

Approval notice and statement of reasons

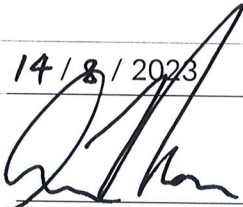
Petroleum (Environment) Regulations 2016 (NT) (Regulations)

Interest holder	Minerals Australia Pty Ltd ABN 47 124 475 538 Jacaranda Minerals Pty Ltd ABN 68 117 264 570
Petroleum interest(s)	Exploration Permits 144 and 154 (EP144 & EP154)
Environment management plan (EMP) title	Onshore Petroleum Projects Environmental Management Plan EP144 & 154
EMP document reference	MIA1-4, 199534-195, prepared by Cameron Jones & Narelle Harvey, Rev 7, dated 17/03/2023
Regulated activity	<ul style="list-style-type: none"> • acquisition of 2D seismic data • civil construction of three well pads and one accommodation camp • drilling of three stratigraphic core drill holes • site decommissioning and rehabilitation
Is the EMP a new plan submitted under reg 6 or a revision of a current plan submitted in accordance with reg 18, or regs 15 and 17?	This is a new plan submitted under reg 6.
Was the regulated activity referred ¹ for consideration whether environmental impact assessment was required?	No
Was environmental impact assessment ² required?	N/A
Has an environmental approval ³ been issued for the regulated activity?	N/A
Has an Authority Certificate under the <i>Northern Territory Aboriginal Sacred Sites Act 1989</i> been issued for the regulated activity?	Yes C2020/086 (EP144) C2021/049 (EP154)
Date an EMP compliant with reg 8 was first submitted under reg 6	3 August 2022
Date within which the EMP was published for comment under reg 8A, if applicable	9 August 2022 to 6 September 2022
Date further information was required and submitted under reg 10, if applicable	23 September 2022 (requested) 4 November 2022 (submitted) 24 November 2022 (requested) 30 January 2023 (submitted) 17 February 2023 (requested) 17 March 2023 (submitted)
Date of resubmission notice under reg 11(2)(b), if applicable	28 September 2022 (requested)
Date EMP was resubmitted under reg 11(3), if applicable	4 November 2022 (submitted) 5 December 2022 (requested)

¹ This means a referral under the *Environment Protection Act 2019* (NT) (EP Act) and/or the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act).

² This means a requirement for an environmental impact assessment to be conducted under the EP Act and/or the EPBC Act.

³ This means an approval granted under the EP Act and/or the EPBC Act.

	30 January 2023 (submitted)
Date a notice setting out a proposed timetable for consideration of the EMP was issued under reg 11(2A), or reg 11(3)(c), if applicable	15 February 2023 30 March 2023 17 April 2023 9 June 2023
Proposed timetable given in notice under reg 11(2A), or reg 11(3)(c), if applicable	31 March 2023 19 April 2023 16 June 2023 14 July 2023
Where provided under s29B of the <i>Northern Territory Environment Protection Authority Act 2012</i> (NT) (NT EPA Act), the dates the Northern Territory Environment Protection Authority (NT EPA) was requested to, and provided, advice on EMP	Date of Minister's request for advice: 25 February 2019 Date of NT EPA Advice: 4 April 2023
Date of decision	14 / 8 / 2023
Decision maker	 Signature
	Hon Lauren Jane Moss MLA, Minister for Environment, Climate Change and Water Security

1 Approval notice

1. I approve the EMP under 11(3)(a)(i).
2. The approval is subject to the following conditions:

Notification Conditions

Condition 1: By 1 September of each year, the interest holder must submit to Onshoregas.DEPWS@nt.gov.au a notification if seismic activities and other ground disturbing activities (including earth moving, land clearing, establishment of well pads, and establishment of access tracks) are proposed to be conducted during the upcoming Wet Season (as defined in the *Code of Practice: Onshore Petroleum Activities in the Northern Territory* (2019) (**the Code**)). The notification must include:

- a) the nature of the activities; and
- b) the proposed timeframe for conducting the activities.

Condition 2: Within 24 hours of commencing or stopping seismic activities and other ground disturbing activities (including earth moving, land clearing, establishment of well pads, and establishment of access tracks), the interest holder must submit to Onshoregas.DEPWS@nt.gov.au a notification that activities have commenced or ceased, including the date the activities commenced or ceased and the type and location of the activities.

Condition 3: Within 24 hours of drilling activities commencing or stopping, the interest holder must submit to Onshoregas.DEPWS@nt.gov.au a notification that drilling activities have commenced or stopped, including the location of the relevant drilling activity.

