officer	✓	R		✓	R
Liaison Officer	✓	R		✓	
Non IMT position					
HSEQ Manager	✓	✓	R	✓	
Operations Manager	✓	✓	R	✓	
Well Operations Manager	✓	✓	R	✓	
Emergency Co-Ordinator	✓	✓	R	✓	R

	eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 88 / 140
				Validity Status	Rev. No.	
				PR-OP	0	

Position	Minimum Training Level				
	IMT and oil spill response training*	Oil spill response IMO2	Oil spill response IMO3	Exercises and drills	Environment Scientific and Technical training
HSE Advisor	✓	✓	R	✓	R
Environment Advisor	✓	✓	R	✓	✓

R = recommended

*Includes Basic IMT training, project briefings, IMT workshops, lunch and learns and other oil spill response training

The objective of training these personnel is to provide knowledge on the safe and efficient response to oil spills, initial assessments of spill risk, how to initiate response to an oil spill, protection priorities, correct response options, limitations of response options and equipment, and the needs of the media.

Predetermined IMT members shall endeavour to attend at least one IMT training event per year.

All members of the IMT are required to periodically participate in drills and oil spill response training workshops, which typically include:

- Scenario workshops;
- Overview to oil spill response;
- Overview of emergency response and IMT roles;
- Familiarisation with OPEP; and
- Toolboxes.

A toolbox upon implementation of an OPEP revision and also prior to activity commencement with the IMT members with the aim of informing them of any changes and familiarising them with the OPEP contents.

Verification of the IMT training and competency of personnel is included in Section 5.6.4.

9.2 Oil Spill Responders

In a spill, all response operations will be led by trained response personnel (AMOS Core Group, AMSA National Response Team, OSRL). These lead personnel as a minimum are to have IMO Level 1 in Oil Spill Response (operations) training (as specified by the NatPlan and AMOSPlan competency requirements). Before undertaking a response operation (wildlife clean-up), the lead person will provide additional training for the crew of responders that will specify:

- The response aims and objectives;
- Equipment/components involved;
- Practicalities of the response (deployment of equipment if required); and
- Safety aspects of the operations.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 89 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

These arrangements are appropriate to ensure all IMT personnel and vessel crews have the suitable level of training and competencies to perform their roles in an oil spill response.

Eni has access to external trained spill responder resources:

- National Plan: National Response Team (NRT) – Trained oil spill response specialists including aerial observers, containment and recovery crews deployed under the direction of AMSA and IMT in a response. The NRT is trained and managed in accordance with the National Response Team Policy, approved by the National Plan Strategic Coordination Committee (AMSA, 2014).
- Workforce Labour Hire companies capable of supplying > 2000 personnel at short notice. Personnel will take up roles within Oiled Wildlife Response Teams.

9.3 Competency of Vessel Contractors

All contractors will attend relevant project specific briefings and project inductions, which will include oil spill awareness and guidance regarding visual observation.

Field response activities by vessel contractors will be limited to surveillance and activities related to their normal position (e.g. logistics). Therefore, no other specialised spill response training is anticipated for vessel contractors.

9.4 Oil spill response organisations

AMOSC undergoes annual audits of its oil spill preparedness and ability to respond according to the service level agreement. The reports are available on the AMOSC online member portal.

OSRL maintains assurance of its oil spill preparedness and capabilities through regular external and internal organisational audits, equipment audits, weekly checks, and a global programme of exercises to confirm personnel readiness.

9.5 Testing Arrangements

Emergency response drills may be either desktop exercises or field-based response exercises. Testing of OPEP response arrangements will be conducted annually in accordance with the Eni 1Y and 4Y Emergency Exercise Plan.

Eni maintains a high standard of oil spill response preparedness through:

- Training Eni personnel, particularly those nominated to IMT or CMT (See Section 9.1);
- Compliance with the Eni Incident Management Plan (ENI-HSE-PL-034);
- Ensuring Contractors can respond as required (e.g. that they have sufficient levels of trained personnel and response equipment);

Conducting exercises and drills in accordance with the Eni 4YR Planning and Execution of HSE Emergency Exercises (ENI-HSE-PL-050); and

- Completing ongoing audits to review that the above are being effective.

	eni australia Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 90 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

The HSEQ Manager is responsible for ensuring annual oil spill response drills and assessment of the performance of the IMT is undertaken. In addition, regular audits of oil spill response preparedness is undertaken.

Testing will also ensure that the timings presented in the OPEP are able to be met, that contracts are in place and contractors have maintained their response capabilities as per the contract.

Specific to the Petrel-3 and Petrel-4 activities the following exercises / tests occur (refer to Table 9-2):

- A level 2/3 desktop exercise in accordance with the Eni 4YR Planning and Execution of HSE Emergency Exercises (ENI-HSE-PL-050);
- Testing of the OSMP (000694_DV_PR.HSE.0286.000), OSR provider arrangements, specific response strategies in line with the 4YR Planning and Execution of HSE Emergency Exercises (ENI-HSE-PL-050); and
- One exercise with AMOSC every 2 years.

Testing is organized in accordance with the Professional Operating Instruction for Planning and Execution of Emergency Drills, including setting an objective for the emergency drill, debriefing and preparation of an emergency drill report to summarise the evaluation of the drill and highlight strength and improvement areas.

On completion of testing, a drill/exercise report is produced to demonstrate the outcomes achieved against the tested objectives (defined prior to testing). The drill report typically includes:

- Lessons learned;
- Any improvement actions; and
- List of the participants.

The drill reports may also be used to issue action plans that will identify corrective actions needed and assign responsibilities, roles and schedules for their implementation. The drill report will identify the action tracking register used to track improvement/actions.

Table 9-2 summarises the exercise and testing arrangements and objectives.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 91 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Table 9-2: Testing arrangements plan and objectives

Arrangement	Schedule/frequency	Objective	Measurement criteria
IMT			
Oil spill exercises (scenario specific)	The IMT will conduct annual oil spill exercise, using NOPSEMA accepted Eni OPEPs. Oil spill exercises will be scheduled in the Eni 4YR Planning and Execution of HSE Emergency Exercises (ENI-HSE-PL-050).	IMT exercise objectives will include the IMT's ability to: <ul style="list-style-type: none"> Identify and notify relevant stakeholders within timeframes specified in the OPEP; Develop an incident action plan, including: <ul style="list-style-type: none"> appropriate use of data to inform response decision making; identification of sensitive receptors and protection priorities; determine secondary response strategies; and activation of relevant operational and scientific monitoring programs. Activate mechanisms/arrangements within timeframes specified in the OPEP and OSMP 	4YR Planning and Execution of HSE Emergency Exercises (ENI-HSE-PL-050) Exercise reports Confirmation of equipment and response personnel provision from service providers
Other			
National Plan Exercises	As determined by AMSA	Participate as required to ensure alignment between National Response and Eni Response.	Exercise reports.
Notification exercises	At least annually and prior to activity commencement	Test/check all communication and notification processes to service providers and regulatory agencies defined within the OPEP.	Documented communication test/check
IMT exercise in conjunction with AMOSC	Every 2 years.	The objectives of this joint exercise will be to: <ul style="list-style-type: none"> practice the Eni IMT activation of the AMOSC IMT; and practice the interface between the Eni IMT and AMOSC IMT personnel 	Exercise reports.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 92 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

9.6 Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria

OPEP Testing		
EPO: Spill arrangements are maintained and tested to respond to worst-case spill events		
Control	PS	MC
Maintain a state of readiness to respond to oil spill events	<p>The IMT will conduct annual oil spill exercises, using NOPSEMA accepted OPEPs.</p> <p>Oil spill exercises will be scheduled in the Eni 4YR Planning and Execution of HSE Emergency Exercises (ENI-HSE-PL-050).</p> <p>IMT exercise objectives will include the IMT's ability to:</p> <ul style="list-style-type: none"> • Identify and notify relevant stakeholders within timeframes specified in the OPEP; and • Develop an incident action plan, including: <ul style="list-style-type: none"> - appropriate use of SMV data to inform response decision making; - identification of sensitive receptors and protection priorities; - completion of an Operational SIMA to determine secondary response strategies; - assessment and activation of relevant operational and scientific monitoring programs; and - identify relevant (scenario specific) response strategy capabilities and practice mechanisms/arrangements to activate them, within timeframes specified in the OPEP. 	<p>4YR Planning and Execution of HSE Emergency Exercises (ENI-HSE-PL-050)</p> <p>Exercise reports.</p>
	<p>A minimum of one IMT exercise will be conducted in conjunction with AMOSC every 2 years.</p> <p>The objectives of this joint exercise will be to:</p> <ul style="list-style-type: none"> • Practice the Eni IMT activation of the AMOSC IMT; and • Practice the interface between the Eni IMT and AMOSC IMT personnel 	Exercise reports
	<p>Exercise findings and improvement opportunities will be recorded in the exercise report. The exercise report will identify the action tracking register used</p>	Exercise reports and action tracking register

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 93 / 140
			Validity	Rev.	
			Status	No.	
			PR-OP	0	

OPEP Testing		
EPO: Spill arrangements are maintained and tested to respond to worst-case spill events		
Control	PS	MC
	to track improvement opportunities to closure, to ensure the test objective can be achieved in the future.	
	All communication and notification processes to service providers and regulatory agencies defined within the OPEP are checked/tested annually and prior to activity commencement.	Documented communication test/check

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 94 / 140
			Validity	Rev.	
			Status	No.	
			PR-OP	0	

10 OPEP REVIEW AND AUDITS

The HSEQ Manager is responsible for ensuring that the OPEP is regularly revised and updated as required and for ensuring that any revisions are distributed. This OPEP will be kept up to date and will be reviewed:

- At least every two years;
- When major changes which may affect the oil spill response coordination or capabilities have occurred;
- A change in the availability of equipment stockpiles;
- Following routine testing of the plan (to incorporate, where relevant, lessons learned), or
- The introduction of a new or improved technology that may be considered in a response for this activity
- Change in the availability of personnel that reduces or improves preparedness and the capacity to respond; and
- After an actual emergency.

If national or state response frameworks and integration with these frameworks changes.

The deployment readiness and capability of AMOSC's oil spill response equipment and resources in Geelong and Fremantle is audited every two years by AMOSC member companies on behalf of AMOSC member companies, including Eni. In the intervening year between Audits the progress of Audit Actions will be followed up. The intent of this audit is to provide assurances to Eni and associated members of AMOSC's ability to respond to an oil spill incident as per the methods and responsibilities defined in Eni's Oil Pollution Emergency Plans.

The deployment readiness and capability of OSRL's oil spill response equipment and personnel in Singapore is audited every two years by the Emergency & Oil Spill Coordinator or other Australian member company (Petroleum Titleholder) through agreement. The intent of this audit is to provide assurances to Eni of OSRL's ability to respond to an oil spill incident as per the methods and responsibilities defined in Eni's Oil Pollution Emergency Plans.

10.1 OPEP Consultation

Consultation, agreements or contracts that support Eni's oil spill response strategies and tactics have been put into place with agencies and organisations throughout the development of the OPEP so that roles and responsibilities are understood and accepted.

The OPEP will be revised and updated should a stakeholder's position change after acceptance of this OPEP.

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 95 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

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 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 96 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

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ENI-HSE-PL-050 4YR Planning and Execution of HSE Emergency Exercises

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 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 97 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

APPENDICES

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	
					98 / 140

APPENDIX A

SPILL RESPONSE FORMS

	eni australia Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 99 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

APPENDIX A: SPILL RESPONSE FORMS



Marine Pollution Report Form
ENI-HSE-FR-028
Rev 00

POLREP		MARINE POLLUTION REPORT	
INCIDENT DETAILS			
Date of Incident: _____		Time of Incident (24 hr format): _____	
Location name/description: _____			
Incident Coordinates Latitude of spill _____		Longitude of spill _____	
Format of coordinates used (select one)			
<input type="checkbox"/> Degrees & decimal degrees	<input type="checkbox"/> Degrees, minutes & decimal minutes	<input type="checkbox"/> Degrees, minutes & seconds	
Description of Incident: _____			
POLLUTION SOURCE			
<input type="checkbox"/> Vessel	<input type="checkbox"/> Land (Specify) _____	<input type="checkbox"/> Other (Specify) _____	<input type="checkbox"/> Unknown
Vessel type (if known)	<input type="checkbox"/> Tanker	<input type="checkbox"/> Container	<input type="checkbox"/> Bulk
	<input type="checkbox"/> Fishing	<input type="checkbox"/> Defence	<input type="checkbox"/> Recreational
(Specify) _____			<input type="checkbox"/> Cargo
<input type="checkbox"/> Other			
Vessel name: _____		Flag State / Callsign: _____	Australian vessel? <input type="checkbox"/> Yes <input type="checkbox"/> No
POLLUTANT			
<input type="checkbox"/> Oil (type)	<input type="checkbox"/> Bilge	<input type="checkbox"/> Diesel	<input type="checkbox"/> HFO bunker
(Specify) _____		<input type="checkbox"/> Crude	<input type="checkbox"/> Unknown
<input type="checkbox"/> Other			
<input type="checkbox"/> Chemical	Name: _____		MARPOL cat / UN Nos: _____
<input type="checkbox"/> Garbage	Details/description: _____		
<input type="checkbox"/> Packaged	Details/description: _____		
<input type="checkbox"/> Sewage	Details/description: _____		
<input type="checkbox"/> Other	Details/description: _____		
EXTENT			
Size of spill (length & width in metres): _____			
Amount of pollutant, if known (litres): _____			
Has the discharge stopped? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
Weather conditions at site: _____			
<input type="checkbox"/> Photos taken	Details: _____		held by: _____
<input type="checkbox"/> Video taken	Details: _____		held by: _____
<input type="checkbox"/> Samples taken	Details: _____		held by: _____
<input type="checkbox"/> Items retrieved	Details: _____		held by: _____

	eni australia Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 101 / 140
			Validity Status	Rev. No.	
			PR-OP	0	



Marine Pollution Situation Report Form
ENI-HSE-FR-029
Rev 00

SITREP

MARINE POLLUTION SITUATION REPORT

Incident Name: _____ Ref. _____
No. _____

Priority Urgent Immediate Standard

Final SITREP? Yes No Next SITREP on: _____

Date: _____ Time: _____

POLREP Reference: _____

Incident location Latitude _____ Longitude _____

Brief description of incident and impact: _____

Overall weather conditions: _____

Summary of response actions to date: _____

Current Strategies: _____

Summary of resources available/deployed: _____

Expected developments: _____

Other Information: _____

**This form is to be completed with as much information as possible
(regardless of the size of the spill) and emailed to:**

Eni IMT Leader at <info@eniaustralia.com.au>

For any additional information please add extra pages as required

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 102 / 140
			Validity Status	Rev. No.	
			PR-OP	0	



GUIDANCE NOTE

Notification and reporting of environmental incidents

Document No: N-03300-GN0926 A710941

Date: 10/01/2024

1. General

- The titleholder has a duty to notify and report environmental incidents to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) under Regulations 47, 48, 49 and 50 of the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023.
- Regulation 47 requires the titleholder to notify NOPSEMA orally of a **reportable** environmental incident as soon as practicable but not later than two (2) hours after the first occurrence of the incident or after the time that the titleholder becomes aware of the incident.
- Regulation 47(3) requires the titleholder to give a written record of the notification to NOPSEMA, the Titles Administrator and the Department of the responsible State or Northern Territory Minister as soon as practicable after the oral notification.
- Regulation 48 requires the titleholder to give NOPSEMA a written report of a **reportable** incident as soon as practicable but not later than three (3) days after the first occurrence of the incident.
- Regulation 48(3) requires titleholders to give a copy of the written report to both the Titles Administrator and the Department of the responsible State or Northern Territory Minister within seven (7) days of giving the written report to NOPSEMA.
- Regulation 50 requires the titleholder to submit a **recordable** environmental incident report not later than 15 days after the end of each calendar month.
- Failure to notify and report environmental incidents to NOPSEMA are ***offences of strict liability***.
- The titleholder remains responsible for making notifications and other reports to other persons or organisations as may be required.

To make an oral notification to NOPSEMA of a reportable environmental incident call:

1300 674 472

A **reportable** environmental incident is defined in Regulation 5 as:

“Reportable incident, for an activity, means an incident relating to the activity that has caused, or has the potential to cause, moderate to significant environmental damage.”

The potential of an incident to cause moderate to significant environmental damage is determined during the preparation of an Environment Plan (EP). An EP should contain clear definitions of what is considered to be a reportable incident for a particular activity and should be referred to prior to notification of a reportable incident to NOPSEMA.

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 103 / 140
			Validity Status	Rev. No.	
			PR-OP	0	



If in doubt, notify NOPSEMA.

A **recordable** environmental incident is defined in Regulation 5 as:

"Recordable incident, for an activity, means a breach of an environmental performance outcome or environmental performance standard, in the EP that applies to the activity, that is not a reportable incident."

This Guidance Note and others on the NOPSEMA website are intended to provide general guidance to the industry as to the approach that NOPSEMA takes in carrying out its regulatory functions and exercising powers under the Commonwealth *Offshore Petroleum and Greenhouse Gas Storage Act 2006* and Regulations under that Act. The Guidelines should not be relied on as advice on the law, nor treated as a substitute for legal advice in any relevant situation.

2. Information Required for Environmental Incident Reporting

1. Material facts and circumstances must be described, including:
 - a. The activity name, site/facility name or location where the incident occurred.
 - b. Name and business address of the titleholder of the petroleum activity.
 - c. Time and date of incident.
 - d. Names and contact details of any witnesses.
 - e. Name/position/telephone number of person submitting these details.
 - f. Brief description and cause (if known) of the incident.
 - g. Work/activity being undertaken at time of incident.
 - h. For a fluid and/or gas escape:
 - i. Estimated quantity and duration of escape; and
 - ii. Composition of fluids or gases that escaped (including known toxicity information)
 - i. Environment Plan that this incident is being reported against.
 - j. Details of the extent of the impact – including type of any environmental damage and/or areas at risk.
 - k. Any impacts to Part 3 protected matters under the *Environment Protection and Biodiversity Conservation Act 1999*.
2. Action taken to avoid or mitigate impact:

Immediate actions taken to avoid or mitigate adverse environmental impacts of the reportable incident.
3. Corrective actions:

Corrective actions taken, or proposed, to stop, control or remedy the reportable incident.
4. Action to prevent a similar incident:

Actions taken, or proposed, to prevent a similar incident occurring in the future.

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 104 / 140
			Validity Status	Rev. No.	
			PR-OP	0	



3. Notification of Reportable Environmental Incidents

3.1. Notification of Reportable Environmental Incident within 2 hours

When notifying NOPSEMA of a reportable environmental incident the titleholder must provide all the details that it knows or is able, by reasonable search or enquiry, to find out, as listed above in items 1 to 4. It is understood details might be limited at this early stage.

The NOPSEMA notification phone line is available to titleholders 24 hours a day. It will either be answered directly or the caller can leave a voice message, following which they will receive a call back.

Titleholders should **not** make notifications via the NOPSEMA general switchboard or their focal point specialist.

Titleholders are also required to give a written record of the notification to NOPSEMA, as well as the Titles Administrator (NOPTA) and the Department of the responsible State or Northern Territory Minister as soon as practicable after the oral notification.

4. Reporting of Reportable and Recordable Environmental Incidents

4.1. Written Reportable Incident Reports required within 3 days

A written report must be provided to NOPSEMA as soon as practicable, but in any case, within 3 days of a reportable environmental incident unless otherwise agreed by NOPSEMA. The 3-day written report must include items 1 to 4. Titleholders may wish to utilise the NOPSEMA report form (N-03300-FM0831) available from the NOPSEMA Website: www.nopsema.gov.au

If NOPSEMA is not satisfied that the written report meets the requirements of the Regulations NOPSEMA may request, by notice in writing, additional written reports from the titleholder. The notice must identify the information to be contained in the report or matters to be addressed and specify when the report must be given to the Regulator.

4.2. Written Recordable Incident Reports required each calendar month

A written report of all recordable incidents that occurred during any calendar month must be provided to NOPSEMA as soon as practicable but not later than 15 days after the end of the calendar month. The written report must contain a record of all recordable incidents during that month including details of items 1 to 4.

A Titleholder may wish to utilise the Recordable Environmental Incident Monthly Report template (N-03300-FM0928) available from the NOPSEMA Website: www.nopsema.gov.au

If no recordable incidents have occurred during any particular month, a nil incident report should be submitted to NOPSEMA.

All written notifications and reports to NOPSEMA must be submitted to submissions@nopsema.gov.au or via secure file transfer at <https://securefile.nopsema.gov.au/filedrop/submissions> [NOTE: This guidance note relates to the Environment Regulations in place from 28 February 2014. For environment plans accepted under the old regulations, refer to the previous incident reporting requirements.]



eni australia

Company document identification

000694_DV_ES.HSE.0285.000_00

Owner document identification

Rev. index.

Validity Status

Rev. No.

PR-OP

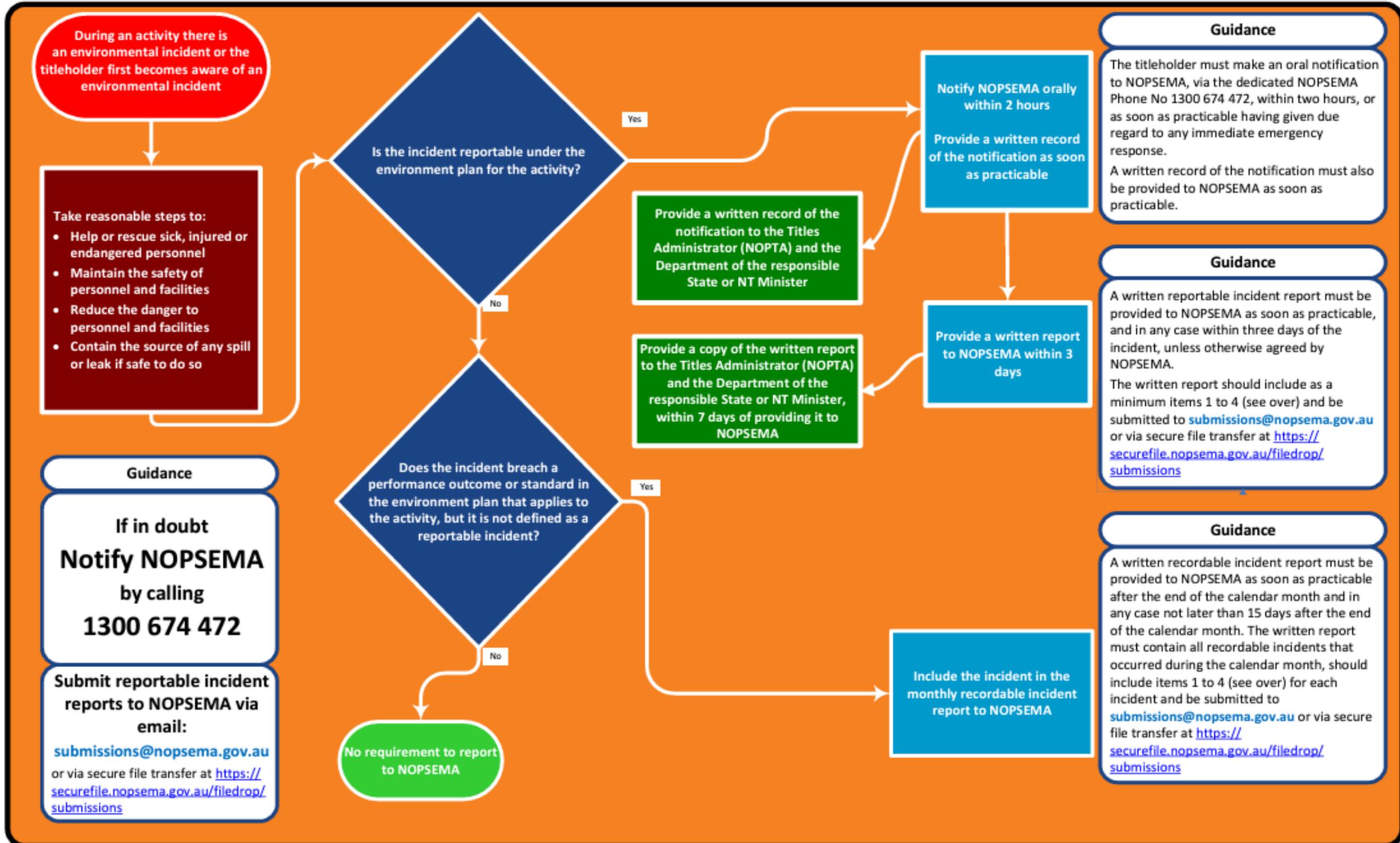
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Sheet of sheets

105 / 140



GUIDANCE NOTE



 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 106 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	



FORM

Report of an accident, dangerous occurrence or environmental incident

Document No: N-03300-FM0831 A159980

Date: 07/09/2023

For instructions and general guidance in the use of this form, please see the last page.

Part 1 is required within 3 days of a notified incident.

Part 2 is required within 30 days of notified incident.

What was the date and time of the initial verbal incident notification to NOPSEMA?			
Date		Time	

NOTE: It is a requirement to request permission to interfere with the site of an accident or dangerous occurrence. Refer OPGGS(S)R, Reg. 2.49.

What is the date and time of this written incident report?			
Date		Time	

What type of incident is being reported?	Please tick appropriate incident type
Accident or dangerous occurrence	<input type="checkbox"/> Complete parts 1A, 1B & part 2
Environmental Incident	<input type="checkbox"/> Complete parts 1A, 1C
BOTH (Accident or dangerous occurrence AND environmental incident)	<input type="checkbox"/> Complete ALL parts (1A, 1B, 1C, 2)

<i>Please tick all applicable (one or more categories)</i>		<i>To use electronically: MS Word 2007-10 – click in check box</i>	
Categories <i>Please select one or more</i>	Accidents	Death or Serious injury Lost time injury ≥3 days	<input type="checkbox"/> <input type="checkbox"/>
	Dangerous occurrences	Hydrocarbon release >1 kg or ≥80 L (gas or liquid) Fire or explosion Collision marine vessel and facility Could have caused death, serious injury or LTI Damage to safety-critical equipment Unplanned event – implement ERP Pipeline incident Well kick >50 barrels Other _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Environmental incidents	Hydrocarbon release Chemical release Drilling fluid/mud release Fauna Incident Other _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 107 / 140
			Validity Status	Rev. No.	
			PR-OP	0	



Report of an accident, dangerous occurrence or environmental incident
Form

Part 1A – Information required within 3 days of an accident, dangerous occurrence or environmental incident				
General information – all incidents				
1.	Where did the incident occur?	Facility / field / title name		
		Site name and location <i>Latitude/longitude</i>		
2.	Who is the registered operator/titleholder or other person that controls the works site or activity?	Name		
		Business address		
		Business phone no.		
3.	When did the incident occur?	Time and time zone		
		Date		
4.	Did anyone witness the incident?	Yes or No <i>If yes, provide details below</i>		
	Witness details	Witness no. 1	Witness no. 2	Witness no. 3
	Full name			
	Phone no. (Business hours)			
	Phone no. (Home) (Mobile)			
	Email (Business) (Private)			
	Postal address			
<i>NB: if more witnesses, copy and insert this section (4) here, and add extra witness numbers appropriately</i>				
5.	Details of person submitting this information	Name		
		Position		
		Email		
		Telephone no.		
6.	Brief description of incident			
7.	Work or activity being undertaken at time of incident			

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 108 / 140
			Validity Status	Rev. No.	
			PR-OP	0	



Part 1A – Information required within 3 days of an accident, dangerous occurrence or environmental incident

General information – all incidents

8.	What are the internal investigation arrangements?					
9.	Was there any loss of containment of any fluid (liquid or gas)?	Yes or No <i>If Yes, provide details below</i>				
		Type of fluid (liquid or gas) <i>If hydrocarbon release, please complete item no.15 as well</i>	Hydrocarbon <i>Please specify</i> _____	<input type="checkbox"/>	Non-hydrocarbon <i>Please specify</i> _____	<input type="checkbox"/>
		Estimated quantity <i>Liquid (L), Gas (kg)</i>				
		Estimation details	Calculation	<input type="checkbox"/>	Measurement	<input type="checkbox"/>
		Composition <i>Percentage and description</i>	<i>Please specify</i> _____			
		Known toxicity to people and/or environment	Toxicity to people			
			Toxicity to environment			
		How was the leak/spill detected?	F&G detection	<input type="checkbox"/>	Visual	<input type="checkbox"/>
			CCTV	<input type="checkbox"/>	Other	<input type="checkbox"/>
		Did ignition occur?	No	<input type="checkbox"/>	Immediate	<input type="checkbox"/>
Yes	<input type="checkbox"/>		Delayed	<input type="checkbox"/>		
	If yes, what was the likely ignition source	Hotwork	<input type="checkbox"/>			
		Spark electrical source	<input type="checkbox"/>			
		Spark metallic contact	<input type="checkbox"/>			
		Hot surface	<input type="checkbox"/>			
		Other	<input type="checkbox"/>			
10.	Has the release been stopped and/or contained?	Yes or No				
		Duration of the release <i>hh:mm:ss</i>				
		Estimated rate of release <i>Litres or kg per hour</i>				
11.	Location of release	What or where is the location of the release?				
		What equipment was involved in the release?				
		Is this functional location listed as safety-critical equipment?				

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 109 / 140
			Validity Status	Rev. No.	
			PR-OP	0	



Part 1A – Information required within 3 days of an accident, dangerous occurrence or environmental incident

General information – all incidents

12.	Weather conditions <i>Please complete as appropriate</i>	Ambient temperature °C		
		Relative humidity %		
		Wind speed m/s <i>NB: for enclosed areas use</i> Air change per hour		
		Wind direction e.g. from SW		
		Significant wave height m		
		Swell m		
		Current speed m/s		
		Current direction e.g. from SW		
13.	Hydrocarbon release details <i>If hydrocarbon fluid (liquid or gas) was released, please complete this section as well</i>	System of hydrocarbon release	Process <input type="checkbox"/> Drilling <input type="checkbox"/> Subsea / Pipeline <input type="checkbox"/>	Utilities <input type="checkbox"/> Well related <input type="checkbox"/> Marine <input type="checkbox"/>
		Estimated inventory in the isolatable system <i>Litres or kg</i>		
		System pressure and size of piping or vessel <i>diameter (d in mm)</i> <i>length (l in m)</i> <i>or volume (V in L)</i>	Pressure MPag	
		Estimated equivalent hole diameter <i>d in mm</i>	Size Piping (d) and Piping (l) or Vessel (V)	

Part 1B - Complete for accidents or dangerous occurrences

Accidents and dangerous occurrences information

	Was NOPSEMA notified through the dedicated notification phone line? <i>Phone No. 1300 674 472</i>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
15.	Was permission given by a NOPSEMA inspector to interfere with the site? OPGGS(S)R 2.49.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	Action taken		
	Details of any disturbance of the work site		

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 110 / 140
			Validity Status	Rev. No.	
			PR-OP	0	



Report of an accident, dangerous occurrence or environmental incident
Form

Part 1B - Complete for accidents or dangerous occurrences

Accidents and dangerous occurrences information

16.	Was an emergency response initiated?	Yes <input type="checkbox"/>		No <input type="checkbox"/>	
	Type of response	Manual <input type="checkbox"/>	Muster <input type="checkbox"/>		<input type="checkbox"/>
	Automatic alarm <input type="checkbox"/>	Evacuation <input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	How effective was the emergency response?				
17.	Was anyone killed or injured? <i>Provide details below</i>	Yes <input type="checkbox"/>		No <input type="checkbox"/>	
	Injured persons (IP)	Casualty no. 1			
	<i>If different from item 2.</i>				
	Employer name	Employer address			
	Employer phone no.	Employer email			
	IP full name				
	IP date of birth	Sex		M <input type="checkbox"/>	F <input type="checkbox"/>
	IP residential address				
	IP phone no. (Work)	IP phone no. (Home)		(Mobile)	
	IP occupation/job title	Contractor or core crew			
	Details of injury				
	<i>Based on TOOCS (refer last page)</i>				
	Nature of injury	a. Intracranial injury <input type="checkbox"/>	d. Burn <input type="checkbox"/>		
	b. Fractures <input type="checkbox"/>	e. Nerve or spinal cord injury <input type="checkbox"/>			
	c. Wounds, lacerations, amputations, internal organ damage <input type="checkbox"/>	f. Joint, ligament, muscle or tendon injury <input type="checkbox"/>			
		g. Other _____ <input type="checkbox"/>			
Part of body	G1. Head or face <input type="checkbox"/>	G5. Hip or leg <input type="checkbox"/>			
	G2. Neck <input type="checkbox"/>	G6. Multiple locations <input type="checkbox"/>			
	G3. Trunk <input type="checkbox"/>	G7. Internal systems <input type="checkbox"/>			
	G4. Shoulder or arm <input type="checkbox"/>	G8. Other _____ <input type="checkbox"/>			
Mechanism of injury	G0. Falls, stepping, kneeling, sitting on object <input type="checkbox"/>	G3. Exposure to sound or pressure <input type="checkbox"/>			
	G1. Hitting object <input type="checkbox"/>	G4. Muscular stress <input type="checkbox"/>			
	G2. Being hit or trapped <input type="checkbox"/>	G5. Heat, cold or radiation <input type="checkbox"/>			
		G6/7 Chemical, biological substance <input type="checkbox"/>			
		G8. Other _____ <input type="checkbox"/>			
Agency of injury	1. Machinery or fixed plant <input type="checkbox"/>	5/6. Chemicals, materials, substances <input type="checkbox"/>			
	2. Mobile plant or transport <input type="checkbox"/>	7. Environmental agencies <input type="checkbox"/>			
	3. Powered equipment <input type="checkbox"/>	8. Human or animal agencies <input type="checkbox"/>			
	4. Non-power equipment <input type="checkbox"/>	9. Other _____ <input type="checkbox"/>			

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 111 / 140
			Validity Status	Rev. No.	
			PR-OP	0	



Report of an accident, dangerous occurrence or environmental incident
Form

Part 1B - Complete for accidents or dangerous occurrences					
Accidents and dangerous occurrences information					
	Details of job being undertaken				
	Day and hour of shift	Day <i>e.g. 5th day of 7 (5 / 7)</i>	Hour <i>e.g. 3rd hour of 12 (3 / 12)</i>		
<i>NB: If more casualties, please copy/paste this section (19) for each additional casualty and insert here</i>					
18.	Was there any serious damage? <i>Provide details below</i>		Yes <input type="checkbox"/>	No <input type="checkbox"/>	
	Details	Item 1	Item 2	Item 3	
	Equipment damaged				
	Extent of damage				
19.	Will the equipment be shut down? <i>Yes or No</i>				
	If yes, for how long?				
<i>NB: If more equipment seriously damaged, please copy/paste this section as required</i>					
20.	Will the facility be shut down?		Yes or No <i>If yes provide details below</i>		
	Facility shutdown	Date	dd/mm/yyyy		
		Time	24-hour clock		
	Duration	days / hours / minutes			
21.	Immediate action taken/intended, if any, to prevent recurrence of incident.		Action	Responsible party	Completion date <i>Actual or intended</i>
22.	What were the immediate causes of the incident?				

