

Approval notice and statement of reasons

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

Interest holder	Origin Energy B2 Pty Ltd ABN 42 105 431 525
Petroleum interest(s)	Exploration Permit 98 (EP98)
Environment management plan (EMP) title	Amungee NW-1H Environment Management Plan EP98 – Beetaloo Sub- Basin, NT
EMP document reference	Amungee NW-1H Environment Management Plan EP98 – Beetaloo Sub- Basin, NT, dated 14 May 2021 (ORI7-2)
Regulated activity	Extended Production Test on existing Amungee NW-1H well
Is the EMP a new plan submitted under reg 6 or a revision of a current plan submitted in accordance with reg 18?	This EMP is a revised plan submitted under reg 18. NTEPA2021/0078-001~0003
Was the regulated activity referred ¹ for consideration of whether environmental impact assessment was required?	No
Was an environmental approval ² required and by which assessment method?	N/A
Has an environmental approval ³ been issued for the regulate 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 Authority Certificate C2020/003
Date an EMP compliant with reg 8 was first submitted under reg 6	20 April 2021
Date within which the EMP was published for comment under reg 8A, if applicable	N/A
Date further information was required and submitted under reg 10, if applicable	11 May 2021 required 14 May 2021 submitted NTEPA2021/0078/001~0009
Date of resubmission notice under reg 11(2)(b), if applicable	N/A
Date EMP was resubmitted under reg 11(3), if applicable	N/A
Date a notice setting out a proposed timetable for consideration of the EMP was issued under reg 11(2A) if applicable	N/A
Proposed timetable given in notice under reg 11(2A) if applicable	N/A
Where provided under s29B of the <i>Northern Territory Environment Protection Authority Act 2012 (NT) (NT EPA Act)</i> , the dates the Northern Territory Environment