Reporting Conditions

Condition 4: By 1 October of each year, the interest holder must submit to Onshoregas.DEPWS@nt.gov.au a completed Annual Environment Performance Report Template for the preceding 12 month period of 1 July to 30 June. The Template must be completed in accordance with the *Onshore Petroleum Annual Environment Performance Reports Guideline* (28 October 2021).

Condition 5: Within 90 days of the anniversary of the approval of the EMP, the interest holder must provide a rehabilitation report to DEPWS, via Onshoregas.DEPWS@nt.gov.au, which must:

- a) describe the progressive rehabilitation activities undertaken and the method used to achieve rehabilitation during the preceding 12 months;
- b) include the outcome of rehabilitation monitoring of disturbed areas as determined from:
 - i. fixed photo point monitoring locations in the disturbed areas and analogue sites with photos taken on the same trajectory on every monitoring occasion; and
 - ii. assessment of ground cover, species composition and canopy cover;
- c) include geo-referenced photographs taken of disturbed areas and analogue sites;
- d) describe maintenance activities undertaken, including erosion and sediment control and weed control;
- e) identify any environmental factors influencing rehabilitation success and corrective actions taken to improve rehabilitation outcomes;
- f) include geospatial files depicting areas remaining under rehabilitation and areas where rehabilitation success has been achieved; and
- g) include a schedule for rehabilitation activities (including monitoring) for the next 12 months.

Condition 6: Within three business days of 31 March, 30 June, 30 September and 31 December of each year, the interest holder must submit to Onshoregas.DEPWS@nt.gov.au a report with the following information:

- a) regulated activities completed in the previous quarter;
- b) regulated activities to be conducted in the next quarter, including estimated duration;
- c) the date any conditions of this approval were completed in the previous quarter;
- d) the date any conditions of this approval are due for completion in the next quarter; and
- e) monitoring and compliance activities to be conducted in the next quarter based on commitments in the approved EMP, relevant to the stage of a regulated activity.

Condition 7: During drilling activities, the interest holder must record the date, time and position title of the officer who conducted the daily inspection, and must submit to Onshoregas.DEPWS@nt.gov.au a weekly report with the following information:

- a) the daily freeboard available in drill cutting pits (in cm) and the time of

measurement; and

- b) whether any non-compliances with legal requirements were identified in the daily inspections and, if relevant, corrective actions taken, or proposed to be taken, and the timeframe for implementation of corrective actions, in response to the non-compliances.

Condition 8: If regulated activities are conducted during the Wet Season (as defined in the Code), the interest holder must submit to Onshoregas.DEPWS@nt.gov.au weekly reports with the following information:

- a) whether unsealed access roads were used by any vehicle or machinery, other than a light vehicle;
- b) daily inspection reports of erosion and sediment control measures and, where relevant, corrective actions taken, or proposed to be taken, in response to issues identified in the daily inspection reports;
- c) daily inspection reports for secondary containment in use and, where relevant, corrective actions taken, or proposed to be taken, in response to issues identified in the daily inspection reports and the date corrective actions are completed;
- d) all dates and times that the regulated activity was stopped due to Wet Season events and the date and time that the regulated activity recommenced; and
- e) daily measurements of the freeboard available in each drill cutting pit (in centimetres).

Condition 9: The interest holder must submit the weekly reports required by conditions 7 and 8 by 5 pm ACST each Monday for the preceding week or part thereof.

Incident Management Conditions

Condition 10: The interest holder must record all accidental releases of liquid contaminant or hazardous chemicals in a site spill register, which records:

- a) the liquid contaminant or hazardous chemical spilled or leaked;
- b) the GPS co-ordinates of the location of the spill or leak;
- c) the source and volume of the spill or leak;
- d) the volume of impacted soil removed for disposal and the depth of any associated excavation; and
- e) the corrective actions taken or proposed to be taken to prevent recurrence of an incident of a similar nature.

2 Material considered

1. The following material has been taken into account in making this decision:
 - a. Onshore Petroleum Projects Environment Management Plan EP144 & 154, 17 March 2023 (MIA1-4)
 - b. The principles of ecologically sustainable development referenced in reg 5A and the approval criteria set out in reg 9(1)
 - c. The NT EPA advice provided at my request under s29B of the NT EPA Act
 - d. The Authority Certificate issued under the *Northern Territory Aboriginal Sacred Sites Act 1989*
 - e. The Code of Practice: Onshore Petroleum Activities in the Northern Territory (Code) as set out in reg 4A
 - f. The Department of Industry, Tourism and Trade advice that the Well Operations Management Plan approved for the regulated activity meets the requirements of the *Code of Practice: Onshore Petroleum Activities in the Northern Territory*
 - g. All public comments submitted under reg 8B.