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 113 / 140
			Validity Status	Rev. No.	
			PR-OP	0	



Report of an accident, dangerous occurrence or environmental incident
Form

Part 1C – Complete for environmental incidents

Environmental Impacts

	Are any environments at risk? <i>Including as a result of spill response measures</i>	Details <i>e.g. zone of potential impact</i>			
		AT RISK ENVIRONMENTS			
		Open ocean	<input type="checkbox"/>	Macroalgae	<input type="checkbox"/>
		Shoreline	<input type="checkbox"/>	Coral Reef	<input type="checkbox"/>
		Population Centre	<input type="checkbox"/>	Benthic Invertebrates	<input type="checkbox"/>
		Stakeholders	<input type="checkbox"/>	Seagrass	<input type="checkbox"/>
Other sensitivity	<input type="checkbox"/>	Mangrove	<input type="checkbox"/>		
<i>e.g. conservation area, nesting beach</i>					
Details	Environment 1	Environment 2	Environment 3		
Estimated location of 'at-risk' environments					
Estimated impact date & time					
Action required to minimise exposure					
Specify each matter protected under Part 3 of the EPBC Act at risk					
<i>NB: If more environments at risk of damage, please copy/paste this section (Item E2) and add extra data</i>					
26.	Was an oil pollution emergency plan activated?	Yes or No			
		If yes, what action has been implemented /planned?			
		If yes, how effective is/was the spill response?			
27.	Was an environmental monitoring program initiated?	Yes or No			
		If yes, what actions have been implemented and/or planned?			
28.	Did the incident result in the death or injury of any fauna?	Yes or No (If yes provide details of species in the table below)			
	Injured fauna	Species 1	Species 2	Species 3	
	Species name (common or scientific name)				
	Number of individuals killed or injured	Killed: Injured:	Killed: Injured:	Killed: Injured:	
<i>NB: If more species were injured or killed, please copy/paste this section (Item E4) and add extra data</i>					
29.	Actions taken to avoid or mitigate any adverse	Action	Responsible party	Completion date <i>Actual or intended</i>	

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 114 / 140
			Validity Status	Rev. No.	
			PR-OP	0	



Part 1C – Complete for environmental incidents

Environmental Impacts

	environmental impacts of the incident.			
<i>NB: If more actions, please add extra rows as required</i>				
30.	Corrective actions taken, or proposed, to stop, control or remedy the incident.	Action	Responsible party	Completion date <i>Actual or intended</i>
<i>NB: If more actions, please add extra rows as required</i>				
31.	Actions taken, or proposed, to prevent a similar incident occurring in the future.	Action	Responsible party	Completion date <i>Actual or intended</i>
<i>NB: If more actions, please add extra rows as required</i>				

Attachments

Are you attaching any documents?			Yes or No <i>If yes, provide details below</i>	
No.	ID	Revision	Date	Title/Description
<i>Insert or delete rows as required</i>				

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 115 / 140
			Validity Status	Rev. No.	
			PR-OP	0	



Part 2 – Information required within 30 days of accident or dangerous occurrence				
<p>NOPSEMA acknowledges that in many circumstances an operator may not have completed an investigation within 30 days of an accident or first detection of a dangerous occurrence and agrees that these items must be provided within 30 days unless otherwise agreed, in writing with NOPSEMA. In circumstances where an investigation has been completed within 30 days, and these items are available (supplemented, as required by any attachments) this part should also be completed at that time.</p>				
32.	Has the investigation been completed?	Yes or No		
	Root cause analysis <i>What were the root causes?</i>	Root cause 1		
		Root cause 2		
		Root cause 3		
		Other root causes		
	Full report <i>Describe investigation in detail, including who conducted the investigation and in accordance with what standard/procedure with reference to attachments listed in the 'attachments table' (following) as applicable</i>			
33.	Actions to prevent recurrence of same or similar incident	Action	Responsible party	Completion date <i>Actual or intended</i>
<i>NB: Add or delete rows as appropriate</i>				

Attachments (Insert/delete rows as required)				
Are you attaching any documents?			Yes or No	
			<i>If yes, provide details below</i>	
No.	ID	Revision	Date	Title/description

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 116 / 140
			Validity Status	Rev. No.	
			PR-OP	0	



Instructions and general guidance for use:

1. The use of this form is voluntary and is provided to assist operators and titleholders to comply with their obligations to give notice and provide reports of incidents to NOPSEMA under the applicable legislation.
2. Accidents, dangerous occurrences or environmental incidents can all be reported using this same form.
3. The applicable legislation for incident reporting is:
 - a. Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009 [OPGGS(S)R]; and
 - b. Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 [OPGGS(E)R], for facilities located in Commonwealth waters; or
 - c. for facilities located in designated coastal waters, the relevant State or Territory Act and associated Regulations where there is a current conferral of powers to NOPSEMA.
4. In the context of this form an incident is a reportable incident as defined under:
 - a. OPGGSA, Schedule 3, Clause 82.
 - b. OPGGS(E)R, regulation 4.
5. This form should be used in conjunction with NOPSEMA Guidance Notes available on the NOPSEMA website:
 - a. N-03300-GN0099 Notification and Reporting of Accidents and Dangerous Occurrences
 - b. N-03300-GN0926 Notification and Reporting of Environmental Incidents
6. Part 1 requires completion for all incidents; then ALSO complete part 2 if the incident is an accident or dangerous occurrence.
7. NOPSEMA considers that a full report will contain copies of documentary material referenced and/or relied on in the course of completing this form, which may include (but not be limited to) as appropriate: witness statements, management system documents, drawings, diagrams and photographs, third party reports (audit, inspection, material analysis etc.), internal records and correspondence.
8. This form is intended to be completed electronically using Microsoft Word by completing the unshaded cells which will expand as required to accept the information required and the check boxes where relevant (NB: check boxes may appear shaded and have reduced functionality in MS Word versions prior to 2010).
9. The completed version of this form (and any attachments, where applicable) should be emailed to: submissions@nopsema.gov.au
or submitted via secure file transfer at: <https://securefile.nopsema.gov.au/filedrop/submissions> as soon as practicable, but in any case, within three days of the incident.

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 117 / 140
			Validity Status	Rev. No.	
			PR-OP	0	



Report of an accident, dangerous occurrence or environmental incident
Form

References

NOPSEMA website: www.nopsema.gov.au

TOOCS – Type of Occurrence Classification System.

The *Type of Occurrence Classification System, Version 3.0 (TOOCS3.0)* was developed to improve the quality and consistency of data. This system aligns with the International Classification of Diseases – Australian Modification (ICD10-AM). [Type of occurrence classification system \(TOOCS\) 3rd Edition May 2008 | Safe Work Australia](#)

OPGGS(S)R. Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009. Select Legislative Instrument 2009 No. 382 as amended and made under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*. Commonwealth of Australia.

OPGGS(E)R. Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009. Statutory Rules 1999 No. 228 as amended and made under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*. Commonwealth of Australia.

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 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 118 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	



FORM

Recordable Environmental Incident Monthly Report

Document No: N-03300-FM0928 A198750

Date: 10/01/2024

Due Date: By the 15th day of the following month.
Send completed form to: submissions@nopsema.gov.au via secure file transfer at <https://securefile.nopsema.gov.au/filedrop/submissions>
Reference: Regulation 50

Please check the following boxes if applicable to this report		Nil Incident Report: <input type="checkbox"/>		Final report for this activity: <input type="checkbox"/>	
Titleholder name:		Titleholder business address:		Title of environment plan for the activity:	
Activity type: <small>(e.g. drilling, seismic, production)</small>		Month, Year:		Facility name and type : <small>(e.g. MODU, Seismic Vessel, FPSO)</small>	
Contact person:		Email:		Phone:	
Incident date	All material facts and circumstances <small>(including release volumes to environment if applicable)</small>	Performance outcome(s) and/or standard(s) breached	Action taken to avoid or mitigate any adverse environmental impacts of the incident	Corrective action taken, or proposed, to stop, control or remedy this incident	Action taken, or proposed, to prevent a similar incident occurring in future

Note 1: As at 28 February 2014, amendments to the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations changed from environmental performance objective to environmental performance outcome. If you are reporting against an EP accepted under the old Regulations please report against the environmental performance objective for that activity.

Note 2: This form may be submitted in conjunction with the 'Injuries and Fatalities – Monthly Summary Report' Form available at www.nopsema.gov.au

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 119 / 140
			Validity Status	Rev. No.	
			PR-OP	0	



Recordable Environmental Incident Monthly Report
Form

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 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 120 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

APPENDIX B

INCIDENT ACTION PLAN TEMPLATE

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 121 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

APPENDIX B: INCIDENT ACTION PLAN TEMPLATE

Phase/Task		Action	Responsibility	Check
Briefing	1	Brief key IMT Officers	IMTL/ Planning Officer	
		a) Current situation:		
		<ul style="list-style-type: none"> Spill type Spill location Spill size Containment 		
		<ul style="list-style-type: none"> Statutory/Combat Agencies 		
		<ul style="list-style-type: none"> Tier/resources mobilised 		
		b) Predicted situation:		
		<ul style="list-style-type: none"> Trajectory 		
		<ul style="list-style-type: none"> Resources at risk/effects 		
		2	State aim (or policy) of response.	
IAP Sub-Plans Development	3	Develop and rank response objectives, based on protection priorities.	Planning Officer/ Env Advisor	
	4	Develop strategies for each objective.	Planning Officer	
	5	Develop tactics for each strategy.	Planning Officer	
	6	Identify/obtain any permits required for strategies.	IMTL/ Env Advisor	
	7	Prepare/review sub-plans		
		a) Health and safety sub-plan	Safety Officer	
		b) Wildlife sub-plan	Env Advisor	
		c) List of equipment, personnel and service requirements for the planned response	Logistics Officer	
d) Communication sub-plan		Planning Officer		
		e) Media sub-plan	Safety Officer	
Logistics	8	Determine need for and location of any staging areas.	Logistics Officer	
IAP Preparation	9	Document aim, objectives and strategies and prepare Draft Incident Action Plan.	IMTL/ Planning Officer	
	10	Attach sub-plans to Incident Action Plan (IAP).	Planning Officer	
	11	Prepare revised list of resource needs for submission to Logistics officer.	All IMT Officers	
Approval	12	Approve IAP.	IMTL	

* Process to be repeated throughout the response as scenarios, objectives, strategies or tactics change.

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 122 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

APPENDIX C

NET ENVIRONMENTAL BENEFIT ASSESSMENT

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 123 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

APPENDIX C: NET ENVIRONMENTAL BENEFIT ASSESSMENT

Procedure	Net Benefit Analysis (NEBA)
Responsibility	<p>The IMT Planning Officer will be responsible for the completion of the NEBA, with the assistance of an Environmental Advisor. The Environmental Advisor is to have technical competence to undertake the NEBA assessment and have a thorough understanding of the potential areas to be impacted and sensitivities that exist at these places. An understanding of the potential impacts of different spill response options is also required.</p> <p>The Environmental Advisor will require support from the Safety, Logistics and Operations Officers in consultation with the IMTL. The IMT Planning Officer may request advice from technical experts in completing the NEBA.</p>
Timing	<p>From the occurrence of the spill, the NEBA will be developed to supplement the Incident Action Plan (IAP) being developed by the IMTL. The initial NEBA will be completed within 1 hour of receiving sufficient data input (spill modelling, current and forecasted weather conditions, volume of spill, the presence of sensitive receptors).</p> <p>Thereafter, the NEBA will be reviewed on a daily basis to inform the IAP. The reviews are flexible in the fact they can be more frequent, based on information from operational monitoring, resource availability, changes in weather and safety considerations. A review can be requested by the IMTL at any stage.</p>

Task	Action	Status
1 a)	<p>Each NEBA undertaken is to have a cover page completed. The cover page is to be assigned a unique reference code which is of a standard format. For example: <i>NEBA X (NEBA number conducted)_ddmmyyyy (date)_00:00 (time)_ Site Abbreviation Initials of Assessor</i> <i>e.g. NEBA5_01012013_15:15_Ashmore_JW</i></p> <p>Note the site abbreviation will become prevalent once the locations to be impacted are determined (i.e. Ashmore, Cartier, Hibernia, etc.).</p>	
b)	<p>The details in the cover sheet are to be completed to the largest extent possible based on the information available. Details to be completed include:</p> <ul style="list-style-type: none"> • Level of the spill • season • water depth • details of people completing the form • date of form • weather conditions • resources available • existing response strategies • spill modelling forecast: <ul style="list-style-type: none"> – areas predicted to be impacted – time to contact – volumes. • operational monitoring inputs. 	

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 124 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

Task	Action	Status
2a)	Populate the NEBA table with response strategies under consideration, sites and resources of interest. Part A is pre-prepared reference, the positive and negative environmental impacts as well as considerations for various response options. Review and update this as necessary based on the spill characteristics.	
b)	From the cover page add in the site names of potentially affected sites to the top row of the NEBA table (Part B).	
c)	List the key sensitivities for the potentially affected sites identified through modelling (refer to Section 5.6.4 in the OPEP and the relevant Environment Plan) and additional information supplied by APASA (from OSRA) or other local environmental experts.	
d)	The initial NEBA will focus on primary response strategies (containment and recovery) which target reducing the volume of oil on the water surface and minimising the risk of shoreline contact. As the time to contact reduces, and potential volumes that may contact the sites become clear, secondary response strategies such as protection and deflection and shoreline clean-ups will become more prevalent and should be incorporated into the NEBA. It is important to include detail in the initial NEBA with an outlook for the future 48 hours so that the response strategies can be refined over the coming days. This will assist the Operational Officer in acquiring resources.	
e)	Review the peak migratory seasons for sensitivities such as: <ul style="list-style-type: none"> • Migratory Birds – peak migratory periods occurring during October to November. • Marine Reptiles (Turtles) – turtle nesting occurs between the months of December to January; Hatchlings can be expected between February and March. If the spill will affect key seasonal sensitivities, note this in each of the response strategy boxes.	
f)	For each response strategy review the positive/negatives and considerations in Section A, update as necessary and apply them to the sites and sensitivities listed in Section B to assess the relative benefits of each response under consideration.	
g)	If multiple sites are identified to be impacted and prioritisation is required. It is important to list the following details against the relevant response strategy for each location: <ul style="list-style-type: none"> • the time to contact • the volume predicted to impact • the length of shoreline to be impacted • state of weathering at impact • hydrocarbon phase at impact • tidal phases (spring tides etc.) • review migratory/nesting seasons for key sensitivities • review operational monitoring data on number and diversity of fauna currently present that could be impacted. 	
h)	If a single site is to be impacted, detailed operational monitoring data will be used to identify where specific response strategies could be implemented (protection	

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 125 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

Task	Action	Status
	and deflection, shoreline protection) given the conditions at the time (sea state, currents, access). A site specific NEBA can be undertaken using as real time information to identify the most beneficial response strategies for each location within the site.	
3a)	Once viable response options have been identified, this information can be incorporated into spill modelling to assess the outcome of the response and identify preferred locations for deploying the response.	
4a)	The Planning Officer and Environmental Advisor are to supply the IMTL with: 1. the completed NEBA 2. a list of the recommended response options for each site of interest 3. modelling results for response options (where applicable).	
b)	Ensure the NEBA and supporting information is saved in a dedicated location that is readily accessible to the IMT.	
c)	Prepare the template for the following NEBA, based on the existing NEBA so that it is ready to be reviewed and refined if requested at short notice by the IMTL.	

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 126 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

NEBA Cover Sheet

Net Environmental Benefit Analysis Cover Sheet			
Document Number:			Location:
Previous NEBA Document Number:			
Date:			People Involved:
Time:			
Time (days) Since Spill:			
Prevailing Weather Conditions:	Temperature: (range)	Wind: (Speed/direction)	Swell: (m)
Spill Modelling Data:			
Relevant Operational Monitoring Data:			
Predicted Locations To Be Impacted:	Time to shoreline contact	Hydrocarbon phase at impact	Volumes predicted ashore at each location
Resources Available:	Currently	<24 hours	>24 hours

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 127 / 140
	000694_DV_ES.HSE.0285.000_00		Validity Status	Rev. No.	
			PR-OP	0	

Section A - Information to Inform NEBA				Section B – Conceptual NEBA Receptor/Sensitivity		
Response Strategy	Negative Impacts	Positive Impacts	Consideration	Location/Receptor	Location/Receptor	Location/Receptor
Natural recovery (surveillance and monitoring)	<ul style="list-style-type: none"> Acute and chronic toxicity effects of surface oil on organisms Physical effects e.g. smothering from surface oil Potential extended exposure of surface water and inter-tidal resources Survey vessels pose chance of disturbance/collision with marine fauna 	<ul style="list-style-type: none"> No additional impacts from clean-up activities Identify emerging risks to sensitive areas Limited risk to sub-tidal resources No waste generation 	<ul style="list-style-type: none"> EPBC Regulations 2000, Part 8 Division 8.1 interactions with cetaceans For most spills aerial surveillance will be required for effective monitoring of spill movement and extent Requires trained observers 			
Containment and Recovery	<ul style="list-style-type: none"> Response vessel movement increase chance of disturbance/collision with marine fauna Generation of oily waste requiring disposal. 	<ul style="list-style-type: none"> Reduces volume of surface slick Reduced risk of oiling of wildlife and shorelines 	<ul style="list-style-type: none"> Dependent on weather Containment and recovery operations require surface slicks of 			

	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 128 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

		<ul style="list-style-type: none"> Less waste generated than during shoreline clean-up 	<ul style="list-style-type: none"> thresholds >10 g/m² Requires trained responders Booms in shallow water monitored to free trapped wildlife and prevent damage to shallow reef structures EPBC Regulations 2000, Part 8 Division 8.1 interactions with cetaceans 			
Protection and deflection	<ul style="list-style-type: none"> Increased vessel movement increase chance of disturbance/collision with marine fauna Potential damage/disturbance to intertidal and benthic habitats Disturbance of shoreline fauna, e.g. nesting birds or turtles 	<ul style="list-style-type: none"> Can reduce volume of surface slick Reduce the risk of oiling of wildlife and shorelines Less waste generated than during shoreline clean-up 	<ul style="list-style-type: none"> Requires trained responders Booms in shallow water monitored to free trapped wildlife and prevent damage to shallow reef structures or booms Flat bottom vessels, catamarans or 			

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 129 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

			vessels with tenders may be required to access shorelines to deploy booms and other protective equipment. <ul style="list-style-type: none"> • Beach profile must be restored after installing barriers/berms where practicable • EPBC Regulations 2000, Part 8 Division 8.1 interactions with cetaceans 			
Shoreline clean up	<ul style="list-style-type: none"> • Potential intertidal and shoreline disturbance, including fauna, nests etc, from landing vessels and personnel. • Large amounts of waste generated • Changes to beach profiles 	<ul style="list-style-type: none"> • Removes stranded hydrocarbons from shorelines – reduces oil burial and long-term contamination • Reduces impacts associated 	<ul style="list-style-type: none"> • Remote area work requiring extensive logistic support including waste removal and transport • Access permits required for some areas. • Induction and training of onshore team 			

	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 130 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

	<ul style="list-style-type: none"> Depending on environment may not speed natural recovery 	with smothering effects <ul style="list-style-type: none"> Reduces risk of wildlife contacting oil Reduces potential for remobilisation of stranded oil to other sensitive receptors May speed shoreline recovery 	accessing to uninhabited islands. Induction to include that spill response teams should avoid disruption of environment and take practical tactical precautions to avoid contact with flora and fauna <ul style="list-style-type: none"> IMT to: Coordinate basic training to clean-up contractors; Oversee the clean-up process to ensure appropriate procedures are used to minimise the impact on the environment; Provide advice on practical precautions to minimise contact with flora and 			
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 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 131 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

			fauna; and Assist with the NEBA process when selecting spill response strategies and to evaluate the impact of strategies			
Oiled wildlife response	<ul style="list-style-type: none"> Increased vessel movement increase chance of disturbance/collision with marine fauna Disturbance to shorelines and intertidal areas during capture or marine fauna Approaching marine fauna could drive individuals towards/into spill Pre-emptive capture and relocation of turtle hatchlings may result in reduced survival (predation and/or exposure) 	<ul style="list-style-type: none"> Prevent or reduce oiling of wildlife May assist recovery of oiled wildlife 	<ul style="list-style-type: none"> Wildlife at risk will depend on seasonal factors as well as the location of the spill Wildlife washing facility requires large area and large supply of clean water Trained responders required for wildlife capture and care Consider wildlife threatened or impacted by other operational activities associated with 			

	eni australia Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 132 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

	<ul style="list-style-type: none"> Large volumes of oily water and waste generated by bird washing 		the response (e.g. containment and clean up, aviation etc.)			
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 eni australia	Company document identification 000694_DV_ES.HSE.0285.00 0_00	Owner document identification	Rev. index.		Sheet of sheets 133 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

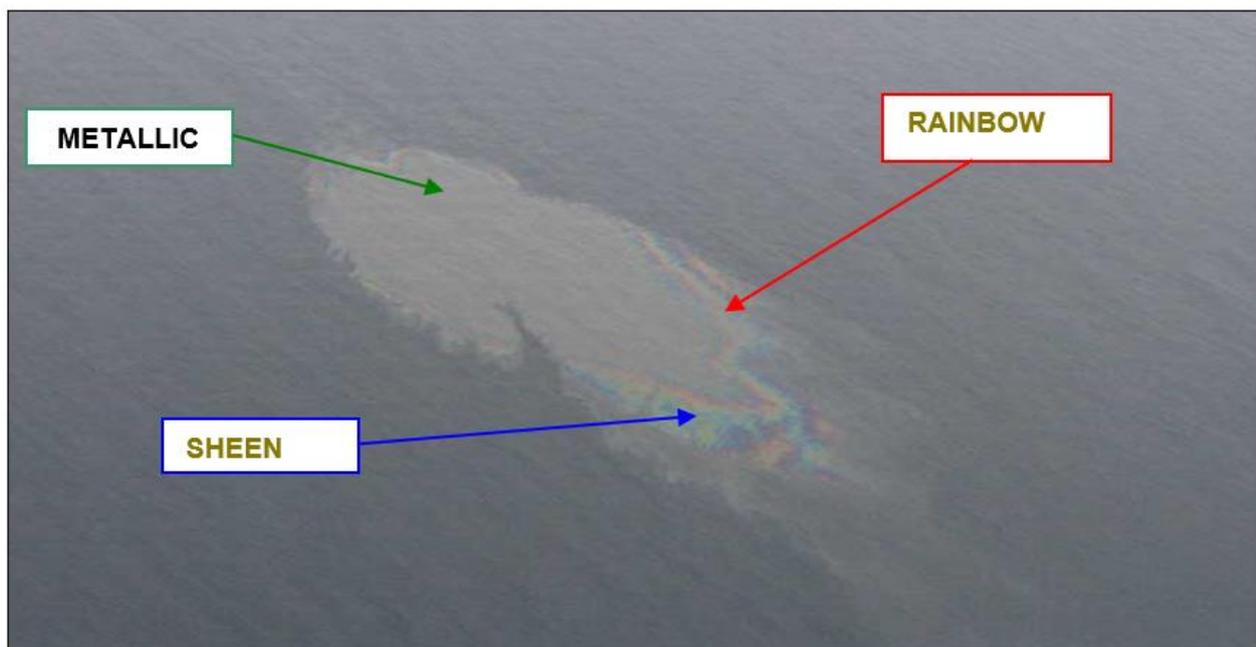
APPENDIX D

BONN APPEARANCE CODES

 eni australia	Company document identification 000694_DV_ES.HSE.0285.00 0 00	Owner document identification	Rev. index.		Sheet of sheets 134 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

APPENDIX D: BONN APPEARANCE CODES

Code	Description - Appearance	Layer Thickness Interval (μm)	Litres per km^2
1	Sheen (silvery/grey)	0.04 to 0.30	40 - 300
2	Rainbow	0.30 to 5.0	300 - 5000
3	Metallic	5.0 to 50	5000 - 50,000
4	Discontinuous True Oil Colour	50 to 200	50,000 - 200,000
5	Continuous True Oil Colour	More than 200	More than 200,000



 eni australia	Company document identification 000694_DV_ES.HSE.0285.00 0 00	Owner document identification	Rev. index.		Sheet of sheets 135 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

Oil Behaviour

The behaviour of oil at sea, and its subsequent fates and effects is influenced by a number of factors and these are outlined below.

Significance of Oil Character

The character of oil determines its behaviour at sea, and this in turn influences a number of aspects of spill management. The most important considerations are:

- Spreading rate. Oils like diesel, light crude oils and condensates will spread rapidly. This makes containment with booms difficult due to the time taken to deploy equipment and the large area covered by these oils in a short time. High spreading rates also results in a rapid evaporation of the oils and facilitate a rapid physical breakup of the slick due to the thin layer that is achieved through spreading. Breakup of some of these oils is so rapid that they are classed as "non persistent" (most condensates).
- Tendency to emulsify. Some oils, such as heavy fuel oils, tend to pick up water and form thick, viscous emulsions. This depends in part on an oil's asphaltene content. These are persistent and difficult to recover from the sea using skimmers. Some light high wax oils will also form emulsions if high mixing energies are applied. This is one reason why it is not recommended to break up surface slicks with vessel's propeller action.
- Pour point. This is the temperature above which oil is liquid. If an oil has a pour point close to or below sea and air temperatures it may not spread or be amenable to some response strategies. This reflects an oil's wax content and asphaltene content.
- The resulting persistence of an oil is an important consideration in mounting a response, particularly in isolated areas. Non-persistent oils may not need cleanup, particularly if they are spilled a long way from sensitive resources or coastlines

The chemical and physical properties of the various oils has been assessed and the relevant data used as input into the oil fates and trajectory modelling.

Behaviour of Oils at Sea

Four oils could be spilled from commissioning and operations activities:

- Diesel fuel.
These vary greatly in their constituents and consequent behaviour although all spread rapidly. Heavier diesels and tropical diesels may leave a significant residue after evaporative losses although these will tend to break up in the open sea.
- Lubricating oil.
These are carried and transported in small quantities only.
- Crude oil.
Montara crude is a medium (Group III) high pour point waxy crude (API Gravity of approximately 34.8°) with a wax content of 11.3%. A light crude oil is one with an API Gravity of between 33° and 45.5°. Caution: this oil poses an extreme fire hazard.
- Aviation fuel.
Either avgas or jet fuels. These are light rapidly spreading oils.

Oil spilled at sea undergoes a number of physical and chemical changes, although the rate of change depends upon such factors as:

- The oil's initial physical and chemical characteristics
- Prevailing weather and sea conditions. Weathering is generally accelerated by:
 - High winds
 - High sea states which act to break surface oils up. However, this also promotes emulsification in some oils which reduces evaporative loss and spreading hence retarding break-up (see below)
- Whether the oil remains at sea or is washed ashore

 eni australia	Company document identification 000694_DV_ES.HSE.0285.00 0_00	Owner document identification	Rev. index.		Sheet of sheets 136 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

APPENDIX E

ESTIMATING OIL SLICKS AT SEA

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 137 / 140
	000694_DV_ES.HSE.0285.00 0 00		Validity Status	Rev. No.	
			PR-OP	0	

APPENDIX E: ESTIMATING OIL SLICKS AT SEA

GUIDE TO ESTIMATING OIL SLICKS AT SEA

Flight Plans

The first over flight of a large spill should be at 300 to 700 metres, to locate and determine its general orientation and dimensions.

Determining the colour of the oil is best made at lower altitudes. When searching for an oil slick, aircraft should undertake a "parallel track search" of the area in which the slick is considered to be located.

The longer search legs should be oriented with the direction of drift. This will maximise search effectiveness (better chance of slick detection).

Estimating Slick Volumes at Sea

Estimates of the volume of a slick can be made on the basis of its appearance at sea, and the area covered.

A trained observer must be present on surveillance aircraft to identify oil on the water or shoreline and to accurately report location to the Aerial Coordinator or Operations Officer. Photographs should be taken to aid later assessments.

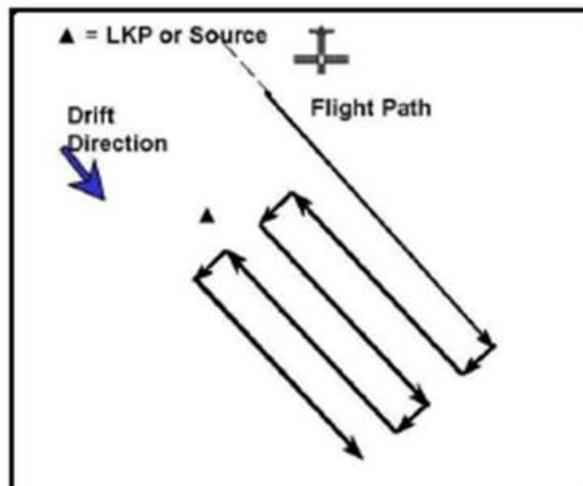


Figure I1: Parallel track search pattern

Suitably experienced observers can be identified and obtained through AMSA or AMOSC. In the long term PTTEP AA aims to train some aerial observers.

Table I1: Guidelines for estimation of slick volume

Appearance of Oil Slick	Volume of Oil per Km ²		
	m ³	Tonnes	Barrels
Barely Visible except under some light conditions	0.05	0.04	0.31
Silvery Sheen	0.10	0.09	0.43
Rainbow – Iridescence: Bright bands of colour	0.30	0.24	1.89
Dull Colours. Colours still visible but are dull	1.00	0.85	4.29
Dark Black or Brown (or very dark colour)	2.00	1.70	12.40

NOTES: Source Bonn Agreement.

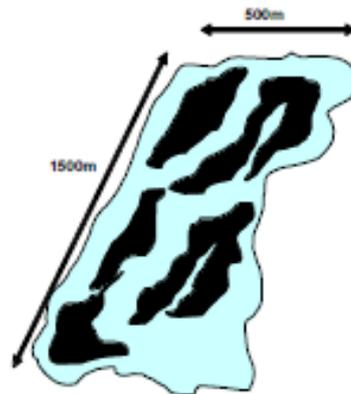
The surface area of the slick can be estimated by:

1. Flying the length and breadth of the slick and equating the time taken to fly over the slick and the aircraft speed.
2. Calculating the slick area (i.e. length x breadth), and

 eni australia	Company document identification 000694_DV_ES.HSE.0285.00 0 00	Owner document identification	Rev. index.		Sheet of sheets 138 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

3. Multiplying the area by the percentage of the slick that is oil (i.e. not clean water).
4. The areas covered by the various oil thicknesses should be calculated.
5. Calculate oil volumes using equation below.

Example of calculating slick volumes at sea



E.g: Area = 1.5km x 0.5km = 0.75 sq km.

i) 40% of slick is black oil. So area of black oil is 40% of 0.75 sq km = 0.3 sq km.

ii) Using Table 6.1, volume in black oil is approximately: $2 \times 0.3 = 0.6$ cubic metres.

iii) 60% of slick is sheen. So area of sheen is 60% of 0.75 sq. km = 0.45 sq km.

iv) Using Table 9.1, volume of oil in the sheen is approximately: $0.05 \times 0.45 = 0.0225$ cubic metres.

