

INPEX 2D Marine Seismic Survey Environment Plan

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1. Purpose of this report

NOPSEMA has accepted the revision to the 2D Marine Seismic Survey Environment Plan (the EP) submitted by INPEX Browse E&P Pty Ltd (the titleholder) for a seismic survey activity in the Browse and offshore Canning basins within the period(s) November to May across the years 2021-2023. INPEX intends to acquire the survey between November 2021 and May 2022, with contingency to acquire between November 2022 and May 2023, and November 2023 to December 2023 if the earlier date is not achieved.

As required by the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (the Environment Regulations), the public was provided with an opportunity to comment on the EP. There were no public comments received during the public comment period.

Following the public comment period, the titleholder submitted the EP for assessment by NOPSEMA on 22 February 2021. On 12th May 2021 NOPSEMA completed its assessment of the EP and has determined that it was reasonably satisfied that the EP meets the criteria for acceptance¹.

This report explains how NOPSEMA took into account key matters raised by stakeholders in making its decision. Comments have been grouped into 'key matters' that capture the key issues, concerns or information provided during the consultation process. This report also contains other key matters reflecting important values and sensitivities that may be of interest to the public.

This report accompanies the accepted INPEX 2D Marine Seismic Survey Environment Plan (Document No. X080-A5-PLN-70001, Revision 5, dated 23 April 2021) submitted by INPEX Browse E&P Pty Ltd which is available on the NOPSEMA website and should be referred to for further information.

1.1. Information relevant to NOPSEMA's decision:

In making the decision to accept this EP, NOPSEMA took into account:

- the Environment Regulations;
- NOPSEMA Assessment Policy (PL0050), Environment Plan Assessment Policy (PL1347) and Environment Plan Decision Making Guidelines (GL1721);
- the INPEX 2D Marine Seismic Survey Environment Plan;
- the information raised by relevant persons, government departments and agencies that is relevant to making a decision;
- the information raised through public comment that is relevant to making a decision (in this case none were received); and

¹ Environment Regulations, Regulation 10A Criteria for acceptance of environment plan

- relevant plans of management and threatened species recovery plans developed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and relevant guidance published by the Department of Agriculture, Water and the Environment.

2. Next steps

Responsibility for the ongoing environmental performance of the 2D Marine Seismic Survey activity remains, at all times, with INPEX Browse E&P Pty Ltd.

NOPSEMA has legislated responsibilities to inspect and investigate offshore petroleum and greenhouse gas storage activities, and to enforce compliance with environmental law. These functions will be applied to this activity in accordance with NOPSEMA's policies.

3. Sensitive Information

Sensitive information received during the public comment period, such as the names and contact details of commenters and specific information identified by the commenter or relevant person as 'sensitive', is not published in this report. Sensitive information is contained in a sensitive information part of the EP which has been considered by NOPSEMA during its assessment process.

4. Further information

This report does not provide an exhaustive record of all matters relevant to environmental management and decision making for this EP.

If you would like further information about the activity, please contact the titleholder's nominated liaison person specified in the EP and on NOPSEMA's webpage for the INPEX 2D Marine Seismic Survey.

If you would like to be notified of regulatory information on the activity, such as start and end dates and enforcement actions (if any), please subscribe to updates from the link on NOPSEMA's website:

https://info.nopsema.gov.au/subscriptions/new?subscription%5Btopic_id%5D=352&subscription%5Btopic_type%5D=Activity

How NOPSEMA has taken into account key matters raised during the assessment and decision making process for the INPEX 2D Marine Seismic Survey