3 Statement of reasons

1. The EMP meets the approval criterion in reg 9(1)(a), because it contains all the information required by Schedule 1 of the Regulations. reg 9(1)(a)
2. I have taken into account the approval criterion in reg 9(1)(b) by noting the nature and scale of the regulated activity and bearing it in mind during my consideration of the impacts and risks. In particular, I note that: reg 9(1)(b)
 - a. The nature of the regulated activity is as follows:
 - i. acquisition of 2D seismic data
 - ii. civil construction of three well pads inclusive of one accommodation camp
 - iii. drilling of three stratigraphic core drill holes
 - iv. site decommissioning and rehabilitation.
 - b. The scale of the regulated activity is as follows:
 - i. The 2D seismic acquisition involves clearing of 12.7 ha, which will be progressively rehabilitated.
 - ii. Clearing associated with the remaining activities is 7.75 ha.
 - iii. Total groundwater use is estimated at 0.75 ML (EP144) and 0.6 ML (EP154).
 - iv. Peak traffic movements is estimated at 10 (EP144) and 17 (EP154) vehicles per day.
 - v. The three stratigraphic core holes will be drilled to a maximum depth of 1,000 meters.
 - vi. Rehabilitation will be conducted following completion of works.
3. The approval criteria in reg 9(1)(c) requires that I be satisfied that the activity will be carried out in a manner by which the environmental impacts and environmental risks of the activity will be reduced to a level that is both: (i) as low as reasonably practicable; and (ii) acceptable. In assessing whether the EMP meets the approval criteria, I note that my decision is a prescribed decision (under reg 5A) for s 6A of the Act, and as such requires me to consider and apply the principles of ecologically reg 9(1)(c)

sustainable development. In accordance with reg 12(3), I provide the following information about how the EMP meets the approval criteria, and the manner in which I have taken into account the principles of ecologically sustainable development when considering whether or not the plan meets the approval criteria.

4. The principles of ecologically sustainable development are defined at section 18-24 of the *Environment Protection Act 2019*, and I address each in turn:
 - a. The decision-making principle (s 18 *Environment Protection Act 2019*) requires effective integration of long-term and short-term environmental and equitable considerations, and for processes to provide for community involvement in relation to decisions and actions that affect the community. Related to this, I note the following:
 - i. The regulated activity is low impact and of short duration (estimated nine weeks) and forms one component of a broader onshore petroleum exploration program in the region. The regulated activity will inform decision-making about longer-term petroleum activities.
 - ii. Public consultation on the EMP was required under the Petroleum (Environment) Regulations 2016, as the EMP proposes drilling activities. The EMP was made available for public comment for 28 days from 9 August 2022 to 6 September 2022.
 - iii. The Department received two public submissions on the EMP, both originating from the NT. Both submissions were a unique submission and opposed to onshore petroleum development generally. The submissions received raised substantially similar issues as to those addressed in this or previously approved EMPs, or the Scientific Inquiry into Hydraulic Fracturing in the Northern Territory (HFI).
 - iv. I note the issues raised in public submissions across the following broad environmental themes:

Theme	Overview of issue raised
Climate change	<ul style="list-style-type: none"> Impacts from climate change
Cumulative impacts	<ul style="list-style-type: none"> Consideration of water extraction and greenhouse gases of future plans
Flora and fauna (environment)	<ul style="list-style-type: none"> Adequacy of baseline assessment Impact to creek crossings Ambiguity about implementation of mitigation measures Impact to threatened species Adequacy rehabilitation method
Social and cultural	<ul style="list-style-type: none"> Impact to sacred sites and artefacts Lack of stakeholder engagement
Water	<ul style="list-style-type: none"> Impacts from groundwater use

- v. The specific issues of concern raised in public submissions have been addressed in the NT EPA Advice which I have considered. I recognise the importance the community places overall, on assessment of cumulative impacts, environmental protection and ensuring decisions are based on the principles of ecologically sustainable development. I have taken into account any public submissions in making my decision. The EMP appropriately identifies the risk and potential impacts from the regulated activity and commits to mitigation, management and monitoring measures to address these risks and potential impacts.