Note that the sheen contains very little oil and estimated volume, in this example, is about 0.6 cubic metres of oil or oily emulsion.

 eni australia	Company document identification 000694_DV_ES.HSE.0285.00 0_00	Owner document identification	Rev. index.		Sheet of sheets 139 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

APPENDIX F

IMT RESOURCING PLAN

 eni australia	Company document identification 000694_DV_ES.HSE.0285.000_00	Owner document identification	Rev. index.		Sheet of sheets 140 / 140
			Validity Status	Rev. No.	
			PR-OP	0	

APPENDIX F: IMT RESOURCING PLAN

 Eni australia	Company document identification 000694_DV_ES.HSE.0027.000	Owner document identification	Rev. index.		Sheet of sheets 426 / 426
			Validity Status	Rev. No. B	

Appendix F: OSMP

BLACKTIP OPERATIONAL AND SCIENTIFIC MONITORING PROGRAM

PR-OP	0	30/09/21	Issued for submission	Xodus	JCO	LGI		
PR-OP	A	21/08/24	Issued for Review	Xodus	JCO	JCO		
Validity Status	Rev. Number	Date	Description	Prepared by	Checked by	Approved by	Contractor Approval	Company Approval
Revision index								
 eni australia				Project name Petrel-3 and Petrel-4 Monitoring and Decommissioning		Company identification 000694_DV_ES.HSE.0286.000_00 Job N. ____		
						Contractor identification Contract ____		
						Vendor identification Order N.....		
Facility Name				Location		Scale		Sheet of Sheets
Petrel						1:1		1 / 117
Document Title						Supersedes N.....		
PETREL-3 AND PETREL-4 MONITORING AND DECOMMISSIONING						Superseded by N.....		
						Plant Area		Plant Unit

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	
					2 / 117

TABLE OF CONTENTS

ACRONYMS	9
1 INTRODUCTION	12
1.1 Scope.....	12
1.2 Environment that May Be Affected	12
1.3 Objectives	15
1.4 Operational and Scientific Monitoring	15
1.4.1 Operational Monitoring Programs	15
1.4.2 Scientific Monitoring Programs	16
1.4.3 Scientific Monitoring Studies Approach.....	18
1.4.4 Pre-Spill Assessment of Potential Study Designs and Approach.....	19
1.5 Existing Baseline Data	22
1.6 OMP and SMP Implementation and Capability	25
1.6.1 Environmental Panel Capability	30
1.6.2 Contract Timeframes	31
1.6.3 Thamarrurr Rangers Capability	32
1.6.4 Eni Global Capability	32
1.6.5 Third party scientific monitoring support	32
1.7 OSMP Review and Revisions.....	36
1.8 OSMP Testing.....	36
1.9 Consulting with Stakeholders	36
1.10 Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria	37
2 RISK ASSESSMENT AND DATA MANAGEMENT	39
2.1 Risk Assessment, Occupational Health and Safety Considerations	39
2.1.1 Vessel Surveys.....	39
2.1.2 Aerial Surveys.....	39
2.2 Data Management	40
2.3 EPBC Act Protected Matters Considerations	40
3 LOGISTICS.....	41
3.1 Vessel Mobilisation	41
3.2 Aircraft Mobilisation	41
3.3 Permit requirements	41

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 3 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

4	OMP1 – MONITORING OF SURFACE HYDROCARBON DISTRIBUTION AT SEA AND VISUAL OBSERVATION OF MEGAFUNA.....	47
4.1	Activation of this Plan	47
4.2	Monitoring Rationale	47
4.2.1	Objectives	47
4.3	Resources Available	48
4.4	Termination of this Plan	48
4.5	Reporting.....	49
4.6	Predictive Modelling to Assess Resources at Risk.....	49
4.6.1	Metocean Data	50
4.6.2	Mobilisation of Predictive Modelling.....	50
4.7	Satellite Monitoring to Detect Resources at Risk	50
4.8	Vessel Survey	51
4.9	Unmanned Aerial Vehicle (UAV)	51
4.10	Aerial Survey	51
4.11	Visual Observation of Megafauna	55
4.12	Personnel Resource Requirements	56
5	OMP2 – MONITORING OF HYDROCARBONS: WEATHERING AND BEHAVIOUR IN MARINE WATERS	57
5.1	Activation of this Plan	57
5.2	Monitoring Rationale	57
5.2.1	Objectives	57
5.3	Resources Available	58
5.4	Termination of this Plan	59
5.5	Survey Methodology.....	59
5.5.1	Water sampling.....	59
5.5.2	Laboratory Analytical Methods	60
5.5.3	Reporting	60
5.6	Equipment	60
5.7	Logistics	61
5.8	Personnel Resource Requirements	62
6	OMP3 – SHORELINE ASSESSMENT SURVEYS.....	64
6.1	Activation of this Plan	64
6.2	Monitoring Rationale and Objectives.....	64
6.2.1	Objectives	64
6.3	Resources available.....	64
6.3.1	Shoreline Assessment Teams.....	65
6.4	Termination of this Plan	65

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

6.5	Survey Methodology.....	66
6.5.1	Pre-survey Planning.....	67
6.5.2	Field Survey	68
6.5.3	Reporting	69
6.6	Data and Information Requirements.....	70
6.7	Field Equipment.....	70
6.8	Logistics	70
6.9	Personnel Resource Requirements	71
7	SMP1 – WILDLIFE IMPACT MONITORING AND SAMPLING.....	72
7.1	Activation of this Plan.....	72
7.2	Monitoring Rationale	72
7.2.1	Resources at Risk	72
7.2.2	Objectives	72
7.3	Resources Available	73
7.4	Termination of this Plan.....	74
7.5	Survey Methodology.....	74
7.5.1	Pre-survey Planning.....	74
7.5.2	Field Survey Assessment.....	75
7.5.3	Live Stranding and Carcass Recording	77
7.5.4	Laboratory.....	79
7.5.5	Reporting	79
7.6	Data and Information Requirements.....	79
7.7	Field Equipment.....	79
7.8	Logistics	80
7.9	Personnel Resource Requirements	80
8	SMP2 – SHORELINE ECOLOGICAL ASSESSMENT AERIAL SURVEYS	81
8.1	Activation of this Plan.....	81
8.2	Monitoring Rationale	81
8.2.1	Objectives	81
8.3	Resources Available	81
8.4	Termination of this Plan.....	82
8.5	Survey Methodology.....	82
8.5.1	Pre-survey Planning.....	83
8.5.2	Field Survey	83
8.5.3	Reporting	84
8.6	Data and Information Requirements.....	84
8.7	Field Equipment.....	84
8.8	Logistics	84

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

8.9	Personnel Resource Requirements	84
9	SMP3 –ASSESSMENT OF FISH FOR THE PRESENCE OF HYDROCARBONS	85
9.1	Activation of this Plan	85
9.2	Monitoring Rationale	85
9.2.1	Objective.....	85
9.3	Resources Available	85
9.4	Termination of this Plan	86
9.5	Survey Methodology.....	86
9.5.1	Field Sampling	86
9.5.2	Sampling Protocol	87
9.5.3	Laboratory Chemical Analysis	87
9.5.4	Reporting	88
9.6	Data and Information Requirements.....	88
9.7	Field Equipment.....	88
9.8	Personnel Resource Requirements	89
10	SMP4 –FISHERIES ASSESSMENT	90
10.1	Activation of this Plan	90
10.2	Monitoring Rationale	90
10.2.1	Objective.....	90
10.3	Resources Available	90
10.4	Termination of this Plan	91
10.5	Survey Methodology.....	91
10.5.1	Field Sampling	92
10.5.2	Laboratory Analysis	93
10.5.3	Recovery monitoring.....	94
10.5.4	Reporting	94
10.6	Data and Information Requirements.....	94
10.7	Field Equipment.....	94
10.8	Logistics	95
10.9	Personnel Resource Requirements	95
11	SMP5 – SHORELINE ECOLOGICAL SURVEYS.....	96
11.1	Activation of this Plan	96
11.2	Monitoring Rationale	96
11.2.1	Objectives	96
11.3	Resources Available	96
11.4	Monitoring Initiation Criteria.....	97
11.5	Monitoring Termination Criteria	97
11.6	Survey Methodology.....	97

	eni australia	Company document identification	Owner document identification		Rev. index.		Sheet of sheets 6 / 117
		000036_DV_PR.HSE.0860.000	Validity Status	Rev. No.	Validity	Rev.	
					PR-OP	0	

11.6.1	Mangrove Monitoring	97
11.6.2	Reporting	99
11.7	Data and Information Requirements	100
11.8	Field Equipment.....	100
11.9	Logistics	101
11.10	Personnel Resource Requirements	101
12	SMP6 – HYDROCARBON FATE AND EFFECTS ASSESSMENT	102
12.1	Activation of this Plan	102
12.2	Monitoring Rationale	102
12.2.1	Objective.....	102
12.3	Resources Available	103
12.4	Termination of this Plan	104
12.5	Survey Methodology.....	104
12.5.1	Hydrocarbon Properties.....	104
12.5.2	Distribution and Fate of Hydrocarbons	105
12.5.3	Reporting	106
12.6	Data and Information Requirements.....	107
12.7	Field Equipment.....	107
12.8	Logistics	107
12.9	Personnel Resource Requirements	107
13	SMP7 – INTERTIDAL AND SUBTIDAL BENTHIC HABITATS	109
13.1	Activation of this Plan	109
13.2	Monitoring Rationale	109
13.2.1	Objective.....	109
13.3	Resources Available	109
13.4	Termination of this Plan	110
13.5	Survey Methodology.....	110
13.5.1	Reporting	110
13.6	Data and Information Requirements.....	110
13.7	Field Equipment.....	111
13.8	Logistics	111
13.9	Personnel Resource Requirement.....	111
14	SMP8 –SOCIOECONOMIC ASSESSMENT	112
14.1	Activation of this Plan	112
14.2	Monitoring Rationale	112
14.2.1	Objective.....	112
14.3	Resources Available	112
14.4	Termination of this Plan	112

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

14.5	Survey Methodology.....	113
14.5.1	Reporting	113
14.6	Data and Information Requirements.....	114
14.7	Field Equipment.....	114
14.8	Logistics	114
14.9	Personnel Resource Requirements	114
15	REFERENCES.....	116

TABLES

Table 1.1:	Operational monitoring programs	16
Table 1.2:	Scientific monitoring programs	16
Table 1.3:	Sensitivities relevant to the OSMP.....	18
Table 1.4:	Scientific monitoring programs preliminary study design.....	21
Table 1.5:	Existing Baseline Information	24
Table 1.6:	OSMP monitoring programs contracts and capability / resourcing requirements	26
Table 1.7:	Environmental panel capability.....	30
Table 1.8:	Thamarrurr Rangers capability	32
Table 1.9:	Third party scientific monitoring specialists	33
Table 3.1:	Vessel contracts contact details	41
Table 3.2:	Aerial contracts contact details	41
Table 3.3:	Commonwealth, State and Territory permit requirements for field monitoring activities.....	43
Table 4.1:	Resources available for OMP1	48
Table 4.2:	Satellite monitoring contact details	51
Table 5.1:	Resources available for OMP2	58
Table 5.2:	Data and information requirements for OMP2	61
Table 5.3:	Logistics for OMP2	62
Table 6.1:	Resources available for OMP3	65
Table 6.2:	Objectives, rationale and monitoring methods that will be applied to pre-survey planning and field surveys in OMP3. Guideline refers to those listed in AMSA (2016)	66
Table 7.1:	Resources available for OMP1	73
Table 7.2:	Example marine fauna data record sheet	77
Table 7.3:	Wildlife data capture for every individual captured	78
Table 7.4:	Data and information requirements for SMP1	79
Table 7.5:	Resources available for SMP1	80
Table 8.1:	Resources available for SMP2	82

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	
					8 / 117

Table 8.2:	Example aerial data record sheet	83
Table 8.3:	Data and information requirements for SMP2	84
Table 9.1:	Resources available for SMP3	85
Table 9.2:	Laboratory services contractor contact details	86
Table 9.3:	Data and information requirements for SMP3	88
Table 10.1	Resources available for SMP4	90
Table 10.2:	Data and information requirements for SMP3	94
Table 11.1	Resources available for SMP5	96
Table 11.2:	Example of coastal flora data parameters and methods (AMSA 2016).....	97
Table 11.3:	Example of invertebrate beach fauna data parameters and methods	98
Table 11.4:	Data and information requirements for SMP5	100
Table 12.1	Resources available for SMP6	103
Table 13.1	Resources available for SMP7	109
Table 14.1	Resources available for SMP8	112
Table 14.2:	Data and information requirements for SMP3	114

FIGURES

Figure 1.1:	Hydrocarbon EMBA (low exposure) for Petrel-3 and Petrel-4 petroleum activities.....	14
Figure 1.2:	An example of the annual marine sampling program locations conducted by Eni for the Blacktip Offshore Operations conducted in 2023.....	23
Figure 4.1:	Flight search patterns (OSRL, 2011)	52
Figure 4.2:	Spill quantification procedure (OSRL, 2016)	53
Figure 4.3:	Standard pollution observation/detection log example (OSRL, 2017)	54
Figure 4.4:	The BAOAC for categorising slick thickness and colour (OSRL, 2018).....	54
Figure 4.5:	Percent coverage chart (AMSA, 2016)	55

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 9 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

ACRONYMS

ACRONYM	Definition
AAPA	Aboriginal Affairs Planning Authority
ADIOS II	Automated Data Inquiry for Oil Spills
AIMS	Australian Institute Of Marine Science
AMOSOC	Australia Marine Oil Spill Centre
AMP	Australian Marine Park
AODN	Australian Ocean Data Network
API	American Petroleum Institute
AUV	Autonomous Underwater Vehicle
BACI	Before After Control Impact
BAOAC	Bonn Agreement Oil Appearance Code
BIA	Biologically important areas
BOM	Blue Ocean Marine
DBCA	Department of Biodiversity, Conservation and Attraction
DEPWS	Department of Environment, Parks, and Water Security
DPIRD	Department of Primary Industries and Regional Development
DPLH	Department of Planning, Lands and Heritage
Eni	Eni Australia BV
EP	Environment Plan
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
GC	Gas chromatography
GCMS	Gas chromatography mass spectrometry
GIS	Geographic Information System
GPS	Global Positioning System
HSE	Health, Safety and Environment
HQ	Headquarters
IMOS	Integrated Marine Observing System
IMT	Incident Management Team
JBG	Joseph Bonaparte Gulf
JSA	Job Safety Analysis
KEF	Key ecological features
M-BACI	Multiple BACI

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 10 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

ACRONYM	Definition
MDO	Marine Diesel Oil
MFO	Marine Fauna Observer
MSDS	Material Safety Data Sheet
MGO	Marine Grade Oil
MNES	Matters of National Environmental Significance
NEBA	Net Environmental Benefit Assessment
NDVI	Normalised Difference Vegetation Index
NLC	Northern Land Council
NOSPEMA	National Offshore Petroleum Safety and Environmental Management Authority
NM	Nautical miles
NT	Northern Territory
NT DoT	Northern Territory Department of Transport
OMP	Operational and Scientific Monitoring Program
OPEP	Oil Pollution Emergency Plan
OPGGGS(E)	Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023
OSMP	Operational and Scientific Monitoring Program
OSRL	Oil Spill Response Limited
PAH	Polynuclear aromatic hydrocarbons
PO	Purchase Order
PPE	Personal protective equipment
ppb	Parts per billion
QA/QC	Quality assurance/control
ROV	Remotely Operated Vehicle
SAP	Sampling and analysis plan
SCAT	Shoreline Clean-up Assessment
SME	Subject matter expert
SMP	Scientific Monitoring Plans
UAV	Unmanned Automatic Vehicle
WA	Western Australia
WA DoT	Western Australian Department of Transport
WAFIC	Western Australian Fishing Industry Council
WHP	Well Head Platform

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 11 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

ACRONYM	Definition
YGP	Yelcherr Gas Plant
ZPI	Zone of Potential Impact

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	
					12 / 117

1 INTRODUCTION

This Operational and Scientific Monitoring Program (OSMP) is the principal plan for providing situational awareness and determining the extent, severity and persistence of environmental impacts from an oil spill originating during the petroleum activities and determining whether environmental protection goals are met.

Eni has adapted this OSMP for the Petrel-3 and Petrel-4 Monitoring and Decommissioning Project from the Eni OSMP produced for Blacktip offshore facilities (including production operations and drilling) in the Joseph Bonaparte Gulf (JBG). Given the larger credible spill scenario identified for the Blacktip operations, the use of the accepted Blacktip OSMP in the event of a Level 2 or 3 hydrocarbon spill during Petrel-3 and Petrel-4 activities has ensured a conservative approach has been applied. This OSMP provides guidance on how and when monitoring data will be collected.

This OSMP is part of a suit of environmental documentation for the Petrel-3 and Petrel-4 activities that includes the:

- Petrel-3 and Petrel-4 Monitoring and Decommissioning Oil Pollution Emergency Plan (OPEP) (000694_DV_ES.HSE.0285.000_00); and
- Petrel-3 and Petrel-4 Monitoring and Decommissioning EP (000694_DV_ES.HSE.0027.000_00)

This OSMP is consistent with the requirements of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (OPGG(S)(E) Regulations). The following was used when developing this OSMP:

- NOPSEMA Operational and Scientific Monitoring Programs Information Paper (NOPSEMA, 2020);
- NOPSEMA Oil Pollution Risk Management Guidance Note (NOPSEMA, 2021); and
- Australian Petroleum Production & Exploration Association (APPEA) Joint Industry Operational and Scientific Monitoring Plan Framework (APPEA, 2021).

1.1 Scope

In the event of a Level 2 or Level 3 hydrocarbon spill (as defined in the Petrel-3 and Petrel-4 OPEP), or as requested by the Control Agency a number of monitoring studies within the OSMP may be implemented. Operational Monitoring Plans (OMPs) may be used to inform the spill response and provide contextual information for impact assessment. Scientific Monitoring Plans (SMPs) may be used to evaluate the impacts and recovery to the marine environment.

1.2 Environment that May Be Affected

The Environment that May Be Affected (EMBA) is used to define the geographic scope of this OSMP. The EMBA is based on using low exposure values which are not considered to be representative of a biological impact but are adequate for identifying the full range of environmental receptors that might be contacted by surface and/or subsurface hydrocarbons and a visible sheen (NOPSEMA, 2019).

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	
					13 / 117

The EMBA for the Petrel-3 and Petrel-4 Monitoring and Decommissioning EP are presented in Figure 1.1. A third area called the Zone of Potential Impact (ZPI) or moderate exposure zone is referenced in the Petrel-3 and Petrel-4 EP and shown on the figure. This area may be representative of an area of biological impact from hydrocarbons.

The spatial extent of any particular OMP or SMP study will depend on the actual and/or potential area exposed by an individual spill event.

Further details on the EMBA and ZPI, including the worst-case credible scenarios which are used to define them, the associated spill modelling, and the environmental sensitivities overlapping them is presented in the Petrel-3 and Petrel-4 EP.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 14 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

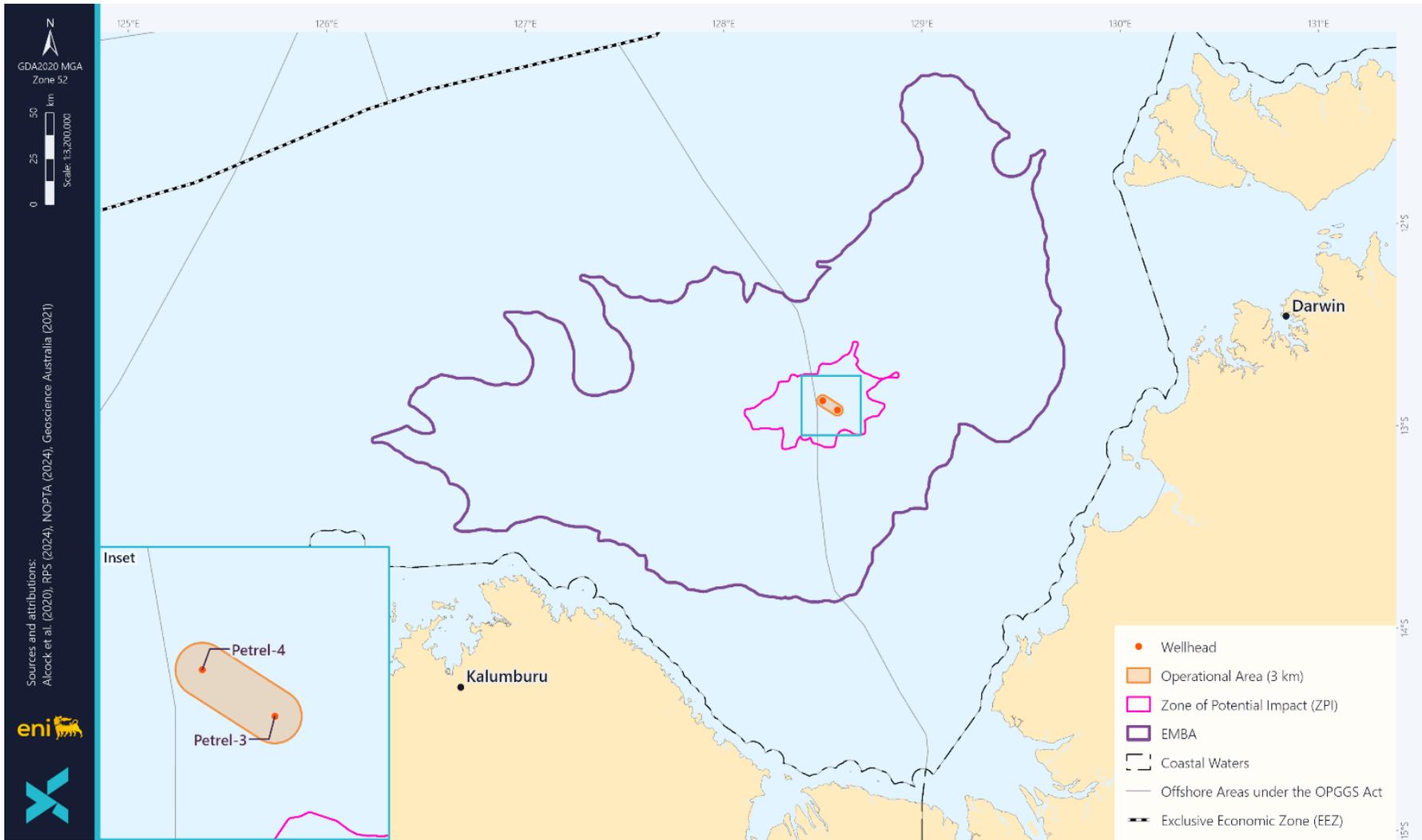


Figure 1.1: Hydrocarbon EMBA (low exposure) for Petrel-3 and Petrel-4 petroleum activities

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

1.3 Objectives

The overarching objectives of this OSMP are to:

- Guide Eni staff through the decisions and responses which will be required to monitor a spill and any environmentally sensitive receptors surrounding or in contact with the spill;
- Provide overall integrated monitoring logistics and coordination to carry out the operational monitoring studies to inform response planning/measures and scientific monitoring studies to quantify impacts to the environment and their subsequent recovery;
- Provide the strategy for each of the monitoring studies including an overview of the monitoring rationale, objectives, methodology and resources required;
- Determine the magnitude of short- and long-term environmental impacts associated with the spill (and its response), including the extent, severity and persistence of the impacts;
- Support the planning and execution of the hydrocarbon spill response activities set out in the Petrel-3 and Petrel-4 OPEP (000694_DV_ES.HSE.0285.000_00);
- Inform remediation efforts, if required; and
- Determine whether environmental performance outcomes have been achieved.

The objectives of each OMP and SMP vary and are presented for each program.

1.4 Operational and Scientific Monitoring

In a response to a hydrocarbon spill, environmental monitoring may be operational (referred to as Type I) or scientific (referred to as Type II). Operational and scientific monitoring have different objectives which significantly influence the monitoring methods likely to be used, the degree of scientific rigour required to meet the monitoring objectives, and the scope of studies. The type of monitoring program implemented, however, will predominantly depend on the scale and nature of the incident and the potential sensitive receptors at risk. This OSMP consists of:

- Operational Monitoring Programs (OMPs) (Sections 4 to 6) – aimed at obtaining situational awareness of a spill and providing information on potential impacts to environmental and socioeconomic receptors. A secondary aim of the OMPs is to assess the efficacy and potential impacts (both positive and negative) of spill response strategies;
- Scientific Monitoring Programs (SMPs) (Sections 7 to 14) – aimed at conducting scientific assessment of spill impacts and the recovery of environmental and socio-economic receptors following a spill; and
- Implementation of the OMPs and SMPs (Section 1.6).

OMPs and SMPs are summarised the sections below.

1.4.1 Operational Monitoring Programs

The OMPs presented in Table 1.1 have been developed to obtain and process information regarding the nature and scale of a hydrocarbon spill and the resources at risk. The OMPs listed in Table 1.1 demonstrates the full operational monitoring capability that Eni has for all hydrocarbon spills depending on the nature and scale of the spill.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Table 1.1: Operational monitoring programs

Study	Study Title	Description
OMP1	Monitoring of Surface Hydrocarbon Distribution at Sea and Visual Observation of Megafauna	The study monitors the distribution of hydrocarbons at sea, including the extent and possible exposure to environmental receptors. The study includes: <ul style="list-style-type: none"> • Aerial and vessel observations; • Oil spill trajectory modelling; • Satellite imagery; and • Opportunistic observations of Marine Megafauna. Opportunistic observations of marine mammals, large cartilaginous fish or marine reptiles will be recorded to help inform the oiled wildlife response and SMP1.
OMP2	Monitoring of Hydrocarbons: Weathering and Behaviour in Marine Waters	The study obtains data on the physical and chemical properties of the hydrocarbon that is released. Data is used to inform the selection of response strategies and predict the potential impacts on the environment. The study may include in situ hydrocarbon and water sampling and analysis. Data from this study is used to assist in the determination of the extent of floating, entrained and dissolved hydrocarbons.
OMP3*	Shoreline Assessment Surveys	The study collects pre- and post-impact data for the shorelines, specifically the areas predicted to be impacted by the spill. The study provides clean up recommendations to inform a shoreline response and data may be used to help inform SMP2 and SMP5.

**Note: Stochastic modelling produced for the Petrel-3 and Petrel-4 Monitoring and Decommissioning activities (RPS 2024) predicted no shoreline accumulation of hydrocarbons at any threshold (see section 1.2). Therefore, OMP3 is not expected to be applicable for this petroleum activity.*

1.4.2 Scientific Monitoring Programs

Scientific monitoring provides qualitative or quantitative data for the assessment of short term and longer-term impacts and recovery of sensitive receptors. The SMPs listed in Table 1.2 demonstrates the full scientific monitoring capability that Eni has for all hydrocarbon spills depending on the nature and scale of the spill.

Table 1.2: Scientific monitoring programs

Study	Study Title	Description
SMP1	Wildlife Impact Monitoring and Sampling	The study includes determination of cause of death for wildlife carcasses (i.e. tissue analysis) (if any).
SMP2*	Shoreline Ecological Assessment Aerial Surveys	The study collects shoreline data to evaluate the presence or absence of sensitive receptors and provides

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 17 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Study	Study Title	Description
		qualitative data on sensitive receptors for the assessment of impacts in SMP5.
SMP3	Assessment of Fish for the Presence of Hydrocarbons	The study obtains data to determine the presence of hydrocarbons in fish, including species caught by commercial and subsistence fishermen. This includes in-field collection of fish species and lab analysis of the fish caught.
SMP4	Fisheries Assessment	The study collects data to assess the effects on fish and fisheries in the Joseph Bonaparte Gulf (JBG) arising from the hydrocarbon spill. This will involve desktop and in-field studies.
SMP5*	Shoreline Ecological Surveys	The study obtains data to assess the impacts on and recovery of the shoreline environment. This includes ground surveys, which will be informed by SMP2.
SMP6	Hydrocarbon Fate and Effects Assessment	The study obtains data to better understand the physical and chemical weathering of the hydrocarbon. This is used to understand and inform the assessment of impacts on the environment and will follow on from OMP2.
SMP7	Assessment of Subtidal Benthic Communities	The study assesses the potential impacts to subtidal benthic communities through the collection of sediment samples (analysed for the presence/absence of contaminants) and seabed imagery.
SMP8	Socio-economic and heritage Assessment	The study assesses the potential socio-economic and heritage impacts and subsequent recovery pathways following a Level 2/3 hydrocarbon spill. This may include impacts and recovery of cultural and heritage features, indigenous heritage features, underwater cultural heritage features (e.g., shipwrecks), socioeconomic features (e.g., tourism and recreational activities, commercial shipping, other marine users).

**Note: Stochastic modelling produced for the Petrel-3 and Petrel-4 Monitoring and Decommissioning activities (RPS 2024) predicted no shoreline accumulation of hydrocarbons at any threshold (see section 1.2). Therefore, SMP2, and SMP5 are not expected to be applicable for this petroleum activity.*

Linkages between the environmental sensitivities identified in the Petrel-3 and Petrel-4 EP and the relevant OMPs and SMPs are summarised in Table 1.3, along with the hydrocarbon phase that has the potential to contact them. For further information on the sensitivities in the EMBA, refer to the respective EP.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 18 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Table 1.3: Sensitivities relevant to the OSMF

Sensitivity	Applicable OSMF Program
Marine megafauna migration areas	OMP1, SMP1
Commercial and recreational fish species	OMP2, SMP3, SMP4
Marine avifauna foraging areas	OMP1, OMP3, SMP2*
Turtle foraging and migration areas	OMP1, OMP2, SMP1
Submerged reefs	OMP1, OMP2, SMP7
Socio-economic receptors	SMP 8, SMP2*

**Note: Stochastic modelling produced for the Petrel-3 and Petrel-4 Monitoring and Decommissioning activities (RPS 2024) predicted no shoreline accumulation of hydrocarbons at any threshold (see section 1.2). Therefore, SMP2 is not expected to be applicable for this petroleum activity.*

1.4.3 Scientific Monitoring Studies Approach

Study Design

To ensure that SMPs can maximise the opportunities to utilise data collected from the OMPs, the SMP studies are designed during the response phase.

A sampling and analysis plan (SAP) will be prepared for each activated SMP. These plans are developed by a Senior Environmental Consultant (or more senior) from Environmental Consultants from Eni's Environmental Consultancy Panel. Each SAP considers which of the below survey designs is most appropriate, with consideration given to the spill trajectory and available baseline data information.

Before After Control Impact (BACI) Study Design

BACI studies are considered where no baseline data exists and there is sufficient time to collect baseline data prior to impact. Data must also be collected at control/reference site(s) to ensure any temporal changes can be assessed against any natural variation. Where sufficient time is available or where there is sufficient pre-existing baseline data, consideration of a Multiple BACI (M-BACI) study design should be considered, using multiple impact and reference sites with data collected over a period of time before and after impact.

Where suitable existing baseline data is available, additional data may be available from other operators in the region) or where trajectory modelling completed as part of OMP1 shows contact is not predicted within 20 days, this survey approach may be considered.

Eni notify consultancies of the Eni Environmental Panel Contract at the time large spill events (Level 2/3) which have the potential for SMPs to be triggered. This allows mobilisation and monitoring to be undertaken within approximately 20 days, providing sufficient time to source vessels/aircraft, finalise the monitoring design, prepare HSE documentation and mobilise to site.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 19 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Under a contractual agreement (Contract No: 5000023936), Eni also have the ability to mobilise the Thamarrurr Rangers for water quality sampling. The Thamarrurr Rangers have their own vessel and water quality sampling equipment box.

Inference from Change Over Time

For some spills and some receptors there may not be suitable reference sites that can be considered comparable to the impact sites. Where suitable control/reference sites are not available, an Inference from Change Over Time study design is considered. This study design is reliant on robust baseline information at sites that will be contacted from the spill. This data is collected pre-impact where impact is not predicted to allow for sufficient planning and preparation time, or where there are existing suitable baseline data sets. The data presented in Table 1.3 is considered during the preparation of the SAP to determine whether the study can be replicated to inform an Inference from Change Over Time study design.

Inference from Change Over Space (gradient design)

This study design is typically not considered where limited or no pre-impact baseline data exist and data cannot be collected prior to impact. The study focuses on representative sites at increasing distances from the source of impact (the spill). Additional temporal data are considered when using this study design to account for other environmental factors (seasonality). Control or reference sites are used in the design of these gradient based studies to help in the assessment of restoration.

Data from OMP1, OMP2 and OMP3 are used in defining the area impacted from the spill when considering sites to assess the gradient of impact.

SAP Assurance Measures

The following science assurance measures are applied where appropriate to ensure SAPs are appropriate to meet the study objectives:

- Peer review; and
- Input from environmental representatives from relevant State/Territory agencies.

Peer reviews are typically used for SAPs for medium to long term studies. Peer review is coordinated by the responsible panel consultant, who select an expert third party provider / SME to undertake the review, including but not limited to specialists identified in Table 1.9.

SAPs are prepared in accordance with relevant standards and guidelines, such as the Oil Spill Monitoring Handbook (CSIRO 2016a) and Sediment Quality Assessment (CSIRO 2016b).