#	Matter	Titleholder response	NOPSEMA's assessment and decision
1	<i>There would be unacceptable impacts to whales due to the proximity of the seismic acquisition area to the pygmy blue and humpback whale biologically important areas (BIAs).</i>	<p>INPEX undertook a comprehensive assessment of the potential impacts to blue and humpback whales. This was informed by underwater acoustic modelling to account for sound propagation and predict the received sound levels in both the humpback resting Biologically Important Area (BIA) and the pygmy blue whale migratory BIA. ANIMAT modelling was also conducted to determine the realistic exposure of whales to sound from the survey.</p> <p>INPEX will ensure that the activity is conducted such that there is no injury or disturbance of marine mammals utilising BIAs (p.280-281). This will be achieved through the application of EPBC Act Policy Statement 2.1 standard control measures as well as night-time and low visibility procedures. INPEX will apply an increased 1 km shut down zone for cows and calves and will not operate from June to October inclusive to avoid overlap with humpback whale migration and calving. INPEX will also apply a 24 km buffer zone around the pygmy blue whale migratory BIA and will not operate within the BIA or buffer during both northern and southern</p>	<p>NOPSEMA recognises that there is the potential for the activity, if not appropriately managed, to have an unacceptable impact on pygmy blue whales utilising the migratory BIA overlapping the operational area and humpback whales utilising the resting BIA inshore of the operational area.</p> <p>In making a decision regarding this matter, NOPSEMA took into account the content of INPEX's EP, relevant scientific literature, and NOPSEMA's Decision Making Guidelines (GL1721), the Conservation Management Plan for the Blue Whale (DoE, 2015), Humpback Whale Conservation Advice (DoE 2015), EPBC Act Policy Statement 2.1 (DEWHA, 2008), and the EPBC Act Significant Impact Guidelines 1.1 - Matters of National Environmental Significance (DEWHA, 2013).</p> <p>During the course of the assessment, NOPSEMA required INPEX to assess the potential for cumulative sound exposure to migrating whales and consider additional control measures to address this uncertainty. This resulted in the adoption of both a pygmy blue whale exclusion zone that temporally excluded acquisition during migration, as well as temporally excluding operations during the humpback whale migration and calving season.</p>

		<p>migratory periods (April-Aug inclusive, October to December inclusive) to prevent any potential for cumulative Temporary Threshold Shift (TTS) impacts to migrating pygmy blue whales.</p>	<p>Given the temporal and spatial control measures that have been implemented, alongside EPBC PS2.1 standard and additional mitigation measures, it is evident that the activity can be managed such that impacts to whales will be limited to short term behavioural disturbance of a small number of transient individuals.</p> <p>After taking into consideration all the environmental management requirements, NOPSEMA has concluded that the activity will not cause unacceptable impacts to humpback or pygmy blue whales.</p>
<p>2</p>	<p><i>There would be unacceptable impacts to flatback turtles utilising the internesting biologically important areas (BIA)</i></p>	<p>INPEX undertook a comprehensive assessment of the potential impacts to flatback turtles utilising the internesting BIA that overlaps the operational area. This was informed by underwater acoustic modelling and peer reviewed literature.</p> <p>INPEX will ensure that the activity is conducted such that there is no physiological injury to marine turtles within the operational area, or behavioural disturbance of inter-nesting flatback turtles within the BIA.</p> <p>This will be achieved through the application of a 250 m shut down zone for marine turtles, soft starts as required by EPBC Act Policy Statement 2.1, and temporal avoidance of the flatback internesting BIA during nesting periods.</p>	<p>NOPSEMA recognises that there is the potential for the activity, if not appropriately managed, to have an unacceptable impact on flatback turtles utilising the internesting BIA overlapping with the operational area. In making a decision regarding this matter, NOPSEMA took into account the content of INPEX’s EP, the Recovery Plan for Marine Turtles in Australia (DoEE 2017), relevant scientific literature and NOPSEMA’s Decision Making Guidelines (GL1721).</p> <p>During the course of the assessment, NOPSEMA required INPEX to consider:</p> <ul style="list-style-type: none"> • Uncertainties in habitat use and response to anthropogenic noise by flatback turtles; • The most conservative threshold for physiological injury to marine turtles (Popper et al., 2014); and, • The farthest range to physiological effects based on the above threshold. <p>This resulted in INPEX implementing control measures to temporally avoid acquisition of seismic in internesting BIAs during nesting periods and applying a conservative</p>