- vi. I am satisfied that the community has had a reasonable opportunity to be involved in processes in relation to this decision.
 - vii. Next, I have considered short-term and long-term environmental impacts of carrying out the regulated activity. Environmental impacts include direct and indirect effects on the physical, biological, economic, cultural and social aspects of the environment, and may include cumulative impacts or occur over time.
 - viii. The information before me suggests both short- and long-term environmental impacts are manageable with the proposed mitigations in place.
 - ix. There is no particular contest between economic, social and environmental considerations that requires further mention.
 - x. Taking an integrated view of long-term and short-term environmental and equitable considerations, I am satisfied that the considerations on balance and taken together support approval of the EMP.
- b. The precautionary principle (s 19 *Environment Protection Act 2019*) applies when there are threats of serious or irreversible environmental damage, and requires that lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. I am satisfied that the regulated activity does not pose a threat of serious or irreversible environmental damage. While conduct of the regulated activity will likely result in minor and short-term impacts, I am satisfied the measures identified by the interest holder are effective to prevent a threat of serious or irreversible environmental damage.
- i. There is some information that indicates the regulated activity may create environmental damage through erosion and subsequent impact on important riparian habitat, if rehabilitation works are not undertaken in a correct and timely manner.
 - ii. On the basis that the threat does warrant the application of the principle, it is necessary to consider if there is a significant degree of uncertainty as to the nature and scope of the environmental damage that may occur. In relation to the regulated activity under consideration, a detailed baseline assessment was carried out to assess water crossings and identify important habitats in the project area. The interest holder addressed this potential risk as follows:
 - (1) The scope of the seismic activity was reduced from an initial 43.6 km to 31.77 km to minimise impact to water crossings and important habitat. The remaining seismic lines are critical for the success of the seismic program.
 - (2) The stream crossing in the known Groundwater Dependent Ecosystem (GDE) was surveyed as part of the baseline assessment and was found to be an area of sparse trees; the Melaleuca Woodlands that define the GDE were not recorded at the water crossing location.
 - iii. On this basis, I do not consider that the threat involves scientific uncertainty of a degree that triggers the application of the precautionary principle.
 - iv. I accept the nature and scale of the project significantly reduces the threat; however the abundance of stream crossings in the wider region is high and as such, the threat is not fully avoided. I therefore am not able to accept arguments that the threat is not certain and real.
 - v. Accepting there is a relevant threat, the EMP contains the following precautionary measures.

- (1) The majority of the seismic lines will be traversed blade up to minimise environmental impact.
 - (2) Trees with a diameter at 1.3 meter above ground level larger than 25 cm will not be cleared, to minimise disturbance to important habitats.
 - (3) The seismic activity can be undertaken anywhere within a 100 meter buffer area to allow for micro-siting of seismic lines to be undertaken, to avoid large trees, choose the least impact location to cross watercourses, and reduce clearing requirements.
 - (4) Seismic lines will be rehabilitated progressively following behind with the completion of each survey line to ensure the land is stabilised as soon as possible after disturbance, to reduce the occurrence of erosion, sedimentation, loss of topsoil and weed invasion.
 - (5) Preliminary assessment of rehabilitation monitoring will be conducted six to nine months post rehabilitation works, and annual rehabilitation monitoring will be conducted post wet season, to review rehabilitation success and undertake corrective actions where necessary.
- vi. Given the nature and scale of the project and the proposed mitigation measures, alternative options to mitigate the threat are no better than the options already proposed.
 - vii. I have imposed a condition as additional precautionary measure to ensure there are no long term impacts to the environment, by demonstrating rehabilitation is carried out in the shortest practical time.
 - viii. I have carefully evaluated the proposed precautionary measures against the risk-weighted consequences of impacts given the options available, and with a view to avoiding serious or irreversible damage to the environment wherever practicable. The EMP combined with the conditions I have imposed mitigates risks of serious or irreversible damage due to lack of full scientific certainty to a level that is both as low as reasonably practicable and acceptable.
- c. The principle of evidence-based decision-making (s 20 *Environment Protection Act 2019*) requires decisions to be made on the best available evidence in the circumstances that is relevant and reliable. I am of the view that the evidence before me satisfies this requirement for the following reasons: I am satisfied that the best available evidence has been obtained because:
- i. The EMP was developed by environmental consultants and archaeologists with experience in the Northern Territory.
 - ii. The interest holder employed a comprehensive process to obtain relevant information including baseline ecological assessments, archaeological assessments, stakeholder engagement and consultation with relevant NT Government agencies.
 - iii. The EMP was provided available for public comment to identify any deficiencies or additional evidence required from 9 August 2022 to 6 September 2022.
 - iv. The EMP has undergone review and assessment by a multi-disciplinary team in NT Government agencies, which has informed my decision on the EMP.
 - v. The interest holder provided further information to clarify aspects of the EMP and amended the EMP to ensure it meets the requirements of the Regulations and the Code.