1.4.4 Pre-Spill Assessment of Potential Study Designs and Approach

Marine Diesel Oil (MDO) may be accidentally spilled at from the Petrel-3 and Petrel-4 petroleum activities following a vessel collision.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 20 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

The spill modelling presented in the Petrel-3 and Petrel-4 Monitoring and Decommissioning EP and extent of the ZPI and EMBA has been considered when assessing the most suitable study design and assessing the scale of the SMPs. The modelling results have been used to complete a preliminary screening of study designs (Table 1.4). Study designs are subject to change dependent on the nature and scale of the actual spill.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 21 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Table 1.4: Scientific monitoring programs preliminary study design

SMP	Receptors	Preliminary study design
SMP 1	Marine Fauna	Marine fauna observations during and following a spill are used to assess qualitatively whether marine fauna are demonstrating any signs of stress and whether there are any notable changes to distribution and/or abundance.
	Assessments of the cause of wildlife deaths	This study uses scientific analysis of tissue data and post-mortems to determine whether wildlife deaths are caused by hydrocarbon pollution. No baseline data is required for this survey.
	Marine avifauna	The Petrel-3 and Petrel-4 EP shows the locations of BIAs for seabirds in relation to the ZPI and EMBA. Given the distance from the spill locations there is expected to be sufficient time to collect pre-impact baseline data at these BIAs in a M-BACI survey if trajectory modelling predicts impact.
SMP3	Fish	A gradient survey design is used for this study to ensure the area of impact is clearly delineated.
SMP4	Fisheries	A gradient survey design is used for this study to ensure the area of impact is clearly determined by the study where feasible. An M-BACI study design may also be used where there is suitable pre-impact data for the fishery.
SMP6	Water Quality	A gradient survey design is used to define the area of potential impacts to water quality.
SMP7	Carbonate Bank and Terrace System of the Sahul Shelf / Pinnacles of the Bonaparte Basin	Spill modelling shows contact with the Carbonate Bank and Terrace System of the Sahul Shelf and the Pinnacles of the Bonaparte Basin (refer to the Petrel-3 and Petrel-4 EP). Given that minor contact is predicted, and the depths of the benthic environment, a gradient study design is considered relevant for this SMP.
SMP8	Socio-economic and heritage	A gradient survey design is used to define the area of potential impacts on socio-economic receptors. Inference from Change Over Time study design will also be utilised if possible. Data collected from other OMPs and SMPs may be utilised.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 22 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

1.5 Existing Baseline Data

Baseline data information across the region is presented in Table 1.5. This includes baseline collected by Eni as part of the annual marine monitoring program, which has been occurring since 2010 as a requirement of the pipeline license (EPL230-01) for Eni's other activities.

The objective of the annual marine monitoring program is to characterise the water, sediment and biota from locations within the vicinity of the produced water outfall pipeline. Annual sampling and laboratory analysis allows a comparison of data with the original 2010 baseline survey data, to provide an indication of potential build-up of contamination in the marine environment as a result of produced water discharge.

Reference sites have been chosen in relation to Eni's other petroleum activities, such as the Blacktip Offshore Operations. Figure 1.5 demonstrates some of these sites chosen at random at different locations annually and sediment and biota samples have typically taken in proximity to rocky shorelines, sandy beaches and mangroves. Monitoring is to be expanded in 2024-25 as a requirement of the NT EPA for Eni's other petroleum activities.

The baseline data collected by Eni demonstrated in Table 1.5 meets the requirements for all of Eni's petroleum activities, and therefore, is considered conservative for the baseline data required for the OSMP activities related to the Petrel-3 and Petrel-4 activities.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 23 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	



Figure 1.2: An example of the annual marine sampling program locations conducted by Eni for the Blacktip Offshore Operations conducted in 2023

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 24 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Table 1.5: Existing Baseline Information

Receptors	SMP	Baseline Data	Parameters	Date	Frequency	Data Holder
Benthic Habitat Coral Reef	SMP2 SMP5 and	Blacktip Project Offshore and Intertidal Environment Surveys (2004)	Intertidal and offshore qualitative habitat surveys Coral, intertidal benthos, subtidal benthos, primary productivity	September 2004	Once off	Woodside Eni
		Ichthys Project Marine Monitoring Program		Annual	Annual	INPEX
		Eni sediment and water quality from Emu reef, located offshore Wadeye – AIMS Marine ecological survey of Emu Reef (Udyawer, 2020)		2020	Once off	Eni
Water and Sediment Quality	SMP2, SMP3	Blacktip Operations Annual Marine Surveys: Eni document ID for 2023 - 2024: 000036_DV_PR.HSE.1210.000 Eni document ID for 2022 - 2023: 000036_DV_PR.HSE.1206.000	Water, intertidal biota and sediment sampling at the produced water outfall location and various reference locations (refer to Figure 1.2 for example) Water quality and subtidal sedimentation.	Annual since 2010, as required by the NT EPA	Annual	Eni
		Ichthys Project Marine Monitoring Program		Annual		
Benthic Habitat Seagrass and macro algae	SMP2 SMP5 and	Technical Report – Sea Turtles, Dugongs and Seagrasses in the Region of the Petrel Project	Aerial surveys of the intertidal zone Intertidal benthos, subtidal benthos, primary productivity, seagrass	July 2004 and 2013	Once off	Eni
		Ichthys Project Marine Monitoring Program		Annual	Annual	INPEX
Mangroves and Saltmarsh	SMP2 SMP5 and	Ichthys Project Marine Monitoring Program	Intertidal benthos, subtidal benthos, mangrove	Annual	Annual	INPEX
		Blacktip Operations Annual Marine Surveys: Eni document ID for 2023 - 2024: 000036_DV_PR.HSE.1210.000 Eni document ID for 2022 - 2023: 000036_DV_PR.HSE.1206.000		Water, intertidal biota and sediment sampling at the produced water outfall location and various reference locations (refer to Figure 1.2 for example), including shorelines with mangroves	Annual since 2010, as required by the NT EPA	Annual
Turtles	SMP1	Technical Report – Sea Turtles Dugongs and Seagrasses in the Region of the Petrel Project	Aerial surveys of the intertidal zone Turtle nesting surveys	July 2004	Once off	Woodside Eni
Water Birds	SMP1	Aerial and ground surveys of water bird habitat locations for Parks and Wildlife Commission NT	Aerial and Ground Surveys of the nesting areas in the JBG region.	2006	Once off	Parks and Wildlife Commission NT
Fish	SMP2, SMP3	Status of Key Northern Territory Fish Stocks Reports	The Status of Key Northern Territory Fish Stocks Report covers key species that underpin the Territory's wild-catch fisheries. It focuses on the ongoing sustainability of the harvest from these species, thereby providing scientific assessments of the status of the stocks	Biannually	Biannually	NT government
		WA Status of Fisheries Reports	Provides an annual update on the state of the fish stocks and other aquatic resources of WA	Annual	Annual	WA DPIRD
Marine Megafauna	SMP2, SMP3	Conservation Status of Coastal Dolphins in the Northern Territory	Dolphin abundance and distribution through aerial surveys	Oct 2015	Once off	NT Government
Dugongs	SMP2, SMP3	Technical Report – Sea Turtles Dugongs and Seagrasses in the Region of the Blacktip Project	Aerial surveys of the intertidal zone	July 2004 and 2013	Once off	Eni
		Northern Territory Dugong Aerial Survey, 2015 Ranger Group Summary Report		Oct 2015	Once off	NT Government

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 25 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

1.6 OMP and SMP Implementation and Capability

Table 1.6 summarises the contracts and resources that Eni have in place to implement each OSMP program, along with the timeframes to implement from mobilisation. Further details are provided in individual OMP and SMP sections of this document.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 26 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Table 1.6: OSMP monitoring programs contracts and capability / resourcing requirements

Study	Study Title	Contracts and resourcing	Timeframes	Summary of required personnel capability / resourcing requirements
OMP1	Monitoring of Surface Hydrocarbon Distribution at Sea and Marine Megafauna Observations	<p>AMOSC Participating Member Contract</p> <p>MoU for access to National Plan resources through AMSA</p> <p>OSRL Associate Member Contract</p> <p>Eni global capability</p> <p>The Environment Panel Contracts (Contract No. 5000020088 and 5000020210) may be used to supplement the capability of AMSA, AMOSC and OSRL to provide materials to assist with opportunistic Marine Fauna Observations.</p> <p>KSAT - satellite monitoring (refer to Section TOLL (Contract No. 5000024047) – vessels</p> <p>Offshore Services Australia (Contract No. 500009738) and PHI (Contract No. 5000021388) - aircraft</p> <p>APASA, via AMOSC – Oil Spill Modelling</p> <p>Thamarrurr Rangers (Contract No. 5000023936)</p>	<p>24 hours (AMOSC, OSRL personnel)</p> <p>24 hours (KSAT)</p> <p>Vessel access within 24 hours of mobilisation</p> <p>Visual observations from chartered vessels occur within 72 hours of mobilisation.</p> <p>Visual observation – from vessels of opportunity occur within 24 hours of mobilisation.</p> <p>Visual observation – from aircraft/ helicopter within 24 hours of mobilisation.</p> <p>Best endeavours for access to AUV glider via OSRL</p> <p>24 hours (Thamarrurr Rangers). Thamarrurr Rangers are located in the Wadeye region and can be immediately mobilised to site</p>	<p>Section 1.2 presents the annualised probability of floating oil above 1g/m². The maximum extent of floating oil at 1g/m² is approximately 99km from the modelled Petrel-4 location. Given the small area with any surface expression of floating oil, a single aircraft and observer are considered appropriate for mapping the floating oil distribution. Opportunistic observations of Marine Megafauna would be recorded during each aerial survey.</p> <p>The monitoring team should initially consist of at least:</p> <ul style="list-style-type: none"> • 1 x trained observer; • 1 x person with oil spill assessment training; and • Vessel and aircraft operators. <p>Additional assessment teams should be mobilised as required during the response.</p>
OMP2	Monitoring of Hydrocarbons: Weathering and Behaviour in Marine Waters	<p>OSRL Associate Member Contract</p> <p>Petrolab laboratory</p> <p>TOLL (Contract No. 5000024047) – vessels</p> <p>Thamarrurr Rangers (Contract No. 5000023936)</p> <p>Environment Panel Contracts (Contract No. 5000020088 and 5000020210)</p>	<p>24 hours (OSRL personnel)</p> <p>Best endeavours basis for access to single monitoring unit (AUV)</p> <p>Typically 48 hours – 5 days (Petrolab access)</p> <p>Vessel access within 24 hours of mobilisation</p> <p>24 hours (Thamarrurr Rangers). Thamarrurr Rangers are located in the Wadeye region and can be immediately mobilised to site</p>	<p>Within 24 hours Eni has access to:</p> <ul style="list-style-type: none"> • 1 x OSRL personnel to operate the OSRL fluorometry unit (Turner C3); and • 1 x vessel and crew for towing the fluorometry unit. <p>In addition Eni has the YSI EXO2S sonde (with Cyclops 7F - Refined Fuels attachment and other attachments for water quality) which is located at the YGP and available immediately. It is anticipated that the Turner C3 will monitor the leading edge of the spill initially (OMP2), whilst the YSI EXO2S sonde will take baseline (SMP6) and/or provide additional hydrocarbon sampling over the spill area (OMP2).</p> <p>Eni will utilise the environmental panel to obtain other fluorometer units on a best endeavours basis (not guaranteed) over the course of the response.</p> <p>An Autonomous Underwater Vehicle (AUV) equipped with fluorometer or towed fluorometry unit) may be sourced via OSRL on a best endeavours basis (refer to Section 5.3). The AUV monitoring team should initially consist of at least:</p> <ul style="list-style-type: none"> • 1 x AUV engineer to operate the AUV and support data integration into a response (the engineer would be sourced from the AUV provider); and • 1 x vessel and crew for AUV deployment. <p>Additional assessment teams should be mobilised as required during the response.</p> <p>Additional water quality analysis equipment may be sourced from Eni's laboratory services provider, Petrolab.</p> <p>For further information refer to Section 5.8 (Logistics).</p> <p>Vessels and Aircraft are accessed as per Section 3.</p>

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 27 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Study	Study Title	Contracts and resourcing	Timeframes	Summary of required personnel capability / resourcing requirements
OMP3	Shoreline Assessment Surveys	<p>AMOSOC Participating Member Contract</p> <p>MoU for access to National Plan resources through AMSA</p> <p>OSRL Associate Member Contract</p> <p>TOLL (Contract No. 5000024047) – vessels</p> <p>Offshore Services Australia (Contract 500009738) and PHI (Contract No. 5000021388) - aircraft</p> <p>Thamarrurr Rangers (Contract No. 5000023936)</p> <p>Environment Panel Contracts (Contract No. 5000020088 and 5000020210)</p>	<p>Onsite within 5 days, or 24 hours prior to shoreline contact (if prolonged time to shoreline contact)</p> <p>Best endeavours basis for access to single monitoring unit (UAV)</p> <p>Vessels and aircrafts within 24 hours of mobilisation</p> <p>24 hours (Thamarrurr Rangers). Thamarrurr Rangers are located in the Wadeye region and can be immediately mobilised to site</p>	<p>Section 1.2 demonstrates that the stochastic modelling predicted no shoreline accumulation at any threshold. Therefore, OMP3 is not expected to be applicable for this petroleum activity.</p> <p>For redundancy, specifics and further details on the requirements and capability if this study were to be required are detailed in Section 6.</p>
SMP1	Wildlife Monitoring and Sampling	<p>WA DBCA and NT Parks and Wildlife Commission</p> <p>Environment Panel Contracts (Contract No. 5000020088 and 5000020210) and ability to contract third party specialists</p> <p>TOLL (Contract: 5000024047) – vessels</p> <p>Offshore Services Australia (Contract 500009738) and PHI (Contract No. 5000021388) - aircraft</p>	<p>Contracting timeframe as per Section 1.6.2</p> <p>Vessels and aircrafts within 24 hours of mobilisation.</p>	<p>Given the nature and scale of a spill, one wildlife monitoring team (2 x MFOs) would be mobilised to conduct daily marine fauna observations for a period of at least one month. A vet would also be contracted to complete post-mortems and respond to reports of Marine Fauna fatalities (through NT Parks and/or DBCA).</p> <p>The MFOs may be aboard the response vessel/s or aircraft/s.</p> <p>Specifics and further details on the personnel resource requirements are detailed in Section 7.9</p> <p>For further information on equipment requirements refer to Section 7.7</p> <p>Refer to Section 7.8 for logistic required for this SMP. Vessels and Aircraft are accessed as per Section 3.</p>
SMP2	Shoreline Ecological Assessment Aerial Surveys	<p>Environment Panel Contracts (Contract No. 5000020088 and 5000020210) and ability to contract third party specialists</p> <p>OSRL Associate Member Contract</p> <p>Offshore Services Australia (Contract 500009738) and PHI (Contract No. 5000021388) - aircraft</p> <p>Thamarrurr Rangers (Contract No. 5000023936)</p>	<p>Contracting timeframe as per Section 1.6.2</p> <p>Aircrafts within 24 hours of mobilisation.</p> <p>Best endeavours basis for access to Drone / AUV through OSRL.</p> <p>24 hours (Thamarrurr Rangers). Thamarrurr Rangers are located in the Wadeye region and can be immediately mobilised to site</p>	<p>Section 1.2 demonstrates that the stochastic modelling predicted no shoreline accumulation at any threshold. Therefore, SMP2 is not expected to be applicable for this petroleum activity.</p> <p>For redundancy, specifics and further details on the requirements and capability if this study were to be required are detailed in Section 8.</p>
SMP3	Assessment of Fish for the Presence of Hydrocarbons	<p>Environment Panel Contracts (Contract No. 5000020088 and 5000020210) and ability to contract third party specialists</p> <p>Petrolab laboratory</p> <p>TOLL (Contract No. 5000024047) – vessels</p>	<p>Contracting timeframe as per Section 1.6.2</p> <p>Typically 48 hours – 5 days (Petrolab access)</p> <p>Vessels within 24 hours of mobilisation.</p>	<p>The team for SMP3 would consist of the following personnel. The field team requires experience in the handling of samples for analysis of environmental impacts:</p> <ul style="list-style-type: none"> • 2 x Environmental Consultants for fieldwork; • 1 x Environmental Consultant for reporting; • 1 x laboratory for analysis; and • 1 x subject matter expert selected from Table 1.9 or other suitable provider. <p>Additional teams should be mobilised as required. Specifics and further details on the personnel resource requirements are detailed in Section 9.8.</p>

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 28 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Study	Study Title	Contracts and resourcing	Timeframes	Summary of required personnel capability / resourcing requirements
				For further information on equipment requirements refer to Section 9.7 Refer to Section 3 for logistic required for this SMP and vessel access.
SMP4	Fisheries Assessment	Environment Panel Contracts (Contract No. 5000020088 and 5000020210) and ability to contract third party specialists Petrolab laboratory TOLL (Contract No. 5000024047) – vessels	N/A. Contracting timeframe as per Section 1.6.2 Typically 48 hours – 5 days (Petrolab access) Vessels within 24 hours of mobilisation.	The team for SMP4 should initially consist of at least: <ul style="list-style-type: none"> • 2 x Environmental Consultants for fieldwork; • 1 x Environmental Consultant for reporting; • 1 x Vessel and trawl equipment; • 1 x laboratory for analysis; and • 1 x subject matter expert selected from Table 1.9 or other suitable provider. Additional teams should be mobilised as required. Specifics and further details on the personnel resource requirements are detailed in Section 10.9. For further information on equipment requirements refer to Section 10.7. Refer to Section 10.8 for logistic required for this SMP. Vessels are accessed as per Section 3.
SMP5	Shoreline Ecological Surveys	Environment Panel Contracts (Contract No. 5000020088 and 5000020210) and ability to contract third party specialists TOLL (Contract No. 5000024047) – vessels Thamarrurr Rangers (Contract No. 5000023936)	N/A. Contracting timeframe as per Section 1.6.2 Vessels within 24 hours of mobilisation. 24 hours (Thamarrurr Rangers). Thamarrurr Rangers are located in the Wadeye region and can be immediately mobilised to site	Section 1.2 demonstrates that the stochastic modelling predicted no shoreline accumulation at any threshold. Therefore, SMP5 is not expected to be applicable for this petroleum activity. For redundancy, specifics and further details on the requirements and capability if this study were to be required are detailed in Section 11.
SMP6	Hydrocarbon Fate and Effects Assessment	OSRL Associate Member Contract Environment Panel Contracts (Contract No. 5000020088 and 5000020210) and ability to contract third party specialists TOLL (Contract No. 5000024047) – vessels Thamarrurr Rangers (Contract No. 5000023936)	Contracting timeframe as per Section 1.6.2 Vessels within 24 hours of mobilisation. 24 hours (Thamarrurr Rangers). Thamarrurr Rangers are located in the Wadeye region and can be immediately mobilised to site	SMP6 would act separately to OMP2. Eni has the YSI EXO2S sonde (with Cyclops 7F - Refined Fuels attachment and other attachments for water quality) which is located at the YGP and available immediately. It is anticipated that the Turner C3 will monitor the leading edge of the spill initially (OMP2), whilst the YSI EXO2S sonde will take baseline (SMP6) and/or provide additional hydrocarbon sampling over the spill area (OMP2) depending on the response requirement and movement of the spill. Given that Eni have purchased their own sampling equipment and have access to trained personnel it is anticipated that future pre-emptive baseline will be obtained at select locations, either as part of the NT EPA license arrangement or additional to that. Eni will utilise the environmental panel to obtain other fluorometer units on a best endeavours basis (not guaranteed) over the course of the response. The SMP6 team should initially consist of at least: <ul style="list-style-type: none"> • 1 x personnel to operate the YSI EXO2S sonde; and • 1 x vessel and crew Additional teams should be mobilised as required. Specifics and further details on the personnel resource requirements are detailed in Section 12.9. For further information on equipment requirements refer to Section 12.7.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 29 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Study	Study Title	Contracts and resourcing	Timeframes	Summary of required personnel capability / resourcing requirements
				Refer to Section 12.8 for logistic required for this SMP. Vessels are accessed as per Section 3.
SMP7	Subtidal Habitat Assessment	<p>Environment Panel Contracts (Contract No. 5000020088 and 5000020210) and ability to contract third party specialists</p> <p>TOLL (Contract No. 5000024047) and ability to contract third party providers – vessels, ROV, divers</p> <p>Thamarrurr Rangers (Contract No. 5000023936)</p>	<p>Contracting timeframe as per Section 1.6.2</p> <p>Vessels within 24 hours of mobilisation.</p> <p>Best endeavours for ROV, divers and other ancillary services.</p>	<p>A single team is considered appropriate to implement a gradient monitoring design assessing potential impacts to the Carbonate Bank and Terrace System of the Sahul Shelf and the Pinnacles of the Bonaparte Basin. Given the nature and scale of the MDO spill, this study may not be deemed suitable.</p> <p>The team should initially consist of:</p> <ul style="list-style-type: none"> • 2 x Environmental Consultants for fieldwork; • 1 x Environmental consultant for reporting; • 1 x vessel with ROV and operators; • 1 x commercially qualified diver team (if required); • 2 x towed/drop camera unit; • 2 x sediment grabs; and • 1 x subject matter expert selected from Table 1.9. <p>Additional teams should be mobilised as required. Specifics and further details on the personnel resource requirements are detailed in Section 13.9.</p> <p>For further information on equipment requirements refer to Section 13.7.</p> <p>Refer to Section 13.8 for logistic required for this SMP. Vessels are accessed as per Section 3.</p>
SMP8	Socio-economic Assessment	<p>Environment Panel Contracts (Contract No. 5000020088 and 5000020210) and ability to contract third party specialists</p> <p>TOLL (Contract No. 5000024047) and ability to contract third party providers – vessels, ROV, divers</p> <p>Thamarrurr Rangers (Contract No. 5000023936)</p>	<p>Contracting timeframe as per Section 1.6.2</p> <p>Vessels within 24 hours of mobilisation.</p>	<p>A single team is considered appropriate to implement a socio-economic assessment. The team should initially consist of at least:</p> <ul style="list-style-type: none"> • 1 x vessel and crew; • 1 x experienced Socioeconomic and Heritage Specialist (or similar) with at least 5 years' experience in collecting and analysing socio-economic data; and • Field Personnel as required with experience in relevant sampling and/or recording techniques.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 30 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

1.6.1 Environmental Panel Capability

The Eni Environmental and Social Impact Consultancy Services Panel (Contract No. 5000020088 and 5000020210) provides an existing framework for immediate engagement of a contractor.

Eni will ensure that an agreed contract is in place with an Environmental Service Provider capable of supplying personnel to support the OSMP throughout the life of Petrel-3 and Petrel-4 activities. The number of panel contract providers and capability may vary over the acceptance period of the Petrel-3 and Petrel-4 EP but as a minimum the contract will include access to the capability outlined in Table 1.7.

The total required number of personnel to implement this OSMP will be dependent on the nature and scale of the spill. Maintaining a panel with the minimum requirements outlined in Table 1.7 ensures access to at least two Senior Environmental professionals to develop the SAPs required to implement the SMPs and to manage the implementation of the SMPs. Maintaining access to at least eleven Environmental Professionals across the panel ensures access to enough consultants to complete the initial field programs required to be implemented by Eni's panel contractors.

Additional support to manage and assist with the implementation of each SMP may be contracted as required depending on the nature and scale of the spill. If additional resources are required, Eni would either contract these directly or request additional resources through the Environmental Panel Contract.

Table 1.7: Environmental panel capability

Minimum Requirements	Ability to deliver or contract the following services
<p>Access to a Marine Sciences team with demonstrated experience of conducting marine environmental surveys including:</p> <ul style="list-style-type: none"> • Marine sediment sampling surveys; • Water quality surveys; and • Project management of large marine sciences scopes. <p>The combined Marine Sciences team has at least eleven (11) Environmental professionals in Australia with an Environmental-based degree, plus at least one GIS professional.</p> <p>Has at least 2 Senior personnel with an environmental based degree and 12+ years' experience, with demonstrated environmental study design and implementation experience.</p>	<p>Access to a marine sciences team that has the ability to deliver/manage/subcontract the following services:</p> <ul style="list-style-type: none"> • Fisheries assessments; • Shorebird surveys; • Turtle monitoring programs; and • Subtidal habitat assessment.
SMP1 – Wildlife Impact Monitoring and Sampling	
<ul style="list-style-type: none"> • 2 x MFOs 	<ul style="list-style-type: none"> • 1 x vet

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 31 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Minimum Requirements	Ability to deliver or contract the following services
	<ul style="list-style-type: none"> Relevant subject matter experts
SMP3 - Assessment of fish for the presence of hydrocarbons SMP4 - Fisheries Assessment	
<ul style="list-style-type: none"> 2 x Environmental Consultants for fieldwork 1 x Environmental Consultant for reporting 	<ul style="list-style-type: none"> Field monitoring equipment 1 x laboratory for analysis 1 x subject matter expert
SMP6 - Hydrocarbon Fate and Effects Assessment	
<ul style="list-style-type: none"> 1 x Environmental Consultant for fieldwork / reporting 	<ul style="list-style-type: none"> Additional environmental consultants through third party contracts as required
SMP7 - Subtidal habitat assessment	
<ul style="list-style-type: none"> 2 x Environmental Consultants for fieldwork 1 x Environmental Consultant for reporting 	<ul style="list-style-type: none"> Field monitoring equipment, including towed/drop camera units, sediment grabs 1 x subject matter expert
SMP8 - Socio-economic Assessment	
<ul style="list-style-type: none"> 2 x Environmental Consultants for fieldwork 1 x Environmental consultant for reporting 	<ul style="list-style-type: none"> 1 x laboratory for analysis 1 x subject matter expert

- AUV, UAV and operators are available through OSRL master service agreement held by Eni
- Traditional Owner involvement will be facilitated by Eni
- Vessels, ROV and divers are available through Eni logistics contracts.

1.6.2 Contract Timeframes

Eni have OSRL and AMOSC contracts in place with guaranteed response timeframes and availability for OMP1 and OMP3 (refer to Sections 4 and 6).

The environmental panel will be available and engaged based on 'best endeavours' and typical contracting/procurement timeframes. Typically Eni are able to raise a Purchase Order (PO) within the environmental panel within 2-3 days. In emergency situations, the turnaround time for a PO can be within 1 day. Once a PO is raised mobilisation of the resource is likely to be within 2-3 days.

Eni have the ability to contract third party scientific monitoring specialists or SMEs (as identified in Section 1.6.3), through the environmental panel contractors or directly. Subcontracts through the environmental panel will be executed on a best endeavours basis. Typically a PO can be raised by an environmental panel contractor within one week when an existing contract exists with the third-party contractor.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 32 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

1.6.3 Thamarrurr Rangers Capability

Under a contractual agreement (Contract No: 5000023936), Eni have the ability to mobilise the Thamarrurr Rangers as first responders for water quality sampling (SMP6) and other SMPs (refer to Table 1.6). The Thamarrurr Rangers have the below equipment (Table 1.8).

Table 1.8: Thamarrurr Rangers capability

Item	Number	Description
Vessel	2 (Yidiwurri and Warlmarr)	7.6m/2D survey/2 crew/6 Passengers 5.8m/NS Survey/2 crew /3 Passengers
Rangers	8	2 Coxswains, 6 crew
Monitoring Equipment	1	Water multiparameter tester - pH, conductivity, temperature, turbidity
	1	Ponar sediment grab sampler (Petite)
	1	Depth measure (for measuring depth of bore to top of water level)
	1	Metal water bailer

Clean sample bottles are located at the Eni YGP and can be utilised by the Thamarrurr Rangers for sample collection. The Thamarrurr Rangers have been trained in water quality sampling and towing of a fluorometer unit (full day training by AIMS in August 2023). Online training in the Eni YSI EXO2S sonde (lowered from the side of a vessel) will occur prior to the activity commencement.

1.6.4 Eni Global Capability

The Eni Global HQ HSEQ department has the capability to support Eni Australia through frame agreements with various environmental contractors. In first instance contact is made to the Eni HQ HSEQ Environmental manager and Eni HQ HSEQ Emergency manager. Contracting third-parties through this means and access to Eni personnel would be on a best endeavours basis.

1.6.5 Third party scientific monitoring support

Eni have also identified third party scientific monitoring specialists (not a definitive list), as identified in Table 1.9. Where required, Eni may engage them directly or through the environmental panel. Table 1.9 outlines the capability of third party scientific monitoring specialists to respond to all OSMP studies relevant for all of Eni's petroleum activities.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 33 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Table 1.9 Third party scientific monitoring specialists

Study	Study Title	Supplementary capability	Company and Contact Details	Examples of specialists and Demonstrated Experience
SMP1	Wildlife Impact Monitoring and Sampling	Marine Fauna Observation Studies and studies into the death of marine fauna	<p>Worley Consultancy: Level 14/240 St Georges Terrace, Perth WA 6000 ph: (08) 9278 8111</p> <p>Stantec Consultancy: Ground Floor, 226 Adelaide Terrace, Perth WA 6000 ph: (08) 6222 7000</p> <p>Avifauna Research and Services (Phil Straw): 12 Speers Street, Speers Point NSW 2284, Australia m. 0411 249 075</p> <p>Blue Plant Marine: Head Office PO Box 919, Jamison Centre, Canberra, ACT, 2614 ph: +61 (0)431 664 472 dave.paton@blueplanetmarine.com</p> <p>Nahiid Stephens: 9360 2666, N.Stephens@murdoch.edu.au</p>	<p>Worley Consultancy: Avifauna, marine turtle, artificial light, marine and coastal aerial surveys, oiled wildlife response (previously Pendoley).</p> <p>Stantec Consultancy: Marine turtle tagging and hatchling program (previously Pendoley)</p> <p>Phil Straw: Avifauna, wetlands management</p> <p>Blue Plant Marine: Marine megafauna surveys and monitoring, EIA, Environmental compliance monitoring, MMO, MFO and PAM Operator personnel, Navigation and Seismic QA/QC personnel, Survey Environmental Advisor (SEA) services, Oiled Wildlife Response services (OWR)</p> <p>Nahiid Stephens (BSc, BVMS (Hons), MANZCVSc (Vet Path)): surgical biopsy interpretation and post-mortem examinations marine mammals</p>
SMP2	Shoreline Ecological Assessment Aerial Surveys	Drone providers capable of surveying, including NDVI assessments	<p>Hawkeye Imagery: Level 24, 77 St George's Terrace, PERTH WA 6000</p> <p>Natura Pacific: Natura Pacific Head Office 2/55 Dover Drive, Burleigh Heads, QLD, 4220 Gold Coast</p>	<p>Hawkeye Imagery: Aerial Inspection, Monitoring, photography and video, survey and mapping, data processing and modelling and thermal imagery</p> <p>Natura Pacific: EPM, EOA, Management Plans, Drone Aerial Survey Services, ecological assessment, Fauna spotter and catcher services</p>

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 34 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Study	Study Title	Supplementary capability	Company and Contact Details	Examples of specialists and Demonstrated Experience
SMP3	Assessment of Fish for the Presence of Hydrocarbons	Analysis to determine the presence of hydrocarbons in fish, including species caught by commercial and subsistence fishermen. This will include in-field collection of fish species and lab analysis of the fish caught	<p>Leeder Analytical: 33 Steane St, Fairfield, VIC, 3078</p> <p>SGS: 28 Reid Road, Perth, Western Australia, 6105 Australia</p>	<p>Leeder Analytical: Enviro and Petroleum Analysis (Oil spill dispersant testing, oil weathering studies, hydrocarbon finger printing, method development, water analysis, environment forensic, air testing etc.)</p> <p>SGS: Environmental, oil and gas lab testing</p>
SMP4	Fisheries Assessment	Subject matter experts to collect data to assess the effects on fish and fisheries in the Joseph Bonaparte Gulf arising from the hydrocarbon spill. This will involve desktop and in-field studies.	<p>Euan Harvey: Room 183 Vin Davies Building, Bentley Campus, Curtin University, 08 9266 9674</p> <p>James Penn: Fisheries 0417 947 743</p> <p>Fishwell Consultant: 27 Hesse Street, Queenscliff, Victoria, 3225. T: + 03 5258 4399, M: 0408 581 599</p> <p>CEE: Unit 4, 150 Chesterville Road, Cheltenham, VIC Australia, 3192, ph: 03 9553 4787</p> <p>AIMS: Darwin - +61 8 8920 9240, reception@aims.gov.au. Perth - +61 8 6369 4000, WAAdmin@aims.gov.au</p>	<p>Euan Harvey: Marine Fish Professor</p> <p>James Penn: Fisheries Scientist</p> <p>Fishwell Consultant: Fisheries Biology, population dynamics and stock assessment</p> <p>CEE: EIA, Marine ecology, fisheries and aquaculture studies, aquatic ecological monitoring programs, water quality studies, Dredging and sea dumping applications, underwater video and photography, sediment sampling</p> <p>AIMS: Fish biodiversity surveys and demographic studies for impacts, management strategies</p>
SMP5	Shoreline Ecological Surveys	Capability available within environmental panel. Additional providers identified to provide supplementary	<p>AIMS: Darwin - +61 8 8920 9240, reception@aims.gov.au. Perth - +61 8 6369 4000, WAAdmin@aims.gov.au</p> <p>Jacobs: 11th Floor, Durack Centre, 263 Adelaide Terrace, P.O. Box H615, Perth,</p>	AIMS: coastal habitat surveys

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 35 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Study	Study Title	Supplementary capability	Company and Contact Details	Examples of specialists and Demonstrated Experience
		expertise and personnel where required.	WA 6001, Australia. Phone: +61 8 9469 4400. Fax: +61 8 9469 4488	
SMP6	Hydrocarbon Fate and Effects Assessment	The study will obtain data to better understand the physical and chemical weathering of the hydrocarbon. This will be used to understand and inform the assessment of impacts on the environment and will follow on from OMP2.	OSRL Leeder Analytical: 33 Steane St, Fairfield, VIC, 3078	OSRL Leeder Analytical: Enviro and Petroleum Analysis (Oil spill dispersant testing, oil weathering studies, hydrocarbon finger printing, method development, water analysis, environment forensic, air testing etc.)
SMP7	Assessment of Subtidal Benthic Communities	Capability available within environmental panel. Additional providers identified to provide supplementary expertise and personnel where required.	AIMS: Darwin - +61 8 8920 9240, reception@aims.gov.au . Perth - +61 8 6369 4000, WAadmin@aims.gov.au Jacobs: 11th Floor, Durack Centre, 263 Adelaide Terrace, P.O. Box H615, Perth, WA 6001, Australia. Phone: +61 8 9469 4400. Fax: +61 8 9469 4488	AIMS: benthic community/habitat surveys, sediment collection and analysis
SMP8	Socio-economic and heritage	Capability available within environmental panel. Additional providers identified to provide supplementary expertise and personnel where required.	AIMS: Darwin - +61 8 8920 9240, reception@aims.gov.au . Perth - +61 8 6369 4000, WAadmin@aims.gov.au Western Australian Fishing Industry Council (WAFIC) - +61 8 9432 7777	AIMS: benthic community/habitat surveys, sediment collection and analysis WAFIC: subject matter expertise

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 36 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

1.7 OSMP Review and Revisions

This OSMP is subject to review, and revised, if necessary, on an annual basis to incorporate the following:

- Significant change in the oil spills risks associated with the Petrel activities;
- Significant environmentally relevant changes (e.g., changes to relevant legislation, stakeholder information, MNES, State/Commonwealth management plans, or availability of new literature);
- Findings from internal or external audits or exercises;
- Lessons learned following any actual spill event; and
- Changes in Eni's Environmental Panel contract capability.