			<p>250 m shutdown zone which is greater than the largest range to physiological impacts based on the most conservative threshold.</p> <p>NOPSEMA is satisfied that with the proposed control measures in place, impacts to flatback turtles will be limited to behavioural disturbance of small numbers of transitory turtles. Consequently, NOPSEMA has concluded that the activity will not result in unacceptable impacts to flatback turtles or disturbance of nesting interesting behaviour.</p>
3	<p><i>There would be unacceptable impacts to the Habitat Protection and National Park Zones of the Kimberley Marine Park.</i></p>	<p>INPEX conducted an extensive evaluation of the potential impact of seismic on the values of the Kimberley Marine Park using the best available science, peer reviewed impact thresholds, and noise modelling predictions. This included an evaluation of the potential impacts of the activity against the zone objectives of the Habitat Protection and National Park Zones. INPEX has also adopted a precautionary 1 km acoustic source exclusion zone that will prevent noise at levels above biologically relevant thresholds for key receptors from attenuating into the Habitat Protection and National Park zones.</p> <p>In preparing the EP, INPEX engaged with the Director of National Parks, and has evaluated and addressed all comments and concerns raised through relevant persons consultation.</p>	<p>NOPSEMA recognises that there was concern that the survey could impact on the values and objectives of the Kimberley Marine Park due to the proximity of the survey with the Habitat Protection and National Park Zones.</p> <p>In making a decision regarding this matter, NOPSEMA took into account the content of the EP, NOPSEMA’s Decision Making Guidelines (GL1721), relevant scientific literature, IUCN Management Principles, comments made by the Director of National Parks during relevant persons consultation and the North West Marine Parks Network Management Plan (Director of National Parks, 2018).</p> <p>NOPSEMA required that INPEX conduct a robust, qualitative and quantitative assessment of the potential for the survey to impact on the values and objectives of the Habitat Protection and National Park zone of the Kimberley Marine Park. NOPSEMA required INPEX to evaluate the levels at which noise could attenuate into</p>

		<p>Based on the noise modelling predictions and adopted control measures, INPEX demonstrated that their activity would not result in unacceptable impacts to the Kimberley Marine Park and would be managed consistent with the IUCN Marine Park Management Principles.</p>	<p>these zones of the marine parks to demonstrate that potential impacts to the values of the park would be of an acceptable level, and if necessary, to provide control measures to ensure impacts were of an acceptable level. This resulted in the adoption of a 1 km acoustic source exclusion buffer and a comprehensive evaluation of potential impacts to the key values of the marine park, including the importance of the area for calving humpback whales, marine turtles and dugongs.</p> <p>Taking into consideration the nature and scale of the activity, available peer-reviewed literature, and the outputs of extensive evaluation undertaken by INPEX, NOPSEMA is satisfied that the activity will not have an unacceptable impact on the values of the Kimberley Marine Park. In addition, NOPSEMA is satisfied that the activity will be managed consistent with IUCN management principles and the objectives of the Habitat Protection and National Park zones of the marine park.</p>
<p>4</p>	<p><i>There would be unacceptable impacts in terms of displacement to commercial fisheries.</i></p>	<p>INPEX undertook a comprehensive assessment of the potential displacement to commercial fisheries. This was based on catch and effort data provided by the WA Department of Primary Industries and Regional Development (DPIRD) for the ten most recent available years 2010-2019. INPEX undertook the analysis to assess and quantify the potential magnitude and extent of overlap between the 2D seismic survey and State-managed commercial fisheries.</p>	<p>NOPSEMA acknowledges the importance of appropriate consultation with commercial fisheries to ensure they have sufficient information and time and that any objections and claims made are appropriately dealt with by the titleholder.</p> <p>In making a decision regarding this matter, NOPSEMA took into account the content of the EP and the NOPSEMA's Decision Making Guidelines (GL1721).</p> <p>Taking into consideration the nature and scale of the activity, the relatively small noise footprint of the seismic survey (being a 2D survey) relative to the total area of</p>



	<p>The EP describes the overlap of the 2D seismic survey operational area with commercial fisheries and notes that this is the overlap of the entire operational area, which is not representative of a real-life area of disturbance/disruption at any one point. Over the course of a day or week the area covered by the survey vessel will be significantly smaller.</p> <p>INPEX will ensure that the activity is conducted such that there is no preventable displacement of commercial fisheries by implementing control measures and a commitment to assess evidence-based payment claims from commercial fishing licence holders who claim to be affected by the seismic survey.</p> <p>Control measures include:</p> <ol style="list-style-type: none"> a. Dividing the survey area into two separate areas to provide fishers with access to alternative and viable fishing grounds, b. Advanced notifications, c. Ongoing communications through daily look ahead reports and on water communications. 	<p>the fishery and the control measures proposed, NOPSEMA is satisfied that displacement (including relocation of vessels, disturbance of fishing gear, and associated operating costs) to commercial fishing activities should be preventable and fishers should be able to continue to fish and achieve acceptable catch rates elsewhere. In the event that unpreventable displacement occurs, NOPSEMA is satisfied that appropriate commitments have been made to implement an evidence-based compensation process.</p>
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References

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