- vi. Some concerns have been raised as to whether the information before me satisfies the principle of evidence-based decision-making. I now turn to consideration of these concerns:
- (1) Concern was raised about the impacts of greenhouse gas emissions from the project on climate change, noting that the EMP does not acknowledge or describe the impact of potential future petroleum production and exploration activities on climate change, or the effect of climate change on NT communities and ecosystems. Emissions of this project have been calculated in accordance with the National Greenhouse and Energy Reporting Scheme. The emissions from this project are limited to land clearing, seismic acquisition and stratigraphic drilling activities, and the project does not exceed the threshold in the Northern Territory Government Large Emitters Policy. The contribution of greenhouse gas emission impacts from this project to climate change is considered negligible, given its nature and scale, and short timeframe.
 - (2) Concern was raised about the lack of consideration of water extraction and greenhouse gases of future plans. The project is limited to geomorphological investigations and does not propose to establish petroleum wells. The outcome of this project will inform any future development potential and opportunity. In this current investigative stage, future plans hold no certainty and therefore are unable to predict cumulative impacts with any level of certainty.
 - (3) Concern was raised about the adequacy of the baseline assessment, noting that inadequate efforts were taken to identify local populations of threatened species. The baseline assessment undertaken as part of the EMP provides an adequate understanding of the threatened species that may occur in the area of the regulated activities. The baseline assessment methodology is consistent with that of other projects across the industry and the outcomes were reviewed by experts within the Northern Territory Government.
 - (4) Concern was raised about the impact to creek crossings, particularly to Blackwater Creek, given that it has been identified as a potential GDE. The scope of the seismic program was reduced from 43.6 km to 31.77 km to minimise the impact to creek crossings and important habitats. The stream crossing in Blackwater Creek was surveyed as part of the baseline assessment, and was found to be an area of sparse trees without the Melaleuca Woodlands that define the GDE. To minimise impacts to this area, the EMP commits to using an experienced field technician to precede the seismic team to identify a path at this location that minimises impact to the creek.
 - (5) Submissions raised concern about the ambiguity about implementation of mitigation measures, noting that the EMP does not clearly commit to implementing mitigation measures, but rather states mitigation measures as recommendations. Additionally, this raised concerns about the impacts to threatened species, given the lack of commitment to implement mitigation measures. The EMP was amended to clarify and clearly commit to the mitigation measures to minimise impact to threatened species and important habitats. As the area of suitable habitat proposed to be cleared is very small compared to the area of remaining suitable habitat for the identified threatened species, it is considered unlikely the proposed regulated activities pose a significant risk to the threatened species.

- (6) Concern was raised about the adequacy of the rehabilitation method, noting that a respread of cleared vegetation and topsoil is inadequate. The EMP commits to monitoring rehabilitation success, inclusive of weeds and erosion monitoring, on an annual basis. Where necessary, corrective actions will be undertaken such as infill seeding, soil amelioration, pest management, erosion remediation and weed management. Additionally, I have imposed a condition that requires the interest holder to track rehabilitation progress and ensure rehabilitation is carried out in accordance with the EMP in the shortest practical time.
 - (7) Concern was raised about impacts to sacred sites and artefacts. A heritage assessment was undertaken of the project area and the EMP commits to avoiding areas of cultural heritage (sacred sites and archaeological heritage sites). No EMP can be approved without provision of an Authority Certificate issued by the Aboriginal Areas Protection Authority, which sets out any requirements and conditions for preventing impact to sacred sites. The interest holder has obtained Authority Certificates for this project.
 - (8) Concern was raised about a lack of stakeholder engagement. The EMP was amended to include more information regarding stakeholder engagement, inclusive of recent engagement. The stakeholder engagement log demonstrates the interest holder has engaged with a range of stakeholders including direct engagement with the relevant leaseholders, Aboriginal stakeholders and the Northern Land Council. Onshore petroleum activities cannot commence unless the identified stakeholders have been properly engaged. For Aboriginal stakeholders the processes administered by the Land Councils under the *Native Title Act 1993* and the *Aboriginal Land Rights (Northern Territory) Act 1976* assist in ensuring that stakeholder engagement is conducted appropriately. Additionally, the interest holder has provided its stakeholders with updated information about the work program during the assessment of the draft EMP.
 - (9) Concern was raised about impacts from groundwater use, noting that no evidence is given to support the claim that extracting the water required for this project is acceptable or sustainable. Groundwater volumes required for the project are very low, and do not trigger the need for a water extraction licence under the *Water Act 1992 (NT)*. The use of groundwater for the exploration program is not expected to impact on other current and future water users due to the remote location and the minimal volume of groundwater required to conduct the regulated activity. If freshwater is to be sourced from a licenced provider, the cumulative impact of use of that resource will already have been assessed as part of the process for issuing a groundwater extraction licence.
- vii. The outcome of this exploration project will inform any future development potential and opportunity. Future production of gas will require a new EMP, in which the (cumulative) impacts of the proposed program will need to be addressed.
 - viii. I believe the information regarding the proposed regulated activity adequately provides the best available evidence in the circumstances that is relevant and reliable to the evidence-based decision-making process.
- d. The principle of intergenerational and intra-generational equity (s 21 *Environment Protection Act 2019*) requires that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced

for the benefit of present and future generations. I have given consideration to the impact on present and future generations as follows:

- i. This criterion requires me to turn my mind to whether the benefits of the proposal disproportionately burden present or future generations, or particular groups or communities of present or future generations.
 - ii. I have considered the use of groundwater and am satisfied that the proposed use will not result in either short-term or long-term impacts to other groundwater users.
 - iii. I have considered the potential benefit for future generations from increased economic activity in the region and am satisfied that exploration is a necessary precursor for future economic gains that may be achieved through a viable onshore petroleum industry.
 - iv. I have considered whether the health, diversity and productivity of the environment is maintained or enhanced for the benefit of each of these relevant groups and conclude that on the balance, the health, diversity, and productivity of the environment is not reduced by the regulated activity for each identified group or community.
 - v. The environmental burdens of the regulated activity will not disproportionately affect particular stakeholders. Greenhouse gas emissions associated with this project are significantly below the threshold of becoming a large emitter, and groundwater use is below the threshold of requiring a groundwater extraction licence.
 - vi. I have considered the greenhouse gas emissions and note that the total contribution from this activity is negligible (approximately 2,647 tonnes of CO₂-equivalent) when considered in context of NT emissions, which were approximately 17.32 million tonnes of CO₂-equivalent in 2020.
 - vii. Cultural values relating to sacred sites will be protected through the application of Authority Certificates issued to the interest holder under the *Northern Territory Aboriginal Sacred Sites Act 1989* and measures for reporting on discovery of archaeological sites during civil maintenance activities.
 - viii. Accordingly I do not believe that the carrying out of the regulated activity in accordance with the EMP would have an effect contrary to the principle of inter or intra-generational equity.
- e. The principle of sustainable use (s 22 *Environment Protection Act 2019*) requires that natural resources should be used in a manner that is sustainable, prudent, rational, wise and appropriate. In applying this principle, I have considered the following:
- i. I note the findings of the Scientific Inquiry into Hydraulic Fracturing (HFI) in the NT that states: *"... in the short to medium term, the Australian National Energy Market is likely to require higher levels of flexible, gas-fired generation, which can provide a reliable, low emissions substitute for ageing coal-fired generation, and essential security services to complement variable renewable electricity generation."*⁴
 - ii. I note the NT Government's commitment to implementing all the recommendations of the HFI, including working with the Australian

⁴ Refer section 9.7.4 of the *Scientific Inquiry into Hydraulic Fracturing in the Northern Territory*; p 233. Available at: <https://frackinginquiry.nt.gov.au/inquiry-reports?a=494286>

Government to seek to ensure that there is no net increase in lifecycle GHG emitted in Australia from any onshore petroleum produced in the NT.