Regulation 41 of the OPGGS(E) Regulations provides for the revision of this OSMP framework at least 14 days before the end of the period of five years from the most recent approval of any associated petroleum EP.

An annual audit of Eni's Environmental Panel contract capability will be completed against Table 1.7 to ensure capability is maintained over the acceptance of the Petrel-3 and Petrel-4 EP. An audit of Eni's Environmental Panel contract capability will be completed 3 months prior to activity commencement.

1.8 OSMP Testing

OSMP activation included in the IMT annual exercise, to ensure the IMT and OSMP Services Provider personnel are familiar with the activation process. Exercise may simulate several different aspects of an oil spill incident and may involve third parties. OSMP activation may be included as component of this exercise.

1.9 Consulting with Stakeholders

Stakeholder (including regulators) consultation and external notification requirements are described in the Petrel-3 and Petrel-4 OPEP (000694_DV_ES.HSE.0285.000_00).

Consultation may also be undertaken with stakeholder (including regulators) in the event of a Level 2 or Level 3 oil spill with respect to input and/or review of a spill-specific Sampling and Analysis Plan (SAP) for scientific monitoring studies.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 37 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

1.10 Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria

Operational and Scientific Monitoring		
EPO: OSMP is implemented to meet the objectives of the individual Operational Monitoring Plans (OMPs) and Scientific Monitoring Plans (SMPs)		
Control	PS	MC
Maintenance of a state of readiness for implementation of the OSMP	Arrangements in place for implementation of OMP1, OMP2 and OMP3 through AMOSC, AMSA National Plan and OSRL.	MoU for access to National Plan resources through AMSA AMOSC Participating Member Contract OSRL Associate Member Contract
	Arrangements in place for implementation of the OSMPs.	MoU for access to National Plan resources through AMSA AMOSC Participating Member Contract OSRL Associate Member Contract The Eni Environment and Social Impact Consultancy Services Panel Contract provides an existing framework for immediate engagement of a contractor.
	Annual review of contact and contract details within the OSMP to ensure relevancy.	Records of annual review and update of the contact and contract details where relevant.
	Review of the environmental panel contract capability: <ul style="list-style-type: none"> Approximately 3 months prior to activity commencement To ensure resources are in place to implement the OMSP.	Statement of compliance (prior to activity commencement) or similar from the panel contractor against the capability set in Section 1.6.1.
	Review of the environmental Thamarrurr Rangers capability: <ul style="list-style-type: none"> Approximately 3 months prior to activity commencement To ensure resources are in place to implement the OMSP.	Statement of compliance or similar from the Thamarrurr Rangers against the capability set in Section 1.6.3.
	Thamarrurr Rangers and Eni personnel have been trained in the use of the YSI EXO2S sonde prior to activity commencement	Training records show that the relevant people have been trained in the use of the YSI EXO2S sonde.
	The YSI EXO2S sonde (including Cyclops 7F - Refined Fuels attachment) is available at YGP	Records show that the YSI EXO2S sonde is stored at YGP.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 38 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Operational and Scientific Monitoring		
EPO: OSMP is implemented to meet the objectives of the individual Operational Monitoring Plans (OMPs) and Scientific Monitoring Plans (SMPs)		
Control	PS	MC
	prior to activity commencement.	
	Vessel is available for OMPs and SMPs within 72 hours of mobilisation.	Logistics contracts include vessel hire within 24 hours (available for OMP in 72 hours).
	Aerial surveillance can be mobilised within 24 hours.	Logistics contracts include aerial surveillance capability within 24 hours.
	Contracting timeframe of environmental panel is within 5 days.	Eni contracting and procurement confirms that the environmental panel can be contracted within 5 days.
	OSMP activation included in the IMT annual exercise. Exercise may simulate several different aspects of an oil spill incident and may involve third parties. OSMP activation may be included as component of this exercise.	Exercise reports Confirmation of equipment and response personnel provision from service providers
The OSMPs are terminated only when specific criteria is met.	Individual OMPs and SMPs are terminated when specific criteria has been met as per individual plans.	IAP documentation.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 39 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

2 RISK ASSESSMENT AND DATA MANAGEMENT

Risk assessment, data management and quality assurance and control must be considered for **ALL** OMPs and SMPs. These considerations are described below.

2.1 Risk Assessment, Occupational Health and Safety Considerations

It is essential that the appropriate personal protective equipment (PPE) always be worn during a response. The PPE requirements may vary with work location and the type of survey work undertaken. A minimum requirement will be the use of appropriate sun protection (including head gear) and long sleeves and pants.

2.1.1 Vessel Surveys

Vessel fieldwork must consider health and safety risks associated with marine activities. Eni's safety management processes should be followed in a spill response situation, including aspects of:

- Risk management (permit to work, Job Safety Analysis [JSA]);
- Marine safety; and
- Occupational hygiene (e.g. PPE).

All personnel should be aware of the limitations and safe operating procedures of all equipment used in the response operation. This should, where necessary, involve a risk assessment and the development of a site-specific health and safety plan, including details for induction and briefing procedures. Examples of hazards to be considered are:

- Access (e.g. to and from location);
- Exposure (e.g. to hydrocarbons);
- Inhalation of toxic components;
- Heat stress;
- Manual handling;
- Ignition sources and fuel source; and
- Skin contact with oil and other chemicals.

2.1.2 Aerial Surveys

Aerial survey work must consider health and safety risks associated with monitoring activities. Eni's safety management processes should be followed in a spill response situation, including aspects of:

- Risk management (permit to work, JSA);
- Aerial safety; and
- Occupational hygiene (Material Safety Data Sheet [MSDS], PPE).

All personnel should be aware of the limitations and safe operating procedures of all equipment used in the response operation. This should, where necessary, involve a risk assessment and the development of a site-specific health and safety plan, including details for induction and briefing procedures. Examples of hazards to be considered are:

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 40 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

- Access (e.g. weather forecast);
- Heat stress; and
- Manual handling.

2.2 Data Management

Monitoring will result in data generated from a number of sources in a number of different formats:

- Logs and forms;
- Photographs and video recordings (digital);
- Annotated maps; and
- Portable GPS/GIS units.

Management of the generated data requires extensive data storage, analysis, backup and archiving. Samples should be treated as legal evidence and secured against loss or tampering. Data records and results of analysis should be delivered to info@eniaustralia.com.au and HSE.Mailbox@eniaustralia.com.au. Copies of data sheets and analysis should be archived by Eni Document Control (documentcontrol@eniaustralia.com.au).

2.3 EPBC Act Protected Matters Considerations

Risk management (permit to work, JSA) will consider the following with respect to matters protected under Part 3 of the EPBC Act which may be present at monitoring locations:

- Likelihood of encounter with protected species at monitoring locations and the seasonal activity of the protected species (i.e., nesting, calving, etc.);
- Review of the latest threatened species recovery plans or conservation advice with respect to species 'threats' and management controls and restrictions to prevent impacts during monitoring activities; and
- Confirmation of regulatory restrictions (e.g., with EPBC Regulations 2000 – Part 8 Division 8.1) which must be observed when undertaking monitoring activities.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 41 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

3 LOGISTICS

3.1 Vessel Mobilisation

With Managing Director authorisation, the IMT Leader can request the mobilisation of AMSA and AMOSC resources, including vessels and aircraft.

Eni may also engage vessel operators and owners in WA, NT and Singapore to charter suitable vessels through TOLL.

The vessel specifications should allow for the coverage of the required sampling area, safe access to water for sampling and sufficient deck space for storage of field equipment and samples.

The Thamarrurr Rangers (if mobilised) have access to of their own vessels (refer to Table 1.8).

Table 3.1: Vessel contracts contact details

Company	Function	Contact Details
TOLL	ISS emergency response	ISS 24/7 emergency responder: 1300 131 001 or 1800 639 621 or +61 (03) 8545 1000
	Reception (Eni)	+61 8 9320 1111
	Logistics – Support (Eni)	+61 488 101 637

3.2 Aircraft Mobilisation

The IMT Leader has authorisation to request the mobilisation of AMSA and AMOSC resources, including vessels and aircraft.

Eni also has contracts in place to charter helicopters from OSA, PHI and Hardy Aviation. Contact details are listed in Table 3.2. Aerial surveillance can be mobilised within 24 hours.

Table 3.2: Aerial contracts contact details

Company	Contact Details
Offshore Services Australia Truscott Operations	OSA.TSTOPS@chcheli.com +61 8 9161 4072
PHI	phibmeops@phi-int.com +61 8 9138 7719
Hardy Aviation	ops@hardyaviation.com.au + 61 427 278 110

3.3 Permit requirements

OSMP field sampling and monitoring activities may be undertaken in Commonwealth waters (>3NM from shore), WA state waters (<3NM from WA coast) and Northern

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 42 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Territory waters (<3NM from NT coast). Permits that may be required for field monitoring activities are outlined in Table 3.3.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 43 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Table 3.3: Commonwealth, State and Territory permit requirements for field monitoring activities

Permit	Relevance	Legislation and Agency	Remarks
Commonwealth			
General Permit Application for: <ul style="list-style-type: none"> Threatened species and ecological communities; Migratory species; Whales and dolphins; and Listed marine species. 	Required for scientific sampling of matters listed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	EPBC Act Department of the Environment and Energy	It would also be beneficial to apply for an exemption from Part 13 permitting requirements under section 303A of the EPBC Act. The Minister would then consider whether it is in the national interest to grant an exemption.
Access to Biological Resources in a Commonwealth Area for Non-commercial Purposes	An applicant must obtain written permission from each Access Provider. The Access Provider must state permission for the applicant to: <ul style="list-style-type: none"> enter the Commonwealth area; take samples from the biological resources of the area; and remove samples from the area. 		The EPBC Act provides that certain actions are not offences and, therefore, would not require a permit. However, the survey(s) (i.e. 'the action') would need to satisfy one of the criteria set out at section 197 and it is not immediately apparent that it would do so. If it did, there would still be a requirement to notify the Secretary if the action was taken.
Western Australia*			
Application for an exemption to collect aquatic organisms (alive or dead) for commercial purposes, including: <ul style="list-style-type: none"> the eggs, spat, spawn, seeds, spores, fry, larvae or other source of reproduction or offspring of an aquatic organism (including plants and algae); and a part only of an aquatic organism, including the shell or tail. 	Exemption under Section 7(2)(b) of the Fish Resources Management Act 1994	Fish Resources Management Act 1994 Department of Primary Industries and Regional Development (DPIRD)	Required anywhere in WA State waters and out to 200 nautical miles (NM). In the event that OSMP sampling was required within WA state waters, DPIRD may either consider expediting the application process or providing a ministerial exemption

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 44 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Permit	Relevance	Legislation and Agency	Remarks
Exclusions from permit requirements include aquatic mammals, aquatic reptiles, aquatic birds, amphibians or (except in relation to Part 3 and Division 1 of Part 11) pearl oysters			
<ul style="list-style-type: none"> Application for a licence to take (i.e. capture, collect, disturb or study) fauna for scientific purposes (Regulation 17), and/or application form for a Scientific or Other Prescribed Purposes Licence to take protected flora from Crown Land for non-commercial purposes (CLM59) 	<p>Fauna means:</p> <ul style="list-style-type: none"> any animal indigenous to any State or Territory of the Commonwealth or the territorial waters of the Commonwealth any animal that periodically migrates to and lives in any State or Territory of the Commonwealth or the territorial waters of the Commonwealth. <p>The Act specifically refers to licensing the taking of protected fauna. However, it is recommended to have this in place for collection of any fauna should any protected fauna be inadvertently collected</p>	<p>Wildlife Conservation Act 1950</p> <p>Department of Biodiversity, Conservation and Attraction (DBCA)</p>	<p>Required in WA State waters to three nm, and for collection of biological resources in Commonwealth waters requiring transit through WA state waters. Permits require nomination of a person in charge who must be on site during sampling. Due to the potential for shift rotations during the permitted period, it is recommended that separate permits be obtained for party chiefs/Field leads involved (where multiple names cannot be included in a single permit).</p> <p>In the event that OSMP sampling was required within WA state waters, DBCA may either consider expediting the application process or providing a ministerial exemption</p>
Entry Permits for access to Aboriginal Land, and requirements for disturbance or relocation of Aboriginal Heritage sites	<p>Legally required for transit through an Aboriginal Reserve, under Part II of the Aboriginal Affairs Planning Authority Act 1972</p> <p>Natural Heritage Listed places are protected under the EPBC Act.</p> <p>Assessment under this Act may be required for any disturbance to the values for which these areas were</p>	<ul style="list-style-type: none"> Aboriginal Affairs Planning Authority Act 1972 EPBC Act Aboriginal Heritage Act 1972 <p>Department of Planning, Lands and Heritage (DPLH)</p>	<p>A Section 18 permit may take in excess of 18 months to obtain under normal conditions.</p> <p>https://www.dplh.wa.gov.au/information-and-services/online-services/entry-permits-for-access-to-aboriginal-lands</p>

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 45 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Permit	Relevance	Legislation and Agency	Remarks
	listed (e.g. Aboriginal Heritage). Removal, relocation or interference with Aboriginal Heritage objects or sites requires Ministerial approval under Section 18 of the Aboriginal Heritage Act 1972 (via DPLH) The DPLH maintains a register of Aboriginal sites, which can be accessed via the enquiry system at www.daa.wa.gov.au		
Northern Territory*			
Application for a permit to undertake scientific research on wildlife	A permit is required for taking or interfering with wildlife for scientific purposes.	Territory Parks and Wildlife Conservation Act 2006 NT Department of Primary Industry and Resources	https://nt.gov.au/environment/animals/wildlife-permits/permits-take-interfere-with-wildlife
Application for a special permit under Section 17 of the Fisheries Act	A permit is required to take fish or aquatic life or be in the possession of fishing gear that is other not permitted, for research.	Fisheries Act NT Department of Primary Industry and Resources - Fisheries Division	\$725 application fee
Land access permit	A permit is a written document authorised by NLC on advice of the Traditional Owners that sets out permission, terms and conditions to enter the private land and/or intertidal waters of a group of Aboriginal people.	Aboriginal Land (Northern Territory) Act 1978 Northern Territory Aboriginal Sacred Sites Act Administering agency: Department of Planning, Lands and Heritage Permit issuer: Relevant Land Council	Land access must be organised with the relevant Land Council for landowner approval, typically via the Northern Land Council (NLC). If an application is successful, the permit holder is advised to contact the Aboriginal Areas Protection Authority (phone numbers 8981 4700 / 8952 6366) before commencing any activities. A permit holder undertaking scientific research is required to credit intellectual

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 46 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Permit	Relevance	Legislation and Agency	Remarks
			property rights appropriately and agree that nothing in the permit is intended to affect or derogate from any rights, title or interest in indigenous cultural expression or intellectual property.
Aboriginal Affairs Planning Authority (AAPA) Lands Permit (ALPS)	People passing through or visiting communities on Aboriginal Lands Trust reserves proclaimed under Part III of the Aboriginal Affairs Planning Authority Act 1972 (the Act) must obtain an Aboriginal Affairs Planning Authority (AAPA) Lands Permit (ALPS) to comply with the Act.	Aboriginal Affairs Planning Authority Act 1972 Administering agency: Department of Planning, Lands and Heritage Permit issuer: Aboriginal Affairs Planning Authority	The permit type will depend on the purpose and mode of travel.
Equipment-specific exemptions (all states and Commonwealth waters)			
Fisheries exemption for use of sub-legal mesh sizes	For demersal fish populations studies (including juveniles) as part of scientific monitoring	Local regulations (e.g. the Fisheries Management (South East Trawl Fishery) Regulations) made under the Fisheries Management Act 1991 Relevant Fisheries Departments	N/A

**Note: Stochastic modelling conducted for Petrel-3 and Petrel-4 activities do not predict exposure to Western Australian state waters or Northern Territory waters (see Section 1.2), therefore permits are not anticipated to be required in the event of a spill from this petroleum activity.*

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 47 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

4 OMP1 – MONITORING OF SURFACE HYDROCARBON DISTRIBUTION AT SEA AND VISUAL OBSERVATION OF MEGAFUNA

4.1 Activation of this Plan

Petroleum facility release	Vessel spill
The IMT Leader will activate this plan if it is determined that the spill is Level 1. Level 2 or Level 3 (as defined in the relevant OPEP).	The IMT Leader will activate this plan if requested by AMSA (the Control Agency).

4.2 Monitoring Rationale

The spatial and temporal extent of hydrocarbon distribution in the marine environment will be determined after a hydrocarbon spill. Information on the distribution of hydrocarbons provides the details necessary to assist in selecting appropriate response strategies and determining resource requirements. Additionally, wildlife resources present in the area will be determined to assess what resources are likely to be affected during a spill. The distribution of hydrocarbons simulated in models can further assist with the selection of appropriate response strategies and the required resources through predicting the spill trajectory pathway.

The purpose of OMP1 is to locate and confirm a reported hydrocarbon spill and record any opportunistic observations of marine mammals, large cartilaginous fish or marine reptiles. Monitoring during the operations phase will focus on identifying and qualifying the marine wildlife at risk and identify if strategies to manage and mitigate this risk are required. If confirmed, monitoring should focus on the movement of the spill to determine what resources/receptors are likely to be affected (at risk) and may require protection or clean-up, and to guide response and recovery operations. This will be achieved by assessing hydrocarbon spill trajectory using modelling tools and rapidly collecting data to verify the actual distribution of the hydrocarbon spill (size and movement) in real time, including satellite imagery, vessel and aerial based surveys where appropriate.

4.2.1 Objectives

The objectives of this OMP are to:

- Evaluate the spatial extent of a hydrocarbon spill (spatially and temporally) via satellite imagery;
- Track the movement of the hydrocarbon spill;
- If necessary, identify areas of potential shoreline contact and sensitive resources/ environmental receptors at risk to enable timely prioritisation of protection priorities to guide the management and execution of hydrocarbon spill response operations; and
- Record any observations of marine mammals, large cartilaginous fish or marine reptiles.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 48 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

4.3 Resources Available

See Table 4.1 for available resources. Contracts are summarised in Section 1.6.

The IMT Leader has authorisation to request the mobilisation of AMSA, AMOSC or OSRL resources if required or requested by the Control Agency.

Environmental Consultants from Eni's Environmental Panel Contracts may also be mobilised to support the identification of environmental resources at risk during an ongoing response.

Visual observation will be sought from vessels of opportunity within 24 hours of mobilisation.

Table 4.1 Resources available for OMP1

Resource	Provider	Timeframe
OSTM	APASA, via AMOSC – Oil Spill Modelling Eni HQ OSRL	24 hours (available 24/7)
	National Plan resources through AMSA	As per National Plan
Satellite monitoring	KSAT AMOSC OSRL Eni HQ	24 hours (available 24/7)
Unmanned aerial vehicle (UAV)	Various UAV providers via OSRL	Best endeavours
Vessels	TOLL (Contract: 5000024047)	Visual observations from chartered vessels occur within 72 hours of mobilisation.
	Thamarrurr Rangers	
Aircraft	Babcock Offshore Services Australia (Contract 500009738)	Visual observation – from aircraft/ helicopter within 24 hours of mobilisation.
	PHI (Contract No. 5000021388)	
Aerial surveillance trained observer	AMOSC OSRL	24 hours (personnel)
	National Plan resources through AMSA	As per National Plan

4.4 Termination of this Plan

This plan can be terminated by the Control Agency when the following are met:

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 49 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

- The source of the spill is contained, i.e. no more hydrocarbons entering the environment;
- Oil is no longer observed (as described by the Bonn Agreement Oil Appearance Code-BAOAC) at rainbow or metallic sheen or discontinuous or continuous true oil colour. Hydrocarbon thicknesses below these thresholds indicate that the thickness is less than 0.3microns and poses little threat of harm to environmental receptors;
- OSTM indicates entrained hydrocarbons are below the 100ppb threshold and that sensitive receptors are not under threat; and
- Relevant stakeholders (e.g. WA DoT, NT DEPWS) agree that no further impacts to shorelines (if contacted) or marine megafauna are likely to be observed.

4.5 Reporting

The Environment Advisor (or delegate) will be responsible for the approval and dissemination of the below reports:

- Daily report on hydrocarbon spill surveillance and tracking observations;
- Final report to summarise surveillance and tracking data – approx. 4 weeks post OMP termination; and
- Daily fauna sighting reports.

4.6 Predictive Modelling to Assess Resources at Risk

Accurate and timely detection of hydrocarbon impacts will depend on a good understanding of the actual and predicted slick trajectory and fate estimates (weathering) of the hydrocarbon.

Data input on the various parameters in the model are to assume a 'worst-case' so as to overestimate the possible locations of the hydrocarbon spill. Spill trajectories can be updated and re-analysed with Metocean forecasts.

Manual input data to be provided for modelling includes:

- Spill release point (latitude and longitude or easting and northing);
- Spill start date and time;
- Manual wind speed/direction and sea temperature;
- Hydrocarbon type and grade (hydrocarbon name; American Petroleum Institute [API]; specific gravity; pour point; wax content; sulfur content) – this information is available in the petroleum activity's EP; and
- Estimated spill release rate and volume (instantaneous or total; continuous release).

Geo-referenced surveillance information and observations from the spill scene should be used to update the model daily. This will include details from satellite imagery on the spatial extent and forecast meteorological data.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 50 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

4.6.1 Metocean Data

Information on weather conditions – i.e., prevailing winds and currents from Metocean office; relevant tidal and current station data; sea state; temperature; visibility/precipitation, etc. – will be provided to Eni’s modelling contractor and can be obtained from:

- Metocean data
 - <http://imos.aodn.org.au/imos/>.
- Real-time meteorological data:
 - www.bom.gov.au/wa/observation
 - www.eldersweather.com.au/wa
 - www.transport.wa.gov.au/imarine/19138.asp.

4.6.2 Mobilisation of Predictive Modelling

OSTM will be undertaken on an initial and daily basis through AMOSC by a third-party contractor (i.e. APASA). Eni Headquarters in Milan, Italy, also has capability to undertake oil spill trajectory modelling.

Oil weathering modelling may also be undertaken using the Automated Data Inquiry for Oil Spills (ADIOS) model developed by the US National Oceanographic and Atmospheric Administration. ADIOS can be operated by Eni’s Environmental Advisor. To run the model, inputs are required about oil type, volume, weather conditions, water properties and release type (e.g. instantaneous or continuous). Further information on ADIOS can be found at:

[Environmental Restoration | response.restoration.noaa.gov](http://environmentalrestoration.noaa.gov)

4.7 Satellite Monitoring to Detect Resources at Risk

Eni has contracted KSAT to provide satellite monitoring for its operations.

KSAT provide high fidelity photographs using different spectrums to identify the trajectory of the oil. In case of a spill reported to KSAT by Eni, KSAT will activate its Emergency Response Team that is targeted to be assembled within 24 hours. Contact details are outlined in Table 4.2.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 51 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Table 4.2: Satellite monitoring contact details

Company	Contact Details
KSAT	Direct phone: +47 77 60 02 51
	Switchboard: +47 77 60 02 50
	Fax: +47 77 60 02 99

4.8 Vessel Survey

Prior to the arrival of aircraft for aerial surveillance, vessels at the scene or vessels of opportunity will be used to provide initial observational data.

If required, the IMT Leader has authorisation to request the mobilisation of AMSA resources, including vessels. A field vessel will be deployed within 72 hours. Refer to Section 3 for deployment of vessels. Thamarrurr Rangers (if mobilised) have access to their own vessel locally and may be deployed within 24 hours (tides permitting).

Vessels will be instructed to follow the leading edge of the hydrocarbon slick.

4.9 Unmanned Aerial Vehicle (UAV)

UAVs can utilise multiple sensors including Visual (HD), Infrared, and Ultraviolet to support a response and can provide real-time monitoring of the spill.

UAVs can be mobilised through contacting OSRL and are available on a best endeavours basis and dependent upon obtaining permission to fly and availability of the UAV suppliers to respond.

4.10 Aerial Survey

Aerial reconnaissance surveys will use either a rotary or fixed wing aircraft to track and monitor the spill movement. Eni has contracts in place to charter helicopters from Offshore Services Australia and PHI and aircraft outlined in Section 3. Aerial surveillance will be mobilised within 24 hours.

Flight paths will be confirmed prior to each flight and will be planned to start and finish within daylight hours for clear observation of the sea surface. A flight plan will be prepared in advance and agreed with the pilot and relevant authorities and take account of any information that will reduce the search area (i.e. last known sighting and expected trajectory of the oil). The search altitude is likely to be determined by the prevailing visibility, but as a guide from ITOPF (2011):

- Clear conditions over the open ocean should set altitude at 300–450m; and
- Clear conditions close to shore, 120–150m assuming no restrictions.

The surveys will continue until the termination criteria are reached. The control agencies IMT will be responsible for flight timetabling and flight paths.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 52 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Trained aerial observers can be mobilised through AMOSC. A trained AMOSC aerial observer should:

- Confirm the location of the spill using ladder or spiral search paths (see Figure 4.1); and
- Quantify the amount of oil on the water and verify the results from modelling.

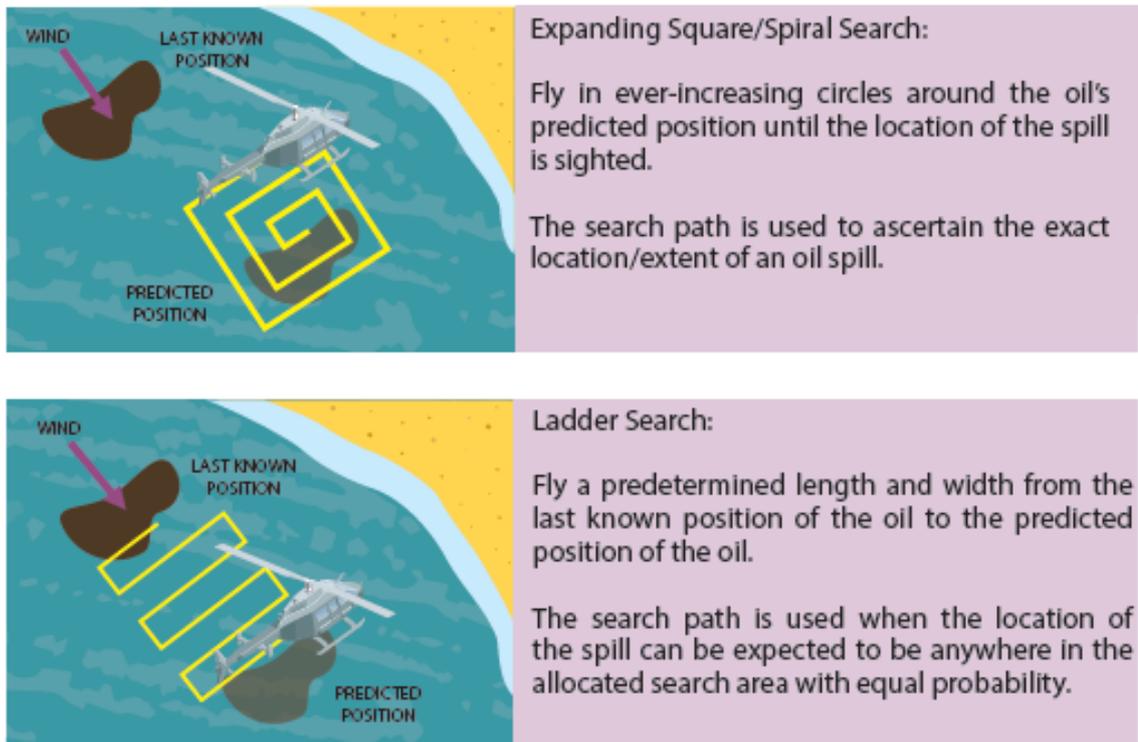


Figure 4.1: Flight search patterns (OSRL, 2011)

Photographs or video should be taken during the aerial survey to record the hydrocarbon spill. Where possible, features such as ships and the coastline should be included to provide an estimate of scale. The photographer should follow these guidelines:

- Take photograph as vertically as possible (53°);
- Use the shortest exposure time (1/250 or faster);
- Overlap photographs by about 20%; and
- Use a polarised filter to reduce the brilliance of the surface of the water.

Figure 4.2 provides a visual representation of the spill quantification procedures.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 53 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

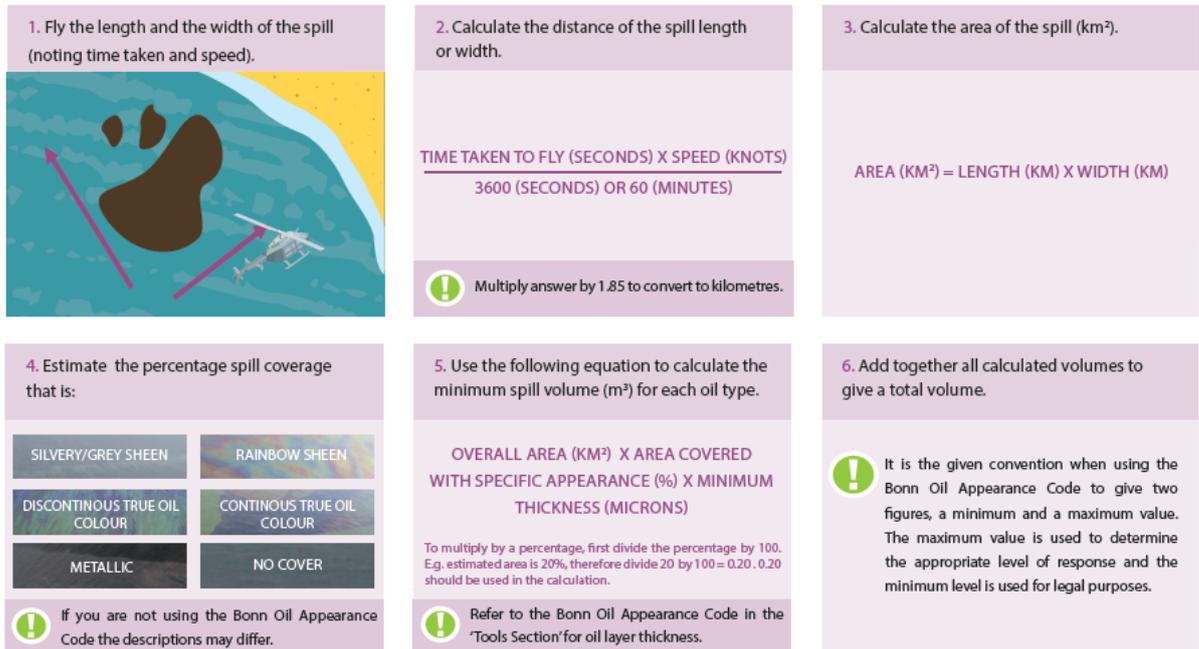


Figure 4.2: Spill quantification procedure (OSRL, 2016)

Observations will be recorded via a standard aerial surveillance observer log (Figure 4.3) and include:

- day, time, observer name, altitude, visibility;
- Location and extent, latitude and longitude using a global positioning system (GPS) for location;
- Colour of oil slick or sheen: using Bonn Agreement Oil Appearance Code (see Figure 4.4);
- Character: i.e. windrow, slick, patch, streak (use consistent descriptive phrases throughout);
- Features, e.g. leading edge; and
- Coverage, percent coverage description (see Figure 4.5).

 eni australia	Company document identification		Owner document identification	Rev. index.		Sheet of sheets
	000036_DV_PR.HSE.0860.000			Validity Status	Rev. No.	
				PR-OP	0	

REPORTING AUTHORITY		AIRCRAFT REG	MISSION No	CAPTAIN	CO PILOT	OPERATOR	OBSERVER	DAY	DATE	MONTH	YEAR						
FLIGHT TYPE	ROUTE / AREA							TIME OVER THE SEA		TOTAL							
								DAY	NIGHT	hrs	mins	hrs	mins				
No	AREA CODE	TIME UTC	POSITION		DIMENSIONS		AREA COVER %	OILED AREA Km ²	OIL APPEARANCE COVERAGE (PERCENTAGE - %)						MINIMUM VOLUME m ³	MAXIMUM VOLUME m ³	COMBAT Y / N
			LATITUDE 'NORTH'	LONGITUDE 'EAST/WEST'	LENGTH Km	WIDTH Km			1	2	3	4	5	Oth			
No	POLL TYPE	DETECTION						PHOTO	VIDEO	FLIR	WEATHER				REMARKS		
		SLAR	IR	UV	VIS	MW	LF	Y / N	Y / N	Y / N	WIND	CLOUD	VIS	SEA	Wx		
											°		FT				
											°		FT				
											°		FT				
											°		FT				
No	REMARKS										OIL APPEARANCE TABLE						
											No	OIL APPEARANCE DESCRIPTION	MINIMUM VOLUME m ³ / km ²	MAXIMUM VOLUME m ³ / km ²			
											1	SHEEN	0.04	0.30			
											2	RAINBOW	0.30	5.00			
											3	METALLIC	5.00	50.0			
											4	DISCONTINUOUS TRUE COLOUR	50.0	200			
											5	TRUE COLOUR	200	>200			

Figure 4.3: Standard pollution observation/detection log example (OSRL, 2017)

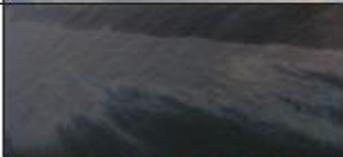
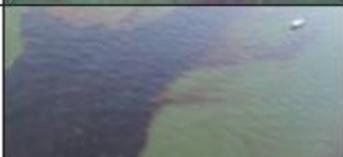
Code	Description/ Appearance	Layer Thickness Interval (Microns)	Litres per km ²	Typical Appearance
1	Sheen (silver/grey)	0.04 - 0.30	40 - 300	
2	Rainbow	0.30 - 5.0	300 - 5000	
3	Metallic	5.0 - 50	5000 - 50.000	
4	Discontinuous True Oil Colour	50 - 200	50.000 - 200.000	
5	Continuous True Oil Colour	>200	>200.000	

Figure 4.4: The BAOAC for categorising slick thickness and colour (OSRL, 2018)

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 55 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

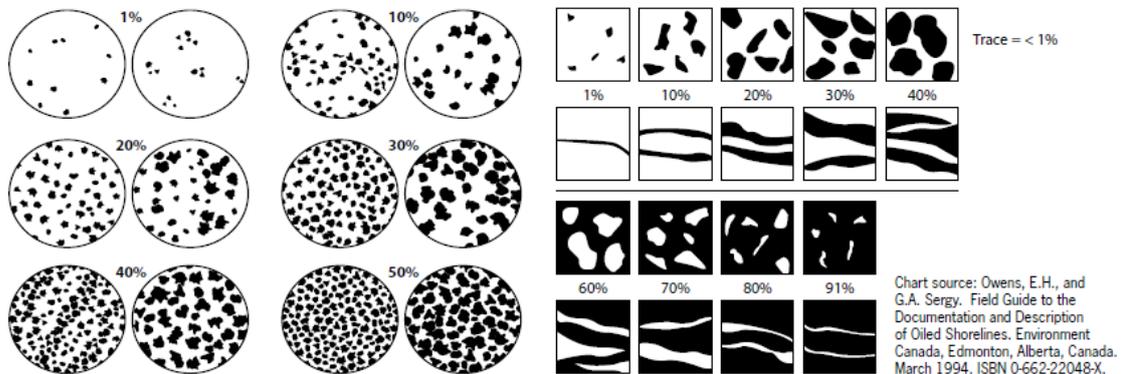


Figure 4.5: Percent coverage chart (AMSA, 2016)

4.11 Visual Observation of Megafauna

The purpose of this survey is to record and collate observations of any marine megafauna during the implementation of OMP1. Given the low precision of data/knowledge on the distribution and abundances of most marine fauna in the area, quantification of abundance is unlikely. Qualitative data on numbers of marine fauna recorded, presence, and any behavioural impacts will be recorded. Methods are principally designed to collect information on presence/absence, mortality and the status of those individuals encountered (i.e. behaviour, oiling, etc.).

Aerial Survey

Aerial surveillance for marine fauna should ideally be undertaken daily in conjunction with the aerial survey OMP1. As such the survey will only detect visible animals without confidence of estimates of abundance. Visual and photographic/video data should be collected and information on sea state and flight path as outlined below. Ideally the following should apply if possible:

- Information is to be recorded about sea state (using Beaufort Sea state scale), cloud cover (in octaves), glare (strength and area affected) and overall sighting conditions (good; moderate; poor) at the beginning of each survey and when conditions change;
- Line-transect, extending 400 m either side of the flight path, for a flight time of approximately ten minutes are to be completed with observers recording numbers and identification to the lowest taxonomic level possible (see AMSA 2016);
- Flight paths should be confirmed prior to each flight, but strip transects should be based on a grid or ladder approach to capture both the area affected by the slick, and the unaffected area immediately around the slick;
- All sightings are to be marked with location coordinates (GPS);
- Data is to be collected in standardised observation logbook records. For each cetacean sighting, data collated should include: location; species; group size; group composition (adults and calves); behaviour (directional swimming; non-directional swimming; feeding; resting), cue (underwater; body at surface; splash; blow); swimming direction and reaction to the survey craft;

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 56 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

- Video (high definition) and photographic (still image) data is to be collected to provide a permanent record (if possible) and
- 500 ft is the preferred flight height for identification purposes but will be dependent on the flight height utilised for the aerial surveys.

Vessel Surveys

A vessel-based survey for presence of marine mammals is likely to occur opportunistically. If required, the IMT Leader has authorisation to request vessel resources. Refer to Section 3.

Gathering observational data on any marine mammals in close proximity to the surface slicks and documenting any unusual behaviour or ill health will be undertaken in addition to details on species, location, etc.

Standardised survey methods can however still be applied by a trained observer and include the following:

- Position the observer at the highest accessible point;
- At the beginning and end of each observation period record time, ship's location, course and speed. Record information on sea state (using Beaufort Sea state scale), cloud cover (in octaves), glare (strength and area affected) and overall sighting conditions (good, moderate, poor) at the beginning of each survey and when conditions change; and
- Collect effort data every 30 minutes, or more frequently if there are marked changes in ship course or speed, or sighting conditions change.

Aerial observations will be made concurrent with vessel and/or ground-based surveillance where required.

4.12 Personnel Resource Requirements

Given the small area with any surface expression of floating oil from a hydrocarbon spill during Petrel-3 and Petrel-4 activities, a single aircraft and observer are considered appropriate for mapping the floating oil distribution, if required. Opportunistic observations of Marine Megafauna would be recorded during each aerial survey.

The monitoring team would be required to consist of at least:

- 1 x trained observer;
- 1 x person with oil spill assessment training; and
- Vessel and aircraft operators.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 57 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

5 OMP2 – MONITORING OF HYDROCARBONS: WEATHERING AND BEHAVIOUR IN MARINE WATERS

5.1 Activation of this Plan

Petroleum facility release	Vessel spill
The IMT Leader will activate this plan if it is determined that the spill is Level 1, Level 2 or Level 3 (as defined in the relevant OPEP).	The IMT Leader will activate this plan if requested by AMSA (the Control Agency).

5.2 Monitoring Rationale

Each spill will have unique physical and chemical properties and behaviours when released to the environment. This will be dependent on the type of oil, sea temperatures and weather conditions as well as how the oil is released (e.g., a subsurface or surface release). Hence it is necessary to establish a fingerprint of the freshly released oil. Once hydrocarbons have been released to the environment, weathering and/or attenuation processes such as evaporation, dispersion, dissolution and sedimentation will lead to the degradation or removal of hydrocarbons from the water column, while emulsification can result in its persistence.

The speed and importance of these processes will depend on the components within the hydrocarbon involved in the spill and the oceanographic conditions present at the time of the spill. Therefore, the fate (where it goes) and its persistence (how long it remains in the system) can vary considerably in time and space. While laboratory analysis will have been undertaken to determine the chemical and physical properties of the hydrocarbon, monitoring the changes to the oil properties during a spill is still required to verify the laboratory results and to feed back into the current and planned spill response operations.

Various spill response actions will depend on the physical properties of oil (e.g. viscosity can affect skimming operations) and the information will inform what strategies will be most effective.

Sampling of hydrocarbons in the water column will provide data on the behaviour of the hydrocarbon, its dispersal, and the chemical properties and toxicity of compounds as it weathers (which will be used to predict effects on the identified resources and receptors at risk).

5.2.1 Objectives

The objectives of this OMP are to:

- Provide field-based information on the presence, type, quantity, properties, behaviour and weathering of the spilled oil to assist in spill response operations;
- Provide information on the temporal and spatial extent of the hydrocarbon plume; and
- Determine the distribution and concentrations of hydrocarbons in the water column during the spill event.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 58 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

The information collected under this OMP will be used to feedback into OMP1 for input into the forecast modelling and verification of the surveillance observations.

5.3 Resources Available

See Table 5.1 for available resources. Contracts are summarised in Section 1.6.

Eni have access to Turner C3 Fluorometers through OSRL which can be attached to the AUV or deployed separately in a towed configuration from a vessel. To monitor for the presence/absence of hydrocarbons in the water column, water samples would be analysed under an existing agreement with Petrolab laboratory.

Eni have the ability to mobilise the Thamarrurr Rangers as first responders for water quality sampling. The Thamarrurr Rangers have two vessels and water quality sampling equipment box (refer to Table 1.8) and have been trained in water quality sampling and towing of a Turner C3 fluorometer (full day training by AIMS in August 2023). Online training in the Eni YSI EXO2S sonde (lowered from the side of a vessel) will occur prior to the petroleum activities.

Eni through OSRL have access to an Autonomous Underwater Vehicle (AUV). OSRL have partnered with Blue Ocean Monitoring Limited and an agreement provides OSRL access to Blue Oceans Riptide and Slocum Glider for preparedness and response operations. The AUV capability is provided on a best endeavours basis.

Table 5.1 Resources available for OMP2

Resource	Provider	Timeframe
Eni YSI EXO2S sonde (including Cyclops 7F - Refined Fuels attachment)	Eni	24 hours (Equipment located at the Eni YGP)
1 x Turner C3 Fluorometer (submersible) 1 x OSRL fluorometry unit operator	OSRL	24 hours (OSRL personnel)
1 x Autonomous underwater vehicle (AUV) with fluorometry sensor 1 x AUV engineer	Blue Ocean Marine via OSRL	Best endeavours basis
Sample bottles	Eni	Immediate. Located at the Eni YGP
Vessels	TOLL	Vessels within 24 hours of mobilisation.
	Thamarrurr Rangers	Single vessel, typically within 24 hours of mobilisation
Laboratory analysis services and sample containers	Petrolab laboratory	Typically 48 hours – 5 days to raise a PO

	eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 59 / 117
				Validity Status	Rev. No.	
				PR-OP	0	

Resource	Provider	Timeframe
Turner C3 Fluorometer (submersible) or other suitable units and additional water quality sampling equipment	Environment panel	Best endeavours basis

Note: It is anticipated that the Turner C3 will monitor the leading edge of the spill initially (OMP2), whilst the YSI EXO2S sonde will take baseline (SMP6) and/or provide additional hydrocarbon sampling over the spill area (OMP2), depending on the response requirements and movement/extent of the spill. It is recognised that monitoring may be required in more than one location as the response progresses, Eni will therefore utilise the environmental panel or contract directly to obtain further fluorometer units and sampling equipment on a best endeavours basis (not guaranteed) over the course of the response. There are a number of other units available within Australia and internationally that could be mobilised to the location as needs arise over the spill duration.

5.4 Termination of this Plan

This plan can be terminated by the Control Agency when:

- It can be demonstrated that no further environmental improvement outcomes can be achieved through continued implementation of this OMP;
- Physical response options are no longer being considered and/or implemented;
- It is determined that there is no risk of shoreline impacts from the spill; and
- Monitoring objectives have been met.

5.5 Survey Methodology

Sampling design will be confirmed with the Eni IMT prior to mobilisation of the vessel to the spill location. Sample design will be dependent on the location of the spill (surface/subsurface).

It has been estimated that in a first strike response a field team using a single vessel will be capable of covering 27nm / day per (12 hour) day during towed sampling activities. This figure is calculated with the following equation:

$$\text{Max sample speed} = 2\text{knots} = 2.3\text{nm/h}$$

$$12\text{ hour day} \times 2.3\text{nm} = \underline{27.6\text{nm a day / vessel}}$$

This sampling range is considered appropriate to cover an advancing spill front in the early phases of a response.

5.5.1 Water sampling

Water samples will be collected as part of this program to verify chemical, hydrocarbon and nutrient concentrations. Water samples would be collected during fluorometry tows.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 60 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

5.5.2 Laboratory Analytical Methods

Water samples will be analysed by Petrolab laboratory for the following analytes:

- Total recoverable hydrocarbons (TRHs);
- Polycyclic Aromatic Hydrocarbons (PAHs); and
- BTEX.

Water sampling laboratory analyses, in particular TRH, will be used to better interpret field fluorescence data. Eni has a contract with Petrolab for laboratory services, including the above analysis. Unless otherwise advised by Eni IMT Leader, samples will be sent to Petrolab's laboratory for analysis.

5.5.3 Reporting

The Environment Advisor (or delegate) will be responsible for the approval and dissemination of the below reports:

- Daily reporting on pro forma during field surveys including daily monitoring objectives, plan, analytical progress and emerging results – sent to the IMT Leader each day;
- Laboratory analysis reports (approx. 1 month for analysis); and
- Weathering assessment reports.

5.6 Equipment

Several specialised pieces of equipment will be used to undertake OMP2 in the event of a spill. The equipment is specified below:

- Fluorometers (Turner C3) and backscatter sensors to detect hydrocarbon presence and estimate oil concentrations in the marine environment.
- Water sample equipment to undertake water sampling alongside the fluorometry tows to allow for the potential to calibrate the fluorometry unit. Eni has benchtop oil in water measurement units and clean sample bottles at the Eni YGP
- YSI EXO2S sonde (lowered from the side of a vessel) – the Cyclops 7F attachment allows the detect hydrocarbon presence and estimate oil concentrations in the marine environment. The sonde may also record a range of water quality characteristics (e.g. turbidity, pH, temperature). Data and Information Requirements

This OMP will rely on the outputs from the OMP1 and on the extent of the oil spill from both the predictions of the oil spill distribution and oil spill surveillance.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 61 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Table 5.2: Data and information requirements for OMP2

Information	Details
OMP1	Distribution of oil.
Metocean data	Integrated Marine Observing System (IMOS): http://imos.aodn.org.au/imos/
Real-time meteorological data	www.bom.gov.au/wa/observation
	www.eldersweather.com.au/wa
	www.transport.wa.gov.au/imarine/19138.asp
Satellite imagery	https://asset.joubeh.com/

5.7 Logistics

Monitoring equipment will be sourced locally where available, otherwise typically transported to Darwin by commercial flight.

Blue Ocean Marine (BOM) personnel and AUV (through OSRL) are based in Perth and BOM will organise transport to Darwin via commercial flight. The AUV will be mobilised to the spill location by vessel and deployed into the water by a davit arm or crane.

Implementation of this OMP will require a field deployment vessel. The vessel specifications should allow for:

- Covering the required sampling area;
- Vessel class and service category;
- Safe access to water for sampling; and
- Davit arm or crane for AUV deployment, if required.

It is expected to be no larger than the project vessel used for the petroleum activities.

Thamarrurr Rangers have access to two vessels (refer to Table 1.8).

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 62 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Table 5.3: Logistics for OMP2

Equipment	Location	Mobilisation/deployment
OSRL fluorometer	Singapore	Deployment to spill location by vessel (Eni)
YSI EXO2S sonde (including attachments)	YGP	Pick up prior to mobilisation to the location by vessel (Eni).
Water sampling equipment	YGP Darwin and interstate	Refer to Table 1.8 for the kit owned by the Thamarrurr Rangers. Rangers or Eni personnel at YGP will pick up clean sample bottles from YGP prior to mobilisation to location. Additional equipment can be sourced from via the environmental panel consultants, OSRL and AMOSC.
BOM AUV	Perth	Mobilisation to Darwin by commercial flight (organised by BOM) Deployment to spill location by vessel (Eni) and into water by davit arm or crane
Charter vessels	Darwin	Mobilise from Darwin Harbour and arrive at spill location within 72 hours.
	Local	Local vessels that are already utilised by the petroleum activity may also be used.
Local vessel	Wadeye	Mobilise through the Thamarrurr Rangers. May be deployed within 24 hours (tides permitting).

Note: Refer to Section 3 for deployment of vessels.

5.8 Personnel Resource Requirements

The monitoring team would initially consist of:

- 1 x OSRL or Thamarrurr Ranger personnel to operate the OSRL fluorometry unit;
- 1 x OSRL or Thamarrurr Ranger personnel to operate other water quality sampling equipment; and
- 1 x vessel and crew for towing the fluorometry unit.

And / or

- 1 x AUV engineer to operate the AUV and support data integration into a response (the engineer would be sourced from the AUV provider); and
- 1 x vessel and crew for AUV deployment.

Additional resources should be mobilised (refer to Section 1.6) depending on the scale of the response required.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 63 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Supplementary resources may be utilised from SMP6, depending on the response requirements:

- 1 x Thamarrurr Ranger personnel or trained panel consultant or trained Eni personnel to operate the YSI EXO2S sonde;
- 1 x vessel and crew.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 64 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

6 OMP3 – SHORELINE ASSESSMENT SURVEYS

6.1 Activation of this Plan

Petroleum facility release	Vessel spill
<p>The IMT Leader will activate this plan if OSTM and/or surveillance indicate that Australian shorelines (e.g. reefs, coastlines) will be impacted by the hydrocarbon spill.</p> <p>Analysis of data from hydrocarbon spill modelling, monitoring, evaluation and/or surveillance predicts an exposure of hydrocarbons to shoreline habitat.</p>	<p>The IMT Leader will activate this plan if requested by AMSA (the Control Agency) in response to a Level 2 or Level 3 spill (as defined in the relevant OPEP).</p>

6.2 Monitoring Rationale and Objectives

Understanding the extent and nature of shoreline predicted to be, or actually contacted by a hydrocarbon spill, is critical to developing an effective spill response. The collection of data on the shoreline condition should be undertaken in a rapid and systematic way, taking account of spill conditions and hydrocarbon type.

The scope of OMP3 is to provide a rapid assessment of shoreline areas to determine the scale of hydrocarbon contamination and to inform treatment/clean-up response options, constraints or limitations. Geographical and spatial results of the shoreline and/or oiling conditions will be used by the IMT for response planning. Information obtained in OMP3 may also inform long-term scientific monitoring of shoreline habitats under SMP2 and SMP5.

6.2.1 Objectives

The objectives of this OMP are to:

- Undertake a preliminary assessment of the shoreline and coastal habitats to assist in making decisions on appropriate management and response actions and inform scientific monitoring;
- Provide a high-level determination of potential effects on shoreline communities in order to inform clean up, deflection or containment operations; and
- Identify post-spill physical characteristics of the shoreline in terms of access constraints and substrate.

The priority for gathering rapid shoreline data is for enabling the operational response. Consideration should be given to scientific data needs but not at the expense of the operational requirement for rapid access to data to inform the planning of an appropriate response.

6.3 Resources available

See Table 6.1 for available resources. Contracts are summarised in Section 1.6.

The IMT Leader has authorisation to request the mobilisation of OSRL, AMSA or AMOSC resources if required or requested by the Control Agency.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 65 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Table 6.1 Resources available for OMP3

Resource	Provider	Timeframes
Shoreline assessment team Shoreline surveyors	AMOSC National Plan resources through AMSA OSRL	Onsite within 5 days, or 24 hours prior to shoreline contact (if prolonged time to shoreline contact).
Unmanned aerial vehicle (UAV)	Various UAV providers via OSRL	Best endeavours
Vessels	TOLL (Contract: 5000024047)	Visual observations from chartered vessels occur within 72 hours of mobilisation.
	Thamarrurr Rangers	Single vessel, typically within 24 hours of mobilisation (tides permitting)
Aircraft	Offshore Services Australia (Contract 500009738) and PHI (Contract No. 5000021388)	Visual observation – from aircraft/ helicopter within 24 hours of mobilisation.

6.3.1 Shoreline Assessment Teams

Shoreline Assessment Teams will be deployed initially with the specialist skills to make an assessment of the actual and potential impact to the shoreline sensitivities and the resources that are required to implement a clean-up operation.

Shoreline assessment team onsite within 5 days, or 24 hours prior to shoreline contact (if prolonged time to shoreline contact). Initial assessment of shoreline areas predicted for impact would take initially 1-2 days post spill.

6.4 Termination of this Plan

This plan can be terminated by the Control Agency when:

- It can be demonstrated that no further environmental improvement outcomes can be achieved through continued implementation of this OMP;
- Physical response options are no longer being considered and/or implemented;
- It is determined that there is no risk of shoreline impacts from the spill;
- Monitoring objectives have been met; and
- Agreement has been reached with the Jurisdictional Authority relevant to the spill to terminate the response.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 66 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

6.5 Survey Methodology

The shoreline assessment is intended to document and quantify hydrocarbon spill extent at the shoreline to determine condition and to assess potential impact. This information will be used by the IMT to determine the most appropriate response. Execution of sampling and communication of results are required quickly, with initial information typically necessary for approval to implement response activities by regulatory agencies.

Following a hydrocarbon spill, a judgment must be made about whether monitoring is “necessary”, and whether the scope of the monitoring is “reasonable”, to reach appropriate spill response decisions in an appropriate time frame, and with an acceptable level of accuracy. This OMP outlines a range of methods to allow flexibility for planning a monitoring program that will account for individual spill conditions, the nature of the hydrocarbon released, and the emergency response implemented.

The approach outlined includes elements of published guidelines for a Shoreline Clean-up Assessment Technique termed SCAT (e.g. NOAA 2000, Maritime and Coastguard Agency 2007) to collect data on shoreline oiling conditions and support decision-making for shoreline cleanup. The SCAT process continues past the initial assessment to verify clean-up effectiveness and conduct final evaluations.

Detailed methods have been divided into the following components:

- Pre-survey Planning;
- Field Survey;
- Monitoring Design; and
- Reporting.

Table 6.2 identifies the processes, rationale and monitoring methods that will be applied to pre-survey planning and field surveys in OMP3.

Table 6.2: Objectives, rationale and monitoring methods that will be applied to pre-survey planning and field surveys in OMP3. Guideline refers to those listed in AMSA (2016)

Primary Objective	Rationale	Secondary Objectives	Monitoring Method
Shoreline Assessment	Geographical distribution influences monitoring design	Collect qualitative information on the presence/absence of environmental receptors at affected shorelines. Verify aerial surveys and existing data.	Video/photographic records
			Determine sector segment boundaries
			Characterise substrate
			Determine beach profile
			Determine surface oil
			Determine subsurface oil
			Field detection of petroleum hydrocarbons

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 67 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

6.5.1 Pre-survey Planning

A rapid review of the extent and condition of habitat types will be conducted on impacted and at risk of being impacted shorelines as determined by the monitoring of hydrocarbon distribution (OMP1) and the fate and effects of hydrocarbons (OMP2). The shorelines will be assessed with regards to their sensitivity to impacts from the hydrocarbon spill and accessibility for clean-up operations. Pre-survey planning includes:

- Identification of shoreline segments;
- Determination of the survey requirements; and
- Preparation for field survey.

A guideline for designing a monitoring program is provided (see AMSA, 2016). This guideline forms the basis of the following pre-survey planning considerations.

Identification of Shoreline Segments

A guideline for selecting shoreline segments is provided (see AMSA, 2016). Shoreline segments will be defined using the following considerations:

- Likelihood of hydrocarbon contact on shorelines as determined in OMP1;
- Homogeneity of habitats, physical features and sediment type to define shoreline segments and assign location identifier;
- Determine segment length considering resolution needs to detail the distribution of hydrocarbon. As a guide, segments should be in the range of 0.2–2 km in length; and
- Practical aspects that can be used by the IMT for deployment of response (i.e. access and staging locations).

Determination of Survey Requirements

The scale of the spill will determine the level of effort required for the shoreline assessment study. Planning of the survey method should take into account the following questions to specify if the proposed survey is “reasonable” and “appropriate” in scope, design and subsequent cost:

- Are results of significant value in the design, execution or assessment of response actions? and
- Is the scope of the programme, and speed of obtaining results, the minimum necessary to fulfil the stated objectives?

To execute the OMP, decisions are required by the IMT for each of the four monitoring components which include:

- Ground Surveys: What physical, biological and chemical variables do we need to consider in the shoreline clean-up? At what scale will the information be collected:
 - Broad-scale: Information required over multiple segments which would include combined aerial and/or remote sensing surveys with ground surveys.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 68 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

- Medium-scale: A small number of segments required for sampling using broad scale ground survey methods.
- Fine-scale: Data required from targeted segments.
- Develop clean-up guidelines: What is the required communication timeframe? What clean-up methods are inappropriate and can be removed from consideration before monitoring?

Preparation for Field Survey

The IMT will need to plan for shoreline assessments prior to mobilising the field team. A typical field plan may incorporate the following considerations:

- Identify and acquire shoreline assessment survey equipment, create checklist before mobilising to field;
- Identify requirement for aircraft, vessels, or special vehicles for remote locations;
- Development of the types of communications needed (e.g. radios, cellular phones) between field team and IMT;
- For each shoreline type, identify clean-up methods that will not be suitable for the habitat. This will limit the field evaluation to only those methods which may be approved; and
- Identify other OMPs which may operate simultaneously with the rapid shoreline assessment study.

6.5.2 Field Survey

Aerial Surveillance

A guideline for undertaking aerial surveillance of shorelines is provided (see AMSA, 2016). Aerial surveillance provides a reliable and rapid method for defining the overall extent of a spill area, and identifying oiled shorelines and those at threat from the spill. A guideline for identifying extent and distribution of oiled shorelines is provided (see AMSA, 2016). Photos, video, mapping and verbal feedback all provide basic information that can be used to define information needs and response priorities. Helicopters can be useful in combining aerial surveillance with ground surveys.

Ground Surveys

Ground surveys allow more detailed observations of shoreline conditions including the physical structure, ecological character, and human use of shorelines. This monitoring approach can provide comprehensive detail on the resources and activities likely to be affected by a spill, the potential extent of oiling and logistical considerations for different response methods.

Rapid shoreline survey methods will be agreed by the IMT to ensure the priorities relating to the spill response activities are the primary objective of the ground survey. Ground surveys for operational monitoring will target potential impact areas.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 69 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Physical Monitoring

Physical monitoring will determine how oil will behave over time, how the shoreline can most effectively be cleaned and the likelihood that it can be damaged by oil and clean-up activities. The physical character of the shoreline segment will be described in terms of:

- Verification of the extent of shoreline habitat and segment boundaries;
- Surface and sub-surface oil observations (see AMSA 2016);
- Substrate type (see AMSA 2016);
- Form: geomorphological type, dimensions, profile or gradient (see AMSA 2016);
- Energy: winds, waves (see AMSA 2016); and
- Provide photographic evidence and observation of access restrictions.

6.5.3 Reporting

The Environment Advisor (or delegate) will be responsible for the approval and dissemination of the below reports:

- Daily rapid shoreline assessment reports of visual shoreline observations (substrate, biological, hydrocarbon distribution) undertaken and locations visited during the survey. Report may also include changes / recommendations to existing surveying that should be considered;
- Laboratory reports of shoreline hydrocarbon chemical composition and physical properties; and
- Final report for OMP3 summarizing coastal shoreline monitoring, within 2 months of OMP termination.

Shoreline assessment should be entered into established forms and communicated to the shoreline assessment coordinator on a daily basis. Communications will include recommended clean-up methods, with consideration of NEBA to inform response strategies (Efroymsen et al. 2003; IPIECA 2000). Shoreline clean-up methods must:

- specify generic and site-specific constraints for clean-up activities;
- determine the need for follow-up surveys if sensitive resource values are present;
- establish clean-up priorities for shoreline resources; and
- identify safety concerns for clean-up operations.

A final report for OMP3 will be prepared post the rapid shoreline assessment. It is essential survey reports include detailed information on the methods used and the level of search effort adopted. This includes who was involved, what work was done, where the work took place, when the survey occurred and how the survey was carried out. The final report should follow the standard aims, methods, results and discussion format common to all scientific research.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 70 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

6.6 Data and Information Requirements

Information on the hydrocarbon distribution (OMP1 and OMP2) will be essential for development of an appropriate assessment design and to define the overall scope of this OMP. In addition, the following existing data and information will be reviewed as part of OMP3:

- Mapping of sensitive resources and key receptors;
- Review available previous shoreline survey data;
- review ongoing monitoring data of shorelines; and
- Knowledge of current survey designs implemented for other OMP activities, and if available any proposed designs for SMP activities.

Key data related to the above categories can initially be acquired from the Australian Ocean Data Network (AODN), which is a publicly funded data repository.

6.7 Field Equipment

Typical monitoring equipment:

- Tide tables;
- Clipboards and data sheets;
- Radio;
- Compass;
- Ruler;
- Tape measure;
- Flags and stakes (to mark the location of buried oil);
- Camera and video equipment; and
- GPS.

6.8 Logistics

Implementation of this OMP will require a field deployment vessel or aircraft. The vessel or aircraft specifications should allow for covering the required sampling area and safe access to water for sampling. The vessel that would be used is expected to be no larger than the project vessel used for the Petrel-3 and Petrel- activities.

A field vessel or aircraft will be deployed within 72 hours from Darwin. Thamarrurr Rangers (if mobilised) have access to their own vessel locally and may be deployed within 24 hours (tides permitting).

Shoreline assessment teams will be deployed from Perth and Darwin (AMOSC) and Singapore (OSRL).

Note: Refer to Section 3 for deployment of vessels.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 71 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

6.9 Personnel Resource Requirements

Stochastic modelling produced for the Petrel-3 and Petrel-4 Monitoring and Decommissioning activities (RPS 2024) predicted no shoreline accumulation of hydrocarbons at any threshold (see section 1.2). Therefore, OMP3 is not expected to be applicable for this petroleum activity.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 72 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

7 SMP1 – WILDLIFE IMPACT MONITORING AND SAMPLING

7.1 Activation of this Plan

Petroleum facility release	Vessel spill
<p>The IMT Leader will activate this plan in response to a Level 2 or Level 3 spill (as defined in the relevant OPEP) if:</p> <ul style="list-style-type: none"> Impacts to wildlife are observed in the Oiled Wildlife Response or during the implementation of OMP1, OMP2 or OMP3; Modelling and/or analysis of data from monitoring, evaluation, and surveillance predicts, or has reported, an exposure of hydrocarbons to known sensitive fauna habitat; and/or Other monitoring has identified contact or an impact to reptiles (dead, oiled, or injured reptiles) within area affected by hydrocarbons. 	<p>The IMT Leader will activate this plan if requested by AMSA (Control Agency) in response to a Level 2 or Level 3 spill (as defined in the relevant OPEP) if impacts to wildlife are observed in the Oiled Wildlife Response or during the implementation of OMP1, OMP2 or OMP3</p>

7.2 Monitoring Rationale

During the operational phase of the response, data would be collected as part of the Oiled Wildlife Response (Section 8.3 of the Petrel-3 and Petrel-4 Monitoring and Decommissioning OPEP). Following the cessation of the oiled wildlife response this program would be mobilised to assess and quantify impacts and to provide ongoing support should oiled wildlife be observed that were not detected as part of the Oiled Wildlife Response.

In the event of a hydrocarbon spill a number of OMPs will be initiated. Monitoring of wildlife will be continued throughout the response activities, including opportunistic observations from aircraft, vessels and the shoreline during the implementation of OMP1, OMP2 and OMP3. This data would be used when assessing the impact to wildlife.

Note: where Conservation Advice and/or Recovery Plans exist for EPBC protected marine fauna, the monitoring will include consideration of any specific sampling and/or values that require monitoring.

7.2.1 Resources at Risk

The key sensitive receptors that may be affected from an accidental oil spill including that will be assessed under SMP1 are:

- Marine mammals;
- Marine reptiles;
- Fish and sharks; and
- Avifauna.

7.2.2 Objectives

The objectives of this SMP are to:

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 73 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

- Undertake wildlife impact monitoring and sampling to determine the cause of death for wildlife carcasses (i.e. tissue analysis) following the cessation of the oiled wildlife response;
- Determine the potential impact to wildlife populations; and
- Determine the impact on Conservation Advice and/or Recovery Plans for EPBC protected marine fauna

7.3 Resources Available

See Table 7.1 for available resources. Contracts are summarised in Section 1.6.

Table 7.1 Resources available for OMP1

Resources	Provider	Timeframes
Wildlife monitoring team (2 x MFOs)	Environmental Panel Contracts and ability to contract third party specialists as detailed in Table 1.9	Contracting timeframe as per Section 1.6.2
Vessels	TOLL (Contract: 5000024047)	Visual observations from chartered vessels occur within 72 hours of mobilisation.
Aircraft	Offshore Services Australia (Contract: 500009738) PHI (Contract: 5000021388)	Visual observation – from aircraft/ helicopter within 24 hours of mobilisation.

During the operational response phase impacts to wildlife would be recorded as part of the Oiled Wildlife Response. Following the cessation of this response SMP1 would be mobilised to determine whether any wildlife deaths may be attributable to the spill through tissue analysis.

As this response would be mobilised following the operational phase of the response, sufficient time would be available to contract the require resources for this program, which may include:

- Marine megafauna observers;
- Marine avifauna specialists;
- Vets for the collection of tissue samples following the death of wildlife;
- Aircraft to complete marine megafauna and avifauna surveys; and
- Laboratory to complete tissue analysis

Eni also maintains an Environmental and Social Impact Consultancy Services Panel. The panel includes Marine Scientists and Consultants with the ability to assess the data from the operational and post response phase and assess the impacts to wildlife. Eni Headquarters also may provide specialists to assist.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 74 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

7.4 Termination of this Plan

This plan can be terminated by the Control Agency when the following are met:

- Measures have been taken to assess the effects or impact of the spill on marine wildlife;
- Restoration of key biological processes (e.g. abundance, distribution, breeding) necessary to ensure post-impact recovery is demonstrated and/or can be predicted;
- Spill impacts on marine wildlife are no longer detectable;
- Consultation with relevant stakeholders and Jurisdictional Authorities has determined that no further monitoring is required. For example, consultation with the DNP for termination of monitoring within the JBG AMP; and
- Monitoring objectives have been met.