- iii. The use of groundwater for the exploration program is not expected to impact on other current future water users due to the remote location and the minimal volume of groundwater required to conduct the regulated activity. If freshwater is to be sourced from a licenced provider, the cumulative impact of use of that resource will have been assessed as part of the process for issuing a groundwater extraction licence.
 - iv. No groundwater extraction licences are currently required for the regulated activity. Any future consideration of groundwater use will include an application for an extraction licence.
 - v. Accordingly, I am satisfied that the concept of sustainable use of natural resources has been taken into account.
- f. The principle of biological diversity and ecological integrity (s 23 *Environment Protection Act 2019*) requires that biological diversity and ecological integrity should be conserved and maintained. I have applied this principle as follows:
- i. I believe the information I have regarding the existing biodiversity and ecosystems that are to be affected by the regulated activity; the effects that are likely; and the mitigation measures reasonably available, is sufficient.
 - ii. GDEs at Blackwater Creek and the floodplain of one of its tributaries are present in the project area, both supporting Melaleuca Woodlands. The EMP demonstrates impacts to these areas have been reduced, with seismic lines having been removed from the scope of works, and an ecological assessment demonstrating the Melaleuca Woodlands that define the GDE are not observed at the water crossing location. The use of an experienced field technician to precede the seismic team to identify a path at the Blackwater Creek water crossing further reduces risks to this ecosystem.
 - iii. Eleven threatened species may occur in the EP144 area, with two of those considered to have a high likelihood of occurrence (Grey Falcon, Plains Death Adder). Seven threatened species may occur in the EP154 area, with two of those considered to have a high likelihood of occurrence (Mertens' Water Monitor and Gouldian Finch). Due to the management strategies outlined in the EMP, the relatively small area of potential impact and the short duration of the project, it is unlikely that the regulated activity will pose a substantive risk to the identified threatened species.
 - iv. The EMP outlines measures to minimise impacts on affected environmental values, including the management of threatening processes such as weeds and fire. Where relevant, management measures for the threatening processes are consistent with the requirements of the Code, NT Land Clearing Guidelines and Weed Management Planning Guideline: Onshore Petroleum Projects. Specific examples of mitigation controls include construction and maintenance of firebreaks, ongoing weed monitoring and the requirement to have weed hygiene declarations prior to accessing the site.
 - v. The conservation of biological diversity and ecological integrity is vital to the achievement of ecologically sustainable development. Given the fundamental nature of this consideration, I have given central importance to the conservation of biodiversity and ecological integrity in weighing whether I am satisfied the approval criterion in reg 9(1)(c) has been met.

- vi. It is often the case that the conservation of biological diversity and ecological integrity is vital to the achievement of ecologically sustainable development. By their nature, ecosystems are complex and interdependent systems and relationships; this needs to be considered in relation to what preserves their integrity. Biological diversity also represents a wealth of potential natural resources that may provide options for present and future generations. I have born this in mind when considering the weight to be given to the evidence before me regarding the potential impacts of the regulated activity on biodiversity and ecological integrity.
- vii. The measures to conserve and maintain biological diversity and ecological integrity in the EMP are appropriate, given the nature and scale of the regulated activity.
- viii. If carried out in accordance with the EMP, the risks of the regulated activity to the conservation of biological diversity and ecological integrity are considered to be mitigated to an acceptable level.
- g. The principle of improved valuation, pricing and incentive mechanisms (s 24 *Environment Protection Act 2019*) requires that environmental factors should be included in the valuation of assets and services, through application of the 'polluter pays' principles, consideration of full life cycle costs of providing goods and services, and pursuing environmental goals in the most cost-effective way. I have applied the principle as follows:
 - i. The pollution and waste that will be generated by the regulated activity in the general course of its operation includes domestic waste, drilling waste and emissions.
 - ii. I am satisfied that both hazardous and non-hazardous waste will be disposed of in accordance with the requirements of the *Waste Management and Pollution Control Act 1998* and the *Radiation Protection Act 2004* by the interest holder at its own cost, and outlined in the Waste and Wastewater Management Plan.
 - iii. In relation to the risks of a pollution event that may occur unintentionally during the operations of the regulated activity, I consider that the following measures are in place to ensure the interest holder bears the costs of containment, avoidance, and abatement. This includes:
 - (1) Impacts and risks associated with contamination of soil, surface water and groundwater, which are managed through meeting mandated requirements for well integrity and clean-up of spills and leaks and remediation of impacted soil, and
 - (2) Impacts and risks associated with loss of containment of wastewater, which are managed through containment measures.
 - iv. In relation to full life cycle costs, it is expected that the regulated activity will have a life cycle of no more than one year, and at the end of this cycle the interest holder will take action to remove any residual pollution and waste as detailed by the EMP.
 - v. In addition the interest holder is required to provide an environmental security sufficient to allow third party intervention for the rehabilitation and remediation should it be required, ensuring the interest holder bears the costs of pollution.

- vi. The Spill Prevention and Response Plan includes commitments to immediately remediate spills and leaks, so as to reduce the risk of long-term contamination of the environment and avoid environmental impact legacies.
- vii. With these measures in place, I am satisfied that the EMP ensures that environmental costs are not left as externalities to be paid for by Territory taxpayers or the local community. They will be fairly paid for by those who stand to benefit from the regulated activity, such as the interest holder, and consumers who choose to purchase the interest holder's products. To the extent there are some costs to the Territory, I am satisfied that this is appropriate given the broader economic benefits.
- viii. In relation to options to pursue environmental goals in relation to the regulated activity, I have taken into account that these goals should be pursued in the most cost-effective way.
- ix. I believe approval of the EMP with the conditions I have imposed is consistent with the principle of improved valuation, pricing and incentive mechanisms.
- h. The NT EPA did not require the EMP to be referred under the *Environment Protection Act 2019*, as the regulated activity does not have the potential to cause a significant impact on the environment. reg 9(3)
- i. The NT EPA reviewed the EMP for the regulated activity against the approval criteria in regulations 9(3)(a) and 9(3)(c) of the Regulations and other matters the NT EPA considered relevant, and has provided advice about the EMP.
- i. The NT EPA has provided the following in relation to the regulated activity and the EMP:
 - i. In accordance with my request under s 29B of the NT EPA Act, the NT EPA reviewed the EMP against the approval criteria in regulation 9(1) of the Regulations and other matters the NT EPA considered relevant, and has provided advice about the EMP. Relevantly:
 - (1) The NT EPA recommended that should the EMP be approved, it be subject to conditions related to four outcomes. The NT EPA's recommendations have informed the conditions of this approval. All conditions are outlined in section 1(2) of this Approval Notice.
 - (2) The NT EPA concluded that the EMP for the regulated activity, subject to the recommended approval conditions, is appropriate for the nature and scale of the regulated activity and demonstrates that the regulated activity can be carried out in a manner that environmental impacts and environmental risks of the activity will be reduced to a level that is as low as reasonably practical and acceptable.
 - ii. I have considered the NT EPA's advice and recommendations and these have been incorporated where relevant into this statement of reasons and the conditions in the Approval Notice.
- j. The existing environment along with its particular values and sensitivities is appropriately identified in Chapter 4 of the EMP, and to the extent I do not agree or there is some uncertainty, I have imposed conditions to address the relevant risk or risks. reg 9(1)(c)
- k. I agree with the risk assessment set out in Appendix E of the EMP, and to the extent I do not agree I have imposed a condition or conditions to address the relevant risk or risks.

- l. Whilst the majority of the activity is planned to occur in the dry season, the interest holder's risk assessment is applicable to activities in all seasons and the outcomes are reflected in the EMP that includes, for example; a weed management plan; erosion and sediment control plan; bushfire management plan; waste and wastewater management plan; rehabilitation plan; emergency response plan; and spill management plan. This is consistent with the requirements of the Code that allows for the regulated activity to occur in the wet season months when contingency planning is provided and minimum freeboard in wastewater infrastructure is maintained.
- m. The anticipated environmental impacts are appropriately identified in Appendix E of the EMP. The cumulative effects of this exploration program have been identified and assessed. In EMPs for subsequent exploration and production stages (if they proceed) the interest holder will need to continue to address cumulative effects.
- n. The EMP demonstrates how the interest holder will comply with relevant requirements of the Code in undertaking these regulated activity. This includes reference to applicable Australian and international standards that have been adopted for regulated activity, as applicable. The EMP cross references relevant sections of the Code that apply to the mitigation and management measures to enable the reviewer to identify and confirm that the proposed activities comply with the Code, as applicable. The EMP provides water management commitments and management plans that meet the requirements of the Code.
- o. I am satisfied that the interest holder has conducted ongoing stakeholder engagement in accordance with the Regulations. The EMP provides details of stakeholder engagement that meets Regulation 7 and Schedule 1 item 9 of the Regulations (Chapter 5 and Appendix P). Stakeholder engagement records demonstrate that stakeholders did not raise objections about environmental impacts of the proposed activity that required specific changes from the interest holder. The EMP provides details of written feedback and input from stakeholders as part of the stakeholder engagement records. The risk assessment in the EMP details the potential environmental impacts of the activity and proposed environmental outcomes to manage impacts on social and cultural surroundings.
- p. I recognise the importance the community places on the protection of water, human health, stakeholder engagement, and climate change. The EMP appropriately identifies the risks and potential impacts from the regulated activity and commits to mitigation and management measures to address these risks and potential impacts.
- q. There are no environmental impacts or environmental risks relating to the proposed regulated activity that I consider to be unacceptable.
- r. Overall, having regard to the above, I am satisfied that the EMP is appropriate for the nature and scale of the activity, and demonstrates that the regulated activity is to be carried out in manner by which the environmental impacts and environmental risks are reduced to a level that is:
 - i. as low as reasonably practicable; and
 - ii. acceptable.