7.5 Survey Methodology

Vessel and Aerial reconnaissance surveys may be used to record and collate observations of any marine mammals within the area of interest using reconnaissance aerial or boat based surveys. Rapid and systematic identification is required using standardised survey protocols. Given the low precision of data/knowledge on the distribution and abundances of most marine fauna in the Joseph Bonaparte Gulf area, quantification of abundance is unlikely. Qualitative assessment, and assessment of numbers, presence and any impacts to individuals, where observed, is however possible. Methods are principally designed to collect information on presence/absence; mortality and the status of those individuals encountered (i.e. behaviour, oiling etc.).

Methods have been divided into the following components:

- Pre-survey planning (see Section 7.5.1); and
- Field survey assessment (see Section 7.5.2).

It is important to note that the priority of resources and receptors and the sites themselves will change under different spill or weather conditions, the seasonal presence of key species, or the life stage of the species present. It is likely that a judgment will need to be made at the time of the survey about the relative value of different sites and sampling design.

A degree of flexibility is therefore required in the implementation of the SMP. Details of methods provided below outline a number of potential approaches to the collection of the necessary information. The actual methods to be used should be selected at the time of the survey.

7.5.1 Pre-survey Planning

Given the impracticalities of monitoring all potential receptors under the marine megafauna grouping, the use of indicator species will be used to provide a method to track the potential impact.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 75 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Depending on location of the spill and its predicted extent, potential indicator species for assessing impact to marine mammals have been identified. The selection of indicator species has been based on:

- Currently available information/data on abundance/distribution/migration patterns within the region;
- ability to observe/detect and correctly identify the species;
- Likelihood of exposure to hydrocarbons;
- Sensitivity to hydrocarbon spills; and
- Regulatory protection status (i.e., EPBC listed species).

Based on these considerations, the recommended indicator species includes:

- Flatback turtles;
- Olive ridley turtles;
- Irrawaddy dolphin;
- Snubfin dolphin;
- Indo-Pacific humpback dolphin; and
- Avifauna.

7.5.2 Field Survey Assessment

Aircraft can survey large areas and inaccessible areas in a short space of time. Aerial surveys also reduce the risk of double counting that can potentially occur from boat-based surveys. This platform works well for larger marine mammals and where waters have good light penetration and visibility. Aerial survey methods however do not provide robust counts for inshore dolphin populations where shallow waters are turbid. Visual assessments using this approach will include the potential for under-reporting. In such instances where the monitoring location includes shallow coastal waters, vessel based surveys are likely to be more suitable (taking into account safety considerations). Consideration of the environmental conditions at the time of survey will influence what survey platform is most appropriate.

Aerial Survey

Aerial surveillance for marine fauna should ideally be undertaken weekly. The survey will only detect visible animals without confidence of estimates of abundance. Visual and photographic/video data should be collected and information on sea state and flight path as outlined below. Ideally the following should apply if possible:

- Record information on sea state (using Beaufort Sea state scale); cloud cover (in octaves); glare (strength and area affected) and overall sighting conditions (good; moderate; poor) at the beginning of each survey and when conditions change;
- Line-transect, extending 400m either side of the flight path, for a flight time of approximately 10 minutes are completed with observers recording numbers and identification to the lowest taxonomic level possible (see AMSA 2016);

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 76 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

- Flight paths should be confirmed prior to each flight, but strip transects should be based on a grid or ladder approach to capture both the area affected by the slick, and the unaffected area immediately around the slick;
- All sightings to be marked with location coordinates (GPS);
- Data to be collected in standardised observation logbook records. For each cetacean sighting, data collated should include: location; species; group size; group composition (adults and calves); behaviour (directional swimming; non-directional swimming; feeding; resting), cue (underwater; body at surface; splash; blow); swimming direction and reaction to the survey craft;
- Video (high definition) and photographic (still image) data is collected to provide a permanent record (if possible); and
- 500ft is the preferred flight height for identification purposes.

Vessel Surveys

A vessel-based survey for presence of marine mammals is likely to be required if the slick has contacted nearshore environments with high turbidity. Gathering observational data on any marine mammals in close proximity to the surface slicks and documenting any unusual behaviour or ill health will be undertaken in addition to details on species, location etc.

Standardised survey methods can however still be applied by a trained observer and include the following:

- Observer should be positioned at the highest accessible point;
- At the beginning and end of each observation period record time; ship's location, course and speed. Record information on sea state (using Beaufort Sea state scale); cloud cover (in octaves); glare (strength and area affected) and overall sighting conditions (good; moderate; poor) at the beginning of each survey and when conditions change; and
- Collection of effort data each 30 minutes, or more frequently if there are marked changes in ship course or speed, or sighting conditions change.

An example data record sheet is shown in Table 7.2. This provides an example of the type of information that should be recorded during the survey.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 77 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Table 7.2 Example marine fauna data record sheet

Resource	Type/Species	Number	Location	Behaviour/Comment
Turtles	Species Age/size	Adult _____ Juvenile _____	Lat _____ Long _____	Nesting activity. Proximity of oil to nests. (surface and subsurface). Observed oiling of turtles. Observed behaviour/fitness of turtles if present. Carcases.
Dolphins	Age/size	Adult _____ Juvenile _____ Calf _____	Lat _____ Long _____	Proximity of oil. Observed oiling of dolphins. Observed behaviour/fitness. Carcases.
Sea snakes	Species Size		Lat _____ Long _____	Breeding or other activity. Observed oiling of snakes. Observed behaviour/fitness of snakes. Carcases.
Birds	Species Age/size	Nesting Roosting	Lat _____ Long _____	Proximity to oil to nests and roosting areas. Location of roosting/ nesting activity Observed oiling. Observed behaviour/fitness of birds. Presence of oil on eggs (if present). Carcases. Hatching or fledging rates.
Other Details for each Observation Location				
Ambient Conditions at Each Location	Date:	Photographic/ Video Record	Date and Time of Each:	
	Time:		Video/Photo Clip Number:	
	Weather Conditions:		Brief Description:	
	Visibility:		GPS Link:	

7.5.3 Live Stranding and Carcass Recording

Any live strandings or carcass recordings within the area affected by the spill should be recorded as follows. Trained professionals will need to be involved in the handling of any marine mammal strandings encountered. In Western Australia, Wildcare (08 9474 9055) is the lead stranding network organisation. In Northern Territory, Marine Wildwatch (1800 453 941) is the lead stranding network organisation.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 78 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

During the operational phase, recording of strandings information will be required. Where carcasses are observed physical details (species, length, sex, condition, etc.) will be documented and photographs taken.

It may be appropriate to collect tissue samples which will be analysed. The state of decomposition of any carcasses will need to be evaluated to determine the viability of the collection of samples for specific analysis, with some analysis unlikely on severely decomposed carcasses.

Standardised protocols are available for carcass handling with the following to be adopted:

- DoEE 2006, *Standardised protocols for the collection of biological samples from stranded cetaceans*, Department of Environmental and Heritage. View at <https://www.environment.gov.au/resource/standardised-protocols-collection-biological-samples-stranded-cetacean>;
- Eros C, Marsh H, Bonde R, O’Shea T, Beck C, Recchia C, Dobbs K, Turner M, Lemm S, Pears R and Bowater R, 2007, *Procedures for the Salvage and Necropsy of the Dugong (Dugong dugon)*. Second Edition. Great Barrier Reef Marine Park Authority. View at <http://elibrary.gbrmpa.gov.au/jspui/bitstream/11017/403/1/Procedures-for-the-salvage-and-necropsy-of-the-Dugong-Dugong-Dugon.pdf>; and
- Flint M, Patterson-Kane JC, Mills PC, Limpus CJ, 2009, *A veterinarian’s guide for sea turtle post mortem examination and histological investigation*. View at <https://veterinary-science.uq.edu.au/filething/get/4226/pm-guide-msf.pdf>.

In most instances the cause of death will not be determined until tissue is analysed.

Trained professionals will need to be involved in handling any strandings encountered. Where carcasses are observed, physical details (species, length, sex, condition, etc.) will be documented and photographs taken. There will also be a need to collect basic biological information and where appropriate tissue samples for laboratory analysis. Where appropriate, a necropsy should be undertaken by a pathologist to determine cause of death. Careful and consistent documentation of strandings is needed and clinical pathology is required to determine whether the cause of the mortality can be attributed to the oil spill event.

Table 7.3: Wildlife data capture for every individual captured

Date and time of capture:		
Location of capture:		
Species:		
Degree of oiling: %	Cover of oil:	Oil distribution on body:
Condition of animal:		
Any field treatments:		

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 79 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

7.5.4 Laboratory

Carcasses of oil-affected wildlife should be retained and tested to determine their cause of death, including tissue sampling and/or external examination. The samples will be analysed for an agreed set of parameters which may include determining the concentrations of:

- Polynuclear aromatic hydrocarbons (PAH) and the standard EPA list of 16 priority pollutants via normal phase silica chromatography and gas chromatography mass spectrometry (GCMS);
- Saturated hydrocarbons in the C10 to C36 range via by flame ionisation gas chromatography (GC); and
- Volatile hydrocarbons via purge and trap into a GCMS.

As well as reporting on tissue levels of hydrocarbons, other diagnostic chemical characteristics relevant to the spilled oil (such as various ratios) will be screened to confirm contaminant source.

7.5.5 Reporting

The Environment Advisor (or delegate) will be responsible for the approval and dissemination of the below reports:

- Wildlife Data Report summarising each field survey – within 4 weeks of completion of each field survey; and
- Wildlife Impact Assessment Report, following termination of the SMP.

7.6 Data and Information Requirements

The information in Table 7.4 will be used to assist in collecting data for SMP1.

Table 7.4: Data and information requirements for SMP1

Information	Details
Standard Forms for Field Survey	See Section 7.5.
Sensitive Resources and Receptors	i.e., Petrel-3 and Petrel-4 EP existing environment, etc.
OMP1, OMP2 and OM3	Observations and findings.

7.7 Field Equipment

The following list is not exhaustive, but includes common items that may be used:

- Survey platform;
- Marine vessels;
- Hand-held video camera;
- Digital camera (with GPS where possible);
- GPS;

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 80 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

- Binoculars;
- Nautical charts; and
- Logbook/observation sheets (see Section 7.5).

7.8 Logistics

Implementation of this SMP may require aircraft or vessels. The vessel specifications should allow for storage of field equipment and samples.

A field vessel will be deployed within 72 hours from Darwin. Refer to Section 3 for deployment of vessels. Thamarrurr Rangers (if mobilised) have access to their own vessel locally and may be deployed within 24 hours (tides permitting).

7.9 Personnel Resource Requirements

See Table 1.6 for the capability / personnel resourcing requirements for this program.

Table 7.5 Resources available for SMP1

Personnel	Duration	Required skills
2 x Marine Fauna Observers (MFOs)	Minimum one month	Marine mammal expert knowledge and field skills to identify and quantify abundance (essential). Experience in marine mammal surveys from aerial surveys (desirable).
1 x vet	As required	Veterinary and pathology expertise on call for diagnosis of cause of death with experience in record keeping (chain-of-command procedures) and advising on diagnosis of death.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 81 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

8 SMP2 – SHORELINE ECOLOGICAL ASSESSMENT AERIAL SURVEYS

8.1 Activation of this Plan

Petroleum facility release	Vessel spill
<p>The IMT Leader will activate this plan if:</p> <ul style="list-style-type: none"> OMP1 and/or OMP3 indicate shorelines have been impacted by hydrocarbons; and/or Spill trajectory modelling, surveillance or monitoring predicts or confirms exposure of coastal or intertidal habitats or communities to hydrocarbons. 	<p>The IMT Leader will activate this plan if requested by AMSA (the Control Agency), if OMP1 and/or OMP3 indicate shorelines have been impacted by hydrocarbons.</p>

8.2 Monitoring Rationale

SMP 2 helps to provide qualitative information on the presence/absence of species along the potentially affected shorelines. This study considers the seasonality of some species and habitats present on the shorelines of the EMBA.

The study would be used to inform the design of the shoreline ecological surveys (SMP5) which aim to quantify any potential impacts. Data from the aerial surveys may also be used when defining impact and reference locations.

8.2.1 Objectives

The objectives of this SMP are to:

- Identify the presence and extent of environmental receptors pre-impact, including any existing damage;
- Understand the spatial extent of the impact from the hydrocarbon spill on the environmental receptors; and
- Provide data to identify suitable impact and reference sites.

8.3 Resources Available

See Table 8.1 for available resources. Contracts are summarised in Section 1.6.

Data from OMP1 may be used to determine areas that are likely to have been impacted and data collected (aerial observation imagery overlapping shorelines, satellite imagery overlapping shorelines) may be used to support the targeted aerial surveys completed as part of the SMP2 program.

This monitoring program would be completed following shoreline contact from hydrocarbons and completion of the response. Eni maintains an Environmental and Social Impact Consultancy Services Panel. The panel includes Marine Scientists and Consultants with the ability to assess the data from the operational and post response phase for the presence/absence of receptors and to identify suitable impact and reference sites for the study design.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 82 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Table 8.1 Resources available for SMP2

Resources	Provider	Timeframes
Shoreline Ecological Assessment Team – fieldwork, reporting and GIS	Environmental Panel Contracts and ability to contract third party specialists as detailed in Table 1.9	N/A. Contracting timeframe as per Section 1.6.2
Unmanned Aerial Vehicle (UAV) drone and operators	OSRL Environmental Panel Contracts and ability to contract third party specialists as detailed in Table 1.9	Best endeavours
Aircraft	Offshore Services Australia (Contract 500009738) PHI	Visual observation – from aircraft/ helicopter within 24 hours of mobilisation.

8.4 Termination of this Plan

This plan can be terminated by the Control Agency when the following are met:

- It can be demonstrated that no further environmental improvement outcomes can be achieved through continued implementation of this SMP;
- Physical response options are no longer being considered and/or implemented;
- It is determined that there is no risk of shoreline impacts from the spill;
- Monitoring objectives have been met; and
- Agreement has been reached with the Jurisdictional Authority relevant to the spill to terminate the monitoring.

8.5 Survey Methodology

Georeferenced aerial imagery would be collected as part of OMP1. Data collected as part of OMP3 may also be used to supplement the data collected as part of OMP1.

Data would be interpreted in the IMT to determine whether the following is present/absent along the potentially affected shorelines:

- Turtle activity including nesting;
- Aggregations of shorebirds at potentially contacted shorelines; and
- Mangrove stands and the inferred health of any mangroves from the aerial imagery.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 83 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

8.5.1 Pre-survey Planning

It should be noted that SMP2 would not be used to assess impact, but that information collected as part of this program would be used to assist with planning more detailed quantitative assessments of shoreline impact as part of SMP5. Flight paths would be determined based on the shorelines that are potentially impacted/impacted by hydrocarbons.

8.5.2 Field Survey

Georeferenced imagery should be collected along the shorelines that may be impacted. The imagery should be of sufficient resolution to determine the presence/absence of hydrocarbons, shorebirds and evidence of turtle nesting activity (tracks).

The use of infra-red and false colour aerial surveillance techniques may be used to monitor environmental receptors, such as mangroves. Other remote sensing options may be explored depending on the environmental receptors impacted by the hydrocarbon spill. Records of aerial photography and video footage can be used to aid scientists in determining the impact to shorelines from the spill and the rate of recovery post spill clean-up.

Aerial observations will be made concurrent with vessel and/or ground-based surveillance where required (see SMP5). Observations will be recorded using a data record sheet, for example the information listed in Table 8.2 and georeferenced imagery will be sent to the IMT for further analysis.

Table 8.2: Example aerial data record sheet

Resource	Form	Location	Description
Seagrass	Species Intertidal Emergent Subtidal	Start and stop: Lat _____ Long _____	Length along shore Distance from shore to seaward edge Percentage cover Percentage dead/discooured (location if isolated)
Corals	Form Emergent Subtidal	Start and stop: Lat _____ Long _____	Length along shore Distance from shore to seaward edge Percentage cover Percentage dead/bleached (location if isolated)
Mangroves (wetlands)	Species Form	Start and stop: Lat _____ Long _____	Length along shore Distance from seaward edge to inner edge. Zonation if evident Percentage cover Percentage dead/discooured (location if isolated)
Other Details for each Observation Location			
Ambient Conditions at Each Location	Date:	Photographic/ Video Record	Date and Time of Each:
	Time:		Video/Photo Clip Number:
	Weather Conditions:		Brief Description:
	Visibility:		GPS Link:

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 84 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

8.5.3 Reporting

The Environment Advisor (or delegate) will be responsible for the approval and dissemination of the below reports:

- Data report of shoreline ecology (e.g., items in Table 8.2) following the completion of each field survey (may also include changes / recommendations to existing surveying that should be considered).

8.6 Data and Information Requirements

The following existing data and information will be reviewed as part of the SMP2 and used to assist in the assessment of the presence/absence of receptors.

Table 8.3: Data and information requirements for SMP2

Information	Details
Standard Forms for Field Survey	See Table 8.2.
Sensitive Resources and Receptors	i.e., Petrel-3 and Petrel-4 EP existing environment, etc.
OMP1	Georeferenced imagery

8.7 Field Equipment

The following list is not exhaustive, but includes common items that may be used:

- Tide tables;
- Clipboards and data sheets;
- Radio;
- Compass;
- Camera and video equipment; and
- GPS.

8.8 Logistics

Implementation of this SMP will require suitable aircraft and aerial observers as required under OMP1.

8.9 Personnel Resource Requirements

Stochastic modelling produced for the Petrel-3 and Petrel-4 Monitoring and Decommissioning activities (RPS 2024) predicted no shoreline accumulation of hydrocarbons at any threshold (see section 1.2). Therefore, SMP2 is not expected to be applicable for this petroleum activity.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 85 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

9 SMP3 –ASSESSMENT OF FISH FOR THE PRESENCE OF HYDROCARBONS

9.1 Activation of this Plan

Petroleum facility release	Vessel spill
<p>The IMT Leader will activate this plan if:</p> <ol style="list-style-type: none"> 1. It has been confirmed or it is suspected (e.g. through public reports) that significant levels of hydrocarbons have contaminated commercial or subsistence fishing areas; 2. Fishing vessels fish stocks, fishing equipment and/or by-catch have been exposed to hydrocarbons; 3. Advice has been provided to government to restrict, ban or close a fishery; and 4. Declarations of intent by commercial fisheries or government agencies to seek compensation for alleged or possible damage. 	<p>The IMT Leader will activate this plan if requested by AMSA (the Control Agency) in response to a Level 2 or Level 3 spill (as defined in the relevant OPEP).</p>

9.2 Monitoring Rationale

Areas of the EMBA are an important area for fish biodiversity. Key fish species of the are discussed in the Petrel-3 and Petrel-4 EP. This study focuses on the potential impacts to fish health.

9.2.1 Objective

The objective of this SMP is to monitor for any hydrocarbons in representative commercial and recreational fish species to assess impacts and recovery.

9.3 Resources Available

See Table 9.1 for available resources. Contracts are summarised in Section 1.6.

Personnel will use the recommended methods to collect, store and transport tissue and organ samples for analysis at NATA-accredited laboratories. Eni can commission Lab analysis through Petrolab. Eni has also identified alternative providers in Table 1.9.

Table 9.1: Resources available for SMP3

Resource	Provider	Timeframe
Fish assessment team and subject matter experts	Environmental Panel Contracts and ability to contract third party specialists as detailed in Table 1.9	N/A. Contracting timeframe as per Section 1.6.2
Laboratory analysis services	Petrolab	Typically 48 hours – 5 days (Petrolab access)

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 86 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Vessels	TOLL (Contract: 5000024047) – vessels	Vessels within 24 hours of mobilisation.
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Table 9.2: Laboratory services contractor contact details

Company	Contact Details	Address
Petrolab	+61 8 8364 1500 + 61 8 8364 0981	45 Woodforde Road, Magill South Australia 5072

9.4 Termination of this Plan

This plan can be terminated by the Control Agency when the following are met:

- Physiological and biochemical parameters in the studied fish species are comparable with fish sampled from reference sites unaffected by the spill;
- Contamination in the edible portion or in the stomach/intestinal contents of fish attributable to the spill is no longer detected;
- Monitoring objectives have been met; and
- Agreement has been reached with the relevant Jurisdictional Authorities to cease monitoring of fisheries.

9.5 Survey Methodology

9.5.1 Field Sampling

A range of species may be targeted, however the two most commercially important species in the JBG are:

- Barramundi (*Lates calcarifer*); and
- Threadfin salmon (*Eleutheronema tetradactylum*).

Both of these species generally occur in the estuaries of the Joseph Bonaparte Gulf (LDM 1994) and are targeted under the Kimberley Gillnet and Barramundi Fisheries.

Of the targeted species, twenty fish will be collected within the oil-impacted area and the same number of samples from the control area.

Fish will be collected using long-lines from within a vessel at both impacted and control sites. The number of sites within each area will be determined at the time of the spill in accordance with the scale and nature of the spill.

Upon capture all fish will be identified, observed for any outwardly visible signs of abnormality or physical stress, and measured. The sex and reproductive stage will also be recorded. Approximately 100g of muscle tissue will be taken per sample for hydrocarbon analysis. The remaining muscle tissue will be kept for later taste or olfactory testing analysis if required. Two gut samples per species from each site will be kept for hydrocarbon analysis.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 87 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Water samples will be collected at each site using a weighted 1L glass bottle which will be suspended 1m below the sea surface. Each sample will be collected from an area ahead of the vessel (i.e., not disturbed by the passage of the hull). Two 1L samples and one smaller 40 ml sample will be collected from each site. One 1L sample will be immediately frozen, while the other 1L and 40ml sample will be refrigerated.

9.5.2 Sampling Protocol

To avoid hydrocarbon contamination from other sources, fish samples will be collected using the following protocol:

- Fish for analysis will be placed on a clean oil-free surface for examination and dissection. These surfaces will be cleaned with methanol prior to fish contact;
- All instruments will be cleaned with detergent and water and then rinsed with methanol;
- Tissues for hydrocarbon analysis will be placed in glass jars with Teflon-lined lids. A replicate sample will be wrapped in methanol-treated aluminium foil, then placed in a zip lock plastic bag;
- The jars and plastic bags will be labelled with all relevant information including species, location, identification number and date;
- The sample number will be related to a record containing species name, size, type of tissue, handling details, capture location, capture depth and all observations of health, presence of visible oil, etc; and
- All samples will be immediately placed in a freezer and transported frozen. The shipping container will have a "chain of custody tag" attached. This ensures samples can be tracked to ensure validity until they reach the analytical lab.

9.5.3 Laboratory Chemical Analysis

Fish samples will be defrosted and then prepared in a mechanical blender. Hydrocarbons will be extracted with dichloromethane. Internal standards will be added to extracts to track recovery. Extracts will then have interfering lipids removed by gel permeation chromatography. Half of the extract will be further cleaned by normal phase silica chromatography and analysed by selected ion monitoring for PAH by GC/MS. Samples will be analysed for the standard EPA list of 16 priority pollutants. A high ratio of phenanthrene to pyrene in samples would indicate unburned oil content.

The other half of the extract will be cleaned by acidified silica gel chromatography (Muijs and Jonker 2009) and analysed for saturated hydrocarbons in the C10 to C36 range by flame ionization GC.

Volatile hydrocarbons (C6 to C9) will be analysed by purge and trap into a GC/MS. An aliquot of methanol will be added to a water filled Purge & Trap vial and analysed by Purge & Trap GC/MS. This method is suitable for the determination of BTEX and hydrocarbons in the TPH C6 to C9 range.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 88 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

The analysis will be done using GC/MS set to SIM/SCAN mode. All chromatograms will be checked for trace PAHs down to the detection limit i.e. the LOR is 0.01mg/kg which equates to approximately 0.003 mg/kg detection limit. The GC/MS will also set up to analyse selected oil markers (tetramethyl naphthalenes and dibenzothiophene, SIM mode) which are good indicators (if used).

Eni has a contract with Petrolab for laboratory services, including the above analysis. Unless otherwise advised, samples will be sent to Petrolab's laboratory for analysis.

9.5.4 Reporting

The Environment Advisor (or delegate) will be responsible for the approval and dissemination of the below reports:

- Data report to following the completion of each field survey (on-going trend analysis allowing for the tracking of impacts and recovery, identification/recommendations on any remediation works or active management (including changes to existing sampling or additional sampling required) that should be considered); and
- Laboratory analysis.

9.6 Data and Information Requirements

The information in Table 9.3 will be used to assist in collecting data for SMP3.

Table 9.3: Data and information requirements for SMP3

Information	Details
Sensitive Resources and Receptors	i.e., Petrel-3 and Petrel-4 EPs existing environment, etc.
Fisheries Data	Effort and catch rate data from fisheries, location and number of fishing vessels, etc.
OMP1 and OMP2	Results and findings.
Knowledge of current survey designs implemented for other SMP activities	-

9.7 Field Equipment

The following list is not exhaustive, but includes common items that may be used for sampling:

- Survey platform / marine vessels;
- Digital camera (with GPS where possible);
- GPS;
- Binoculars;
- Nautical charts;
- Fishing equipment (long-line rods, knives);
- Dissection kits, whirlpaks for fish samples;

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 89 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

- Freezer and refrigerator space; and
- Water quality testing equipment (1litre bottles, 40ml vials, niskin bottle).

Implementation of this SMP will require a field vessel. The vessel specifications should allow for storage of field equipment and samples. It is expected to be similar in size and no larger than those used typically for Petrel-3 and Petrel-4 activities.

Note: Refer to Section 3 for deployment of vessels.

9.8 Personnel Resource Requirements

The team for SMP3 may consist of the following personnel. The field team would require experience in the handling of samples for analysis of environmental impacts:

- 2 x Environmental Consultants for fieldwork;
- 1 x Environmental Consultant for reporting;
- 1 x laboratory for analysis; and
- 1 x subject matter expert selected from Table 1.9 or other suitable provider.

Specific skill sets required to complete the SMP:

- Experience in the catching of fish (local knowledge of their habitats); and
- Experience in the correct dissection of fishes for analysis, including correct storage and transfer of samples.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 90 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

10 SMP4 – FISHERIES ASSESSMENT

10.1 Activation of this Plan

Petroleum facility release	Vessel spill
<p>The IMT Leader will activate this plan if:</p> <ol style="list-style-type: none"> 1. It has been confirmed or it is suspected (e.g., through public reports) that significant levels of hydrocarbons have contaminated commercial or subsistence fishing areas; 2. Fishing vessels fish stocks, fishing equipment and/or by-catch have been exposed to hydrocarbons; 3. Advice has been provided to government to restrict, ban or close a fishery; and 4. Declarations of intent by commercial fisheries or government agencies to seek compensation for alleged or possible damage. 	<p>The IMT Leader will activate this plan if requested by AMSA (the Control Agency) in response to a Level 2 or Level 3 spill (as defined in the relevant OPEP).</p>

10.2 Monitoring Rationale

A hydrocarbon spill in the JBG has the potential to impact on commercial fisheries and other limited recreational fishery areas.

10.2.1 Objective

The objective of this SMP is to:

- Collect relevant data to assess the short-term and/or long-term effects on fish and fisheries in the JBG from the hydrocarbon spill;
- Understand the geographic extent of exposure of fish to hydrocarbons from the spill; and
- Assessing the impacts to fish health, including reproductive health associated with hydrocarbons from the spill.

10.3 Resources Available

See Table 10.1 for available resources. Contracts are summarised in Section 1.6.

Eni maintains blanket contracts with a panel of HSE consultants with the capabilities in designing and implementing fish surveys using both dedicated and opportunistic vessels, including working with recreational and commercial fishers.

Table 10.1 Resources available for SMP4

Resources	Provider	Timeframes
Fisheries Assessment Team and subject matter experts	Environmental Panel Contracts and ability to contract third party specialists as detailed in Table 1.9	N/A. Contracting timeframe as per Section 1.6.2

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 91 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Resources	Provider	Timeframes
Vessels	TOLL (Contract: 5000024047) – vessels	Vessels within 24 hours of mobilisation.
Laboratory analytical services	Petrolab	Typically 48 hours – 5 days
	Environmental Panel Contracts and ability to contract third party specialists as detailed in Table 1.9	N/A. Contracting timeframe as per Section 1.6.2

10.4 Termination of this Plan

This plan can be terminated by the Control Agency when the following are met:

- Evidence that catch rates, species composition, community abundance, distribution and age structure of commercial fisheries and their by-catches have returned to pre-spill levels;
- Agreement with relevant stakeholders (e.g., fishing organisations, Government authorities) that fish stocks are no longer impacted or damaged as a result of the spill;
- Monitoring objectives have been met; and
- Agreement has been reached with the relevant Jurisdictional Authorities to cease monitoring of fisheries.

10.5 Survey Methodology

The focus will be analysing the levels of biomarkers in the target species.

The study will collect commercial and subsistence fish and prawn species from impacted and non-impacted (i.e. control sites), in consultation with relevant stakeholders.

The target species will be determined prior to mobilisation based on the hydrocarbon spill characteristics. The samples collected from the control sites will be used to comparison purposes—i.e. the impacted specimens against the non-impacted specimens.

The following biomarkers will be measured in fish:

- Liver detoxification enzymes: The hydrocarbons absorbed by the fish are metabolised by the liver using detoxification enzymes. These are quantified in the liver.
- PAH Biliary Metabolites: Hydrocarbon compounds are directed to the bile for elimination out of the body. Biliary metabolites of petroleum compounds represent the most sensitive biomarker of exposure to crude oil, and can inform on the temporal and geographical extent of the exposure to very low levels.
- DNA Damage: Several contaminants, including petroleum compounds, can alter the integrity of the DNA molecule. This biomarker evaluates the damage done to the DNA molecules.

	eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 92 / 117
				Validity Status	Rev. No.	
				PR-OP	0	

- Serum sorbitol dehydrogenase (SDH): Serum SDH provides an understanding of the liver integrity and liver functions, which might be affected if exposure to hydrocarbons is high.
- Other physiological biomarkers such as condition factor, liver somatic index and gonado-somatic index will be determined along with total weight, length, condition, parasites, egg development, testes development, etc. All abnormalities, if any, will be photographed.

Biomarkers to be measured in prawns, include:

- DNA Damage: Several contaminants, including petroleum compounds, can alter the integrity of the DNA molecule. This biomarker evaluates the damage done to the DNA molecules.
- Lipid ratios: amphipods exposed to the water-accommodated fraction of hydrocarbons have altered lipid ratios (Olsen et al. 2007). These changes may affect the health of the exposed benthic invertebrates but also the benthic invertebrates may not as good a food item for higher trophic level organisms.
- Other physiological biomarkers such as parasites, total weight, length and condition will be determined. All abnormalities, if any, will be photographed.

Fecundity, time between molts, embryo development, hatching rates and larval survival may also be investigated to understand the impacts to prawns.

All reports of dead prawns, e.g., found washed up on beaches, will be investigated. Amphipods, filter-feeding bivalves and urchins are thought to be among the most sensitive organisms to oil contamination in subtidal communities. Thus, the abundance of amphipods has been found to be a good indicator of oil exposure and recovery in soft-bottom subtidal communities (Gomez Gesteria and Dauvin 2005).

Recovery phase monitoring will therefore include quantifying abundance in the environment or through measuring catch volumes.

10.5.1 Field Sampling

Prawns will be collected using trawl at both impacted and control sites. The number of sites within each area will be determined at the time of the spill in accordance to the scale and nature of the spill. The fishing industry will be consulted during planning and field sampling.

Trawling will be conducted in accordance with the *Marine sampling Field Manual for Benthic Sleds and Bottom Trawls* (Przeslawski, 2018). Sample collection and handling will be done in accordance with the Australian code for the care and use of animals for scientific purposes (NHMRC, 2013). The fish/prawns captured at each site will be kept alive in live tanks equipped with flow through, as biopsies need to be collected on freshly scarified animals. Each specimen will be initially measured for length (using a mm scale ruler) and for weight using an electronic spring balance. Each specimen will be examined for external abnormalities including lesions or damage.

Fish captured for biopsy collection (approximately 20 of each target species from each site) will be sacrificed by iki jimi (spike through the brain) and a vacuutainer and needle

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 93 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

were used to collect blood from the caudal vein. These blood samples will be allowed to coagulate at 4°C for up to 20 minutes and then centrifuged at 2400 x *g* for 10 mins and the serum supernatant divided into two samples: one of which is frozen at -20°C and the other placed in liquid nitrogen. The fish will be then dissected along the ventral line and inspected internally.

The following biopsies will be collected:

- Serum samples (see above);
- Bile will be collected from the gall bladder using a 1 ml syringe and frozen at - 20°C;
- The liver will be removed, weighed and subsamples frozen in liquid nitrogen for analysis;
- The gonads will be removed and weighed. Where available the gonads of 10 male and 10 female fish of each species from the impacted area and reference area were preserved in glutaraldehyde for histology; and
- Carcass (body less viscera) was weighed using the electronic spring balance.

Stomach and intestinal contents will also be collected from 10 of each species at each location where available.

10.5.2 Laboratory Analysis

Laboratory analysis will be undertaken by a NATA-approved Laboratory for the following analyses:

- Fish
 - liver detoxification enzymes (EROD activity)
 - biliary metabolites
 - SDH activity
 - oxidative DNA damage
 - gonad histology.
- Prawns
 - oxidative DNA damage; and
 - lipid ratios.

Biomarker analyses will be undertaken at government or academic laboratories with experience in the area. Statistical analyses of these results will then be undertaken to assess the differences (if any) between the impacted and control site species.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 94 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

10.5.3 Recovery monitoring

Recovery phase monitoring will include quantifying abundance in the environment or through measuring catch volumes. This will be undertaken by trawling, in consultation with and likely with assistance from the fishing industry. In addition, indices of community health and resilience may also be considered in monitoring recovery, such as the index of biological integrity and community structure analysis to quantify abundance, diversity and condition of different taxonomic groups in the area. Community structure analysis involves surveying the abundance of different organisms, recording the age, size class, sex and condition of organisms. It is recommended that this surveying be done to the level of species or taxa, to identify any changes in the community structure (e.g., disappearance of sensitive taxa and or increase in hydrocarbon-degrading bacteria and fungi).

10.5.4 Reporting

The Environment Advisor (or delegate) will be responsible for the approval and dissemination of the below reports:

- Data report to following the completion of each field survey (on-going trend analysis allowing for the tracking of impacts and recovery, identification/recommendations on any remediation works or active management (including changes to existing sampling or additional sampling required) that should be considered)
- Laboratory analysis
- Final Fisheries Impact Assessment Report, following termination of SMP.

10.6 Data and Information Requirements

The information in Table 10.2 will be used to assist in collecting data for SMP4.

Table 10.2: Data and information requirements for SMP3

Information	Details
Sensitive Resources and Receptors	i.e., Petrel-3 and Petrel-4 EP existing environment, etc.
Fisheries Data	Effort and catch rate data from fisheries, location and number of fishing vessels, etc.
OMP1 and OMP2	Results and findings.
Knowledge of current survey designs implemented for other SMP activities	-

10.7 Field Equipment

The following list is not exhaustive, but includes common items that may be used for sampling:

- Survey platform / marine vessels;
- Trawl with spare(s),
- Trawl box(es);

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 95 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

- Digital camera (with GPS where possible);
- GPS;
- Binoculars;
- Nautical charts;
- Dissection kits, whirlpaks for samples;
- 1L and 10L buckets with lids;
- Sample labels, pre-printed on waterproof paper; and
- Freezer and refrigerator space.

10.8 Logistics

Implementation of this SMP will require a field vessel. The vessel specifications should allow for storage of field equipment and samples. It is expected to be similar in size and no larger than the project vessel used for field management activities. Refer to Section 3 for deployment of vessels.

10.9 Personnel Resource Requirements

The team for SMP4 may consist of the following personnel:

- 2 x Environmental Consultants for fieldwork;
- 1 x Environmental Consultant for reporting;
- 1 x laboratory for analysis;
- 1 x subject matter expert selected from Table 1.9 or other suitable provider;
- Specific skill sets required to complete the SMP:
 - Experience in the catching of fish (local knowledge of their habitats);
 - Experience in the correct dissection of fishes for analysis, including correct storage and transfer of samples.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 96 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

11 SMP5 – SHORELINE ECOLOGICAL SURVEYS

11.1 Activation of this Plan

Petroleum facility release	Vessel spill
The IMT Leader will activate this plan if it has been observed or is predicted (e.g., through the SMP2 program) that shorelines will be impacted by the hydrocarbon spill and sensitive receptors are present at the affected shorelines.	The IMT Leader will activate this plan if requested by AMSA (the Control Agency) in response to a Level 2 or Level 3 spill (as defined in the relevant OPEP).

11.2 Monitoring Rationale

This study will aim to quantify impacts to receptors observed to be potentially impacted during SMP2.

11.2.1 Objectives

The objectives of this SMP are:

- Quantify the impacts to shorelines species;
- Quantifying, where possible, exposure of environmental receptors to the hydrocarbon; and
- Assessing the recovery of environmental receptors.

11.3 Resources Available

See Table 11.1 for available resources. Contracts are summarised in Section 1.6.

Eni maintains blanket contracts with a panel of HSE consultants that would be used to complete the surveys for SMP5.

Specifics and further details on the personnel resource requirements are detailed in Section 11.10.

For further information on equipment requirements refer to Section 11.8 Refer to Section 11.9 for logistic required for this SMP. Vessels are accessed as per Section 3.

Table 11.1 Resources available for SMP5

Resources	Provider	Timeframes
Shoreline Ecological Survey team and subject matter experts	Environmental Panel Contracts and ability to contract third party specialists as detailed in Table 1.9	N/A. Contracting timeframe as per Section 1.6.2
Traditional Owner support, indigenous knowledge	Thamarrurr Rangers	Best endeavours

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 97 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Resources	Provider	Timeframes
Vessels	TOLL (Contract: 5000024047) – vessels	Vessels within 24 hours of mobilisation.

11.4 Monitoring Initiation Criteria

It has been observed or is predicted (e.g. through the SMP2 program) that shorelines will be impacted by the hydrocarbon spill and sensitive receptors are present at the affected shorelines.

11.5 Monitoring Termination Criteria

This plan can be terminated by the Control Agency when the following are met:

- Monitoring objectives have been met;
- Biological monitoring demonstrates that the ecological components of the shoreline environment are returned to pre-spill state (as determined from baseline data and/or control sites); and
- Agreement has been reached with the relevant stakeholders and Jurisdictional Authorities to cease monitoring this receptor.

11.6 Survey Methodology

11.6.1 Mangrove Monitoring

A guideline for monitoring the potential impact on coastal flora are provided (see AMSA, 2016). Methods suggested include combining remote sensing and ground surveys using quadrats or transects. Sub-lethal effects such as foliage density, chlorosis (bleaching), canopy height can be detected using ground surveys. Much of this information can be collected without much additional effort and provides valuable baseline data of the health of the ecosystem and is useful for the scientific program design. Suitable coastal flora found within shoreline habitats of the ZPI that may be used as bio-indicators may include mangroves, and microalgae on tidal flats, and macroalgae species on intertidal flats and rocky shores.

Table 11.2: Example of coastal flora data parameters and methods (AMSA 2016)

Resource	Form	Comments
Number abundance of plants	% cover of the sediment	Ground and aerial survey (large areas only) (see SMP2).
	Numbers	May occur in days/weeks.
	Biomass: mass of plants per m ²	Intrusive. Detailed study based on sampling in affected and control sites.
Distribution of plants or damage	Tidal zone/elevation	Ground survey - using transects or beach gradient.
Distribution of oil on plant mat	% of plant area oiled	Ground survey – suitable for algae and seagrasses.
Distribution of oil on plant	Maximum and minimum height of oil	Ground survey – suitable for macrophytes such as mangroves.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 98 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Resource	Form	Comments
	% cover of whole plant	Ground survey – roots, leaves and trunk.
	% cover of foliage	
	Position on plant	
Mortality	Number or area of dead plants	Ground surveys - using quadrats or transects.
	Area or %loss	Aerial survey (see SMP2).
Other possible effects	Chlorosis	Ground surveys – leaves or fronds go yellow, lose colour.
	Black/curled leaves (dead)	Ground surveys – sometimes called 'burning'.
	Leaf/frond loss	Ground surveys – may occur within days, weeks or even months in the case of mangroves.
	Loss of plants	Ground surveys – may occur within days/weeks.
	Changes in level of fungal or insect damage	Ground surveys – may occur with weeks/months.

Epifauna Sampling

A guideline for monitoring the potential impact on invertebrate shoreline fauna are provided (Table 11.3). The suitable method suggested is ground surveys using quadrats or transects. Invertebrate fauna species found on the littoral fringe and upper eulittoral, the zone of highest impact, should be used as target indicators. Suitable indicator intertidal invertebrate epifauna for monitoring may include molluscs, barnacles and chitons on rocky shores, and burrowing crabs in tidal flats and mangrove and depositional shorelines.

Table 11.3: Example of invertebrate beach fauna data parameters and methods

Parameter	Comments
Number of organisms	% cover of the sediment This can be done as an estimate (similar to oil cover). Photo documentation.
	Number of individuals per m ² Use of quadrat frames. Count or photo-documentation to speed up field work.
Position of organisms	Record distance along a transect or height on rock.
Oil cover/impact on organisms	% of oil organisms Use of quadrates or transects.
	% of area oiled Suitable alternative to number of oiled/unoiled organisms.
Damage to 'sheet'. E.g. shellfish, barnacles, polychaetes	Indicated by presence of unattached individuals or holes in the sheet, particularly mussels and oysters. Damage to the sheet can result in additional future damage by wave action.
Mortality	Number/mass/area of dead organisms Data from impacted sites needs to be checked against control areas.

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 99 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Parameter		Comments
	Number/mass/area of live organisms	Seasonal mortalities occur with some species.

Chemical Monitoring

Chemical monitoring provides a greater level of accuracy for determining the presence and concentration of hydrocarbons. If seafloor communities are to be monitored it is advisable to simultaneously monitor water and sediment contaminant levels. In this way any relationships between contaminant levels and biological effects can be examined. Chemical fingerprinting of surface oils conducted in OMP2 form an important initial step for identifying the difference between natural and anthropogenic oil sources. Usually, operational monitoring will require information to be collected and processed rapidly with a low level of sampling and accuracy.

Water and Sediment Sampling

Sampling of water are described in OMP2. Chemical monitoring of water will include:

- In-situ tests conducted to validate of the presence hydrocarbons in water;
- In-situ methods for determining the concentration of oil in water (e.g. fluorometer readings, hydrocarbon sensors on water quality units, see OMP2 for more detail);
- Physico-chemical sampling of the water using multi-parameter water quality instruments (see OMP2 for more detail); and
- Obtaining a limited selection of water and sediment samples to be sent to the laboratory for chemical analysis (see OMP2 for methods for collection of water samples).

Biological chemical testing of indicator shoreline flora and fauna species may also be implemented if time permits.

Turtle Nesting Beaches and Avifauna

The shoreline monitoring of turtle nesting beaches and avifauna that may be potentially present during a hydrocarbon spill will include:

- Monitoring of damage to coastal birds including, number of individuals, type present, oil distribution on birds, activity of oil birds (see AMSA, 2016); and
- Monitoring of damage to coastal reptiles including, numbers of individuals, species present, oil distribution on organisms, mortality rates (see AMSA, 2016).

11.6.2 Reporting

The Environment Advisor (or delegate) will be responsible for the approval and dissemination of the below reports:

- Data report to following the completion of each field survey (including changes to existing sampling or additional sampling required) that should be considered;
- Baseline data report (if required);

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 100 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

- Laboratory analysis (water and sediment samples);
- Interim monitoring data / reports; and
- Final Monitoring Assessment Report, following termination of SMP.

11.7 Data and Information Requirements

This SMP will rely on the outputs from OMP1 and OMP3 on the extent of the oil spill from both the predictions of the oil spill distribution, oil spill surveillance and observational data from the field.

Table 11.4: Data and information requirements for SMP5

Information	Details
Standard Forms for Field Survey	See Table 11.2 and Table 11.3.
Sensitive Resources and Receptors	i.e. Petrel-3 and Petrel-4 EIS, EPs existing environment etc.
OMP3 and SMP2	Results and findings.
Knowledge of current survey designs implemented for other SMP activities	-

11.8 Field Equipment

The following list is not exhaustive, but includes common items that may be used:

- Survey platform / vessel to reach remote shoreline areas;
- Tide tables;
- Clipboards and data sheets;
- Radio;
- Compass;
- Ruler;
- Quadrant frames;
- Sampling bags;
- Sieves;
- Spade;
- Tape measure;
- Flags and stakes (to mark the location of buried oil);
- camera and video equipment; and
- GPS.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 101 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

11.9 Logistics

Implementation of this SMP will require a field vessel. The vessel specifications should allow for storage of field equipment and samples. It is expected to be similar in size and no larger than the project vessel used for field management activities.

Access to shoreline areas may require Indigenous Land Access Permits and permission from the relevant Traditional Owner and/or Traditional Owner participation.

Note: Refer to Section 3 for deployment of vessels.

11.10 Personnel Resource Requirements

Stochastic modelling produced for the Petrel-3 and Petrel-4 Monitoring and Decommissioning activities (RPS 2024) predicted no shoreline accumulation of hydrocarbons at any threshold (see section 1.2). Therefore, SMP5 is not expected to be applicable for this petroleum activity.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 102 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

12 SMP6 – HYDROCARBON FATE AND EFFECTS ASSESSMENT

12.1 Activation of this Plan

Petroleum facility release	Vessel spill
<p>The IMT Leader will activate this plan in response to a Level 2 or Level 3 spill, as defined in the relevant OPEP, or if OMP1, OMP2 or OMP3 indicates there are:</p> <ul style="list-style-type: none"> Spill modelling and/or monitoring has indicated that contact on a sensitive resource is possible and it is considered likely that ongoing (scientific) monitoring of impacts will be required, supported by scientifically rigorous water quality monitoring; and/or Water quality assessment (OMP) has identified hydrocarbon and/or dispersant concentrations exceed accepted guidelines and benchmarks. 	<p>The IMT Leader will activate this plan if requested by AMSA (the Control Agency) in response to a Level 2 or Level 3 spill (as defined in the relevant OPEP).</p>

12.2 Monitoring Rationale

This SMP describes the level and type of hydrocarbon of exposure to sensitive receptors at risk as a function of time. This allows a relationship between hydrocarbon exposure and other values to be derived as part of long-term monitoring of the effects of hydrocarbon exposure.

Monitoring requires consistent repeat-measures to determine trends over time. The current SMP is reliant on baseline data collection; either from:

- Existing regional studies or monitoring programs (refer to Table 1.5);
- Post-spill monitoring; or
- Pre-impact sampling (e.g. during the response, prior to impact).

The data collected should be directly comparable to data collected as part of OMP2 (Section 5). In particular, sampling and analysis methods should be consistent to ensure the post incident results are comparable.

12.2.1 Objective

Monitoring objectives are to:

- Understand the distribution and fate of hydrocarbons attributable to the spill through time on the surface, water column and sediments;
- Determine the physical properties of the hydrocarbon as it weathers on the sea, on shorelines and in marine sediments;
- Determine the chemical properties of the hydrocarbon as it weathers at sea, on shorelines and in marine sediments;
- Assess water and sediment quality against accepted guidelines; and

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 103 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

- Verify the source of identified hydrocarbons and attribute them to the spill, natural, pyrogenic or petrogenic sources.

12.3 Resources Available

See Table 5.1 for available resources. Contracts are summarised in Section 1.6.

Eni have the ability to mobilise the Thamarrurr Rangers as first responders for water quality sampling for this SMP. The Thamarrurr Rangers have two vessels and water quality sampling equipment box (refer to Table 1.8) and have been trained in water quality sampling and towing of a fluorometer equipment (full day training by AIMS in August 2023). Online training in the Eni YSI EXO2S sonde (a drop-down sampler) will occur prior to the Petrel activity commencement.

Additional personnel and equipment resources are available under the environmental panel arrangements or directly to Eni on a best endeavours basis (refer to Section 1.6)

Whilst the above is designated for this SMP, Eni have access to Turner C3 Fluorometer and an AUV with fluorometry sensor through OSRL (refer to Section 5), which are used for OMP2 in the first instance.

Table 12.1 Resources available for SMP6

Resource	Provider	Timeframe
Eni YSI EXO2S sonde (including Cyclops 7F - Refined Fuels attachment)	Eni	24 hours (Equipment located at the Eni YGP)
1 x Turner C3 Fluorometer (submersible) 1 x OSRL fluorometry unit operator	OSRL	24 hours (OSRL personnel)
1 x Autonomous underwater vehicle (AUV) with fluorometry sensor 1 x AUV engineer	Blue Ocean Marine via OSRL	Best endeavours basis
Sample bottles	Eni	Immediate. Located at the Eni YGP
Vessels	TOLL	Vessels within 24 hours of mobilisation.
	Thamarrurr Rangers	Single vessel, typically within 24 hours of mobilisation
Laboratory analysis services and sample containers	Petrolab laboratory	Typically 48 hours – 5 days to raise a PO
Turner C3 Fluorometer (submersible) or other suitable units and additional	Environment panel	Best endeavours basis

 eni australia	Company document identification	Owner document identification	Rev. index.		Sheet of sheets 104 / 117
	000036_DV_PR.HSE.0860.000		Validity Status	Rev. No.	
			PR-OP	0	

Resource	Provider	Timeframe
water quality sampling equipment		

Note: It is anticipated that the Turner C3 will monitor the leading edge of the spill initially (OMP2), whilst the YSI EXO2S sonde will take baseline (SMP6) and/or provide additional hydrocarbon sampling over the spill area (OMP2) depending on the response requirements and movement/extent of the spill. It is recognised that monitoring may be required in more than one location as the response progresses, Eni will therefore utilise the environmental panel or contract directly to obtain further fluorometer units and sampling equipment on a best endeavours basis (not guaranteed) over the course of the response (either for use for OMP2 or SMP6). There are a number of other units available within Australia and internationally that could be mobilised to the location as needs arise over the spill duration.

12.4 Termination of this Plan

This plan can be terminated by the Control Agency when the following are met:

- Monitoring objectives have been met;
- Consultation with relevant stakeholders has determined that no further monitoring is required. For example, consultation with the DNP has determined no further monitoring is required within the JBG AMP; and
- The relevant Jurisdictional Authority/ Government Agency has been consulted and has agreed that water quality monitoring can be ceased.

12.5 Survey Methodology

12.5.1 Hydrocarbon Properties

The extent of the sampling will be dependent on the scale and nature of the hydrocarbon spill. Samples will be taken from on the surface, water column and sediments (shoreline sediments will be collected under SMP5) so that the full geographic extent of the spill is captured.

Water Samples

- Water quality sampling is further detailed in OMP2 (Section 5).

Sediment Samples

- A number of samples should be collected (using a corer/grab) in impacted areas and reference sites; and
- The collection of samples in impacted areas can be based on the outcomes of OMP2 and the modelling undertaken in OMP1.

(shoreline sediments will be taken under SMP5 and can be supplemented with that taken from the annual monitoring program – refer to Section 1.5).

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 105 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

12.5.2 Distribution and Fate of Hydrocarbons

To understand the spatial and temporal distribution of hydrocarbons on and in the sediments and in the water column samples will be collected either along a gradient from the source and/or randomly within target areas. If hydrocarbons are detected on the initial survey, samples will be collected on an ongoing basis to understand temporal extent of hydrocarbons on/in sediments and the water column. The geographic extent of sampling will be dependent on oil distribution and predicted movement (OMP1) and measured hydrocarbons in sediment and within the water column as determined through OMP2.

If specific natural resources are identified to be at risk and the individual scientific monitoring plan is triggered additional sampling locations will be added at relevant impact and reference sites to provide water quality and marine sediment data to assist in determining impacts for those resources.

Sediment Sampling Design

Two types of experimental design will be considered for sediment sampling:

1. Gradient approach; and
2. Random sampling within a target area

The gradient approach will involve monitoring radially from around the source of the spill and collecting sediment samples along these transects. The exact number and length of transects will be determined based on spatial extent of spill. Samples will be collected on an ongoing basis (if detected during the initial survey and attributable to the spill) until the termination triggers are reached. The frequency will be dependent on the results from the initial survey and the extent and duration of the spill. Subsequent sampling, if required, will occur at fixed sampling sites.

The targeted sampling approach incorporates a BACI design (Before-After-Control-Impact). Outputs from OMP1 will identify potential impact areas which can be sampled which will allow sampling of sediment prior to impact (post-spill) under OMP2. These samples will allow an assessment of hydrocarbon presence and concentration and PSD prior to impact. Impact areas will be based on locations where there is a likelihood of hydrocarbons sinking and becoming entrained in sediments.

These areas include:

1. Areas underlying burned or sinking hydrocarbons;
2. Areas which have high levels suspended sediments (generally nearshore areas);
and
3. Areas underlying convergence zones where hydrocarbons on water can potentially become concentrated.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 106 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Within these identified areas sediment samples will be collected from random sites, the number of sites sampled within each area will be dependent on the size of the area. Samples will also be taken from reference sites both prior to the impact (under OMP2) and post the spill response. Samples will be collected on an ongoing basis (if detected during the initial survey and attributable to the spill) until the termination triggers are reached. The frequency will be dependent on the results from the initial survey and the extent and duration of the spill. Subsequent sampling, if required, will occur at fixed sampling sites.

Sediment samples taken using a corer/grab either from a vessel or using an ROV.

Water Quality Sampling Design

Monitoring will be based on a gradient approach to determine both the spatial and temporal distribution of hydrocarbons on the water and entrained within the water column. The geographic extent of the area to be monitored will be based upon the oil distribution and predicted movement of the hydrocarbon spill as determined through OMP1 and measured hydrocarbons in sediment and within the water column as determined through OMP2.

The gradient approach will involve monitoring radially from around the source of the spill and collecting water samples along transects. The exact number and length of transects will be determined based on spatial extent of spill. Samples will be collected on an ongoing basis (if detected during the initial survey and attributable to the spill) until the termination triggers are reached. The frequency will be dependent on the results from the initial survey and the extent and duration of the spill. Subsequent sampling, if required, will occur at fixed sampling sites. Water quality sampling is further detailed in OMP2 (Section 5).

Marine Sediment Sampling

- Marine sediments can be sampled using a corer or grab;
- Containers should to be as full as possible so there is no air to minimize volatilization of hydrocarbons; and
- Appropriate chain of command must be maintained and samples secured.

12.5.3 Reporting

The Environment Advisor (or delegate) will be responsible for the approval and dissemination of the below reports:

- Data report to following the completion of each field survey (including changes to existing sampling or additional sampling required) that should be considered;
- Baseline data report (if required);
- Laboratory analysis (water and sediment samples);
- Interim monitoring data / reports; and
- Final Monitoring Assessment Report, following termination of SMP.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 107 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

12.6 Data and Information Requirements

This SMP may utilise the outputs from OMP1 on the extent of the oil spill from both the predictions of the oil spill distribution, oil spill surveillance and observational data from the field. Information required includes:

- Spill type;
- Spill volume and duration;
- Spatial extent of the spill and movements; and
- All data collected during OMP2.

Baseline Information

In order to understand the changes in hydrocarbon content on the water, in the water column and within sediments it is necessary to understand the sediment and water quality in the predicted impact areas (and reference areas) prior to the spill event.

However, as the nature of the hydrocarbon is that there are few persistence components it is likely that no significant volumes of hydrocarbons will remain within the water column once this SMP is triggered and it unlikely to reach the sediments. Baseline data will be largely comprised of pre-impact/post-spill monitoring or identification of suitable reference sites. Further information relating to baseline information is found in Section 1.5 and within Petrel annual monitoring reports.

12.7 Field Equipment

The YSI EXO2S sonde (including the attachments) is reserved for SMP6 in the first instance and may be utilised as a secondary unit for OMP2 depending on the response requirements.

Additional field equipment can be mobilised via the environmental panel or directly by Eni on a best endeavours basis.

12.8 Logistics

Implementation of this SMP will require a field vessel. The vessel specifications should allow for storage of field equipment and samples. It is expected to be similar in size and no larger than the project vessel used for petroleum activities.

Refer to Section 3 for deployment of vessels. Thamarrurr Rangers have access to two vessels (refer to Table 1.8)

12.9 Personnel Resource Requirements

The monitoring team would initially consist of:

- 1 x Thamarrurr Ranger personnel or trained panel consultant or trained Eni personnel to operate the YSI EXO2S sonde; and
- 1 x vessel and crew.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 108 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Additional resources will be mobilised (refer to Section 1.6) on a best endeavours basis depending on the scale of the monitoring required.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 109 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

13 SMP7 – INTERTIDAL AND SUBTIDAL BENTHIC HABITATS

13.1 Activation of this Plan

Petroleum facility release	Vessel spill
The IMT Leader will activate this plan if it has been observed or is predicted (e.g. through the SMP2 program) that shorelines will be impacted by the hydrocarbon spill and sensitive receptors are present at the affected shorelines.	The IMT Leader will activate this plan if requested by AMSA (the Control Agency) in response to a Level 2 or Level 3 spill (as defined in the relevant OPEP).

13.2 Monitoring Rationale

This SMP is designed to monitor the potential impacts to subtidal benthic communities. The purpose is to determine whether any impacts observed at subtidal benthic habitats are attributable to hydrocarbons or whether they may be attributable to natural fluctuations in the physical environment.

13.2.1 Objective

Monitoring objectives are to:

- Collect quantitative data on subtidal habitats that have been exposed to hydrocarbons from the spill as determined by OMP2
- Monitor recovery to baseline or reference levels.

13.3 Resources Available

See Table 13.1 for available resources. Contracts are summarised in Section 1.6.

Eni maintains blanket contracts with a panel of HSE consultants that would be used to complete the surveys for SMP7. Consultants on Eni's Environment Panel have demonstrated capability of completing surveys off the West Coast of Australia including dive surveys, drop and towed camera surveys to assess the health of benthic communities.

Specifics and further details on the personnel resource requirements are detailed in Section 13.9.

Table 13.1 Resources available for SMP7

Resources	Provider	Timeframes
Subtidal habitat assessment team	Environmental Panel Contracts and ability to contract third party specialists as detailed in Table 1.9	N/A. Contracting timeframe as per Section 1.6.2
Vessels	TOLL (Contract: 5000024047)	Visual observations from chartered vessels occur within 72 hours of mobilisation.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 110 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

Resources	Provider	Timeframes
ROV Divers	Ability to contract third party providers via TOLL (Contract: 5000024047)	Best endeavours

13.4 Termination of this Plan

This plan can be terminated by the Control Agency when the following are met:

- Monitoring objectives have been met; and
- Agreement has been reached with the relevant stakeholders and Jurisdictional Authorities to cease monitoring this receptor.

13.5 Survey Methodology

Survey methodology will be determined dependent on the receptor(s) contacted/potentially contacted. Where enough existing data is available a BACI study design may be considered. A BACI design may also be considered when there is enough time to collect baseline data prior to contact. Where there is no existing data/there isn't time to collect baseline data prior to contact control or reference sites may be used to infer pre-contact health of benthic communities.

Data of subtidal habitats would be collected using one of the below methods:

- ROV data;
- Towed/drop camera data; and
- Diver surveys

Prior to mobilisation the survey design would be agreed in a sampling and analysis plan.

13.5.1 Reporting

The Environment Advisor (or delegate) will be responsible for the approval and dissemination of the below reports:

- Data report to following the completion of each field survey (including changes to existing sampling or additional sampling required) that should be considered;
- Baseline data report (if required);
- Laboratory analysis (sediment samples);
- Interim monitoring data / reports; and
- Final Monitoring Assessment Report, following termination of SMP.

13.6 Data and Information Requirements

This SMP will rely on the outputs from OMP1 on the extent of the oil spill from both the predictions of the oil spill distribution, oil spill surveillance and observational data from the field to inform the survey design.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 111 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

13.7 Field Equipment

The following list is not exhaustive, but includes common items that may be used:

- Vessel with A-Frame and Winch;
- clipboards and data sheets;
- ROV, drop/towed camera system; and
- GPS.

13.8 Logistics

Implementation of this SMP will require a field vessel. The vessel specifications should allow for safe deployment of field equipment, including ROV if required. It is expected to be similar in size and no larger than the project vessel used for field management activities.

Note: Refer to Section 3 for deployment of vessels.

13.9 Personnel Resource Requirement

A single team is considered appropriate to implement a gradient monitoring design assessing potential impacts to the Carbonate Bank and Terrace System of the Sahul Shelf, Pinnacles of the Bonaparte Basin and other subtidal benthic habitats.

The team would consist of:

- 2 x Environmental consultants for fieldwork;
- 1 x Environmental consultant for reporting;
- 1 x vessel with ROV and operators;
- 1 x commercially qualified diver team (if required);
- 2 x towed/drop camera unit;
- 2 x sediment grabs; and
- 1 x subject matter expert selected from Table 1.9.

A team lead/party chief would be required on each vessel with experience in the assessment of subtidal habitats and the deployment of subsea video systems.

Stochastic modelling produced for the Petrel-3 and Petrel-4 Monitoring and Decommissioning activities (RPS 2024) predicted no shoreline accumulation of hydrocarbons at any threshold (see section 1.2). Therefore, intertidal monitoring for SMP7 is not expected to be applicable.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 112 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

14 SMP8 –SOCIOECONOMIC ASSESSMENT

14.1 Activation of this Plan

Petroleum facility release	Vessel spill
The IMT Leader will activate this plan if spill trajectory modelling, surveillance or monitoring predicts or confirms hydrocarbon exposure to high value socio-economic feature.	The IMT Leader will activate this plan if requested by AMSA (the Control Agency) in response to a Level 2 or Level 3 spill, as defined in the OPEP.

14.2 Monitoring Rationale

14.2.1 Objective

The objective of this SMP is to:

- Assess socio-economic impacts and subsequent recovery pathways following a Level 2/3 hydrocarbon spill. This may include impacts and recovery of cultural and heritage features, indigenous heritage features, underwater cultural heritage features (e.g., shipwrecks), socioeconomic features (e.g., tourism and recreational activities, commercial shipping, other marine users).

14.3 Resources Available

See Table 10.1 for available resources. Contracts are summarised in Section 1.6.

Eni maintains blanket contracts with a panel of HSE consultants with the capabilities in designing and implementing socio-economic impact assessment using both dedicated and opportunistic vessels.

Table 14.1 Resources available for SMP8

Resources	Provider	Timeframes
Vessels	TOLL (Contract: 5000024047) – vessels	Vessels within 24 hours of mobilisation.
Socio-economic specialists	Environmental Panel Contracts and ability to contract third party specialists as detailed in Table 1.9	N/A. Contracting timeframe as per Section 1.6.2

14.4 Termination of this Plan

This plan can be terminated by the Control Agency when the following are met:

- Characterisation of impacts to socio-economic conditions has been established;
- Monitoring of recovery is reasonably satisfied for socio-economic conditions; and
- Agreement with relevant stakeholders (e.g., Government authorities) to cease monitoring the high value socio-economic features.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 113 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

14.5 Survey Methodology

Survey methodology will be determined dependent on the receptor(s) contacted/potentially contacted. Where enough existing data is available a BACI study design may be considered. A BACI design may also be considered when there is enough time to collect baseline data prior to contact. Where there is no existing data/there isn't time to collect baseline data prior to contact control or reference sites may be used to infer pre-contact health of benthic communities.

Sampling techniques will vary depending on the individual event and final monitoring design. The following types of sampling may be implemented:

Desktop assessment

- Identification of heritage and/or socioeconomic features at risk based on direct or indirect change to ambient environmental conditions (e.g., water and sediment quality) or values (data collected under OMP1, OMP2, OMP3, SMP2, SMP4, SMP5, SMP6); and
- Assessment of each affected feature and development of appropriate monitoring and management recommendations and develop appropriate.

Field data collection (as required)

- Visual inspection and records of any changes to condition, exposure to oil, changes in behaviour or use etc.;
- Systematic surveillance (e.g., transects) using aerial, vessel or on-ground observations as appropriate; and
- Records of any damage or change during response activities.

Data may be collected using one of the below methods:

- Camera data; and
- Diver surveys.

The following types of parameters may be analysed under SMP8:

- Visual appearance;
- Condition (e.g. evidence of oil cover, damage etc.); and
- Use of parameters from other studies as required (e.g. water and sediment quality monitoring – may be collected under OMP1, OMP2, OMP3, SMP2, SMP4, SMP5, SMP6).

Prior to mobilisation the survey design would be agreed in a sampling and analysis plan.

14.5.1 Reporting

The Environment Advisor (or delegate) will be responsible for the approval and dissemination of the below reports:

- Baseline data report (if required);

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 114 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

- Survey reports; and
- Final Socio-Economic Assessment Report.

14.6 Data and Information Requirements

The information in Table 10.2 will be used to assist in collecting data for SMP8.

Table 14.2: Data and information requirements for SMP3

Information	Details
Sensitive Resources and Receptors	i.e., Petrel-3 and Petrel-4 EP existing environment, etc. Relevant SME support Sea country mapping exercise completed by Eni / AIMS (2019)
Socio economic data	E.g., information on cultural and heritage features, indigenous heritage features, tourism and recreational activities, commercial shipping, other marine users.
Data collected under OMP1, OMP2, OMP3	Results and findings.
Knowledge of current survey designs implemented for other SMP activities	-

14.7 Field Equipment

The following list is not exhaustive, but includes common items that may be used for sampling:

- Survey platform / marine vessels;
- Digital camera (with GPS where possible);
- GPS;
- Binoculars; and
- Nautical charts.

14.8 Logistics

Implementation of this SMP may require a field vessel. The vessel specifications should allow for storage of field equipment.

Note: Refer to Section 3 for deployment of vessels.

14.9 Personnel Resource Requirements

The team for SMP8 may consist of the following personnel:

- 1 x vessel and crew;

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 115 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

- 1 x experienced Socioeconomic and Heritage Specialist (or similar) with at least 5 years' experience in collecting and analysing socio-economic data; and
- Field Personnel as required with experience in relevant sampling and/or recording techniques.

Specific skill sets required to complete the SMP:

- Socioeconomic and Heritage Specialist / SME support; and
- Experience in in collecting and analysing socio-economic data.

 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 116 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

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 eni australia	Company document identification 000036_DV_PR.HSE.0860.000	Owner document identification	Rev. index.		Sheet of sheets 117 / 117
			Validity Status	Rev. No.	
			PR-OP	0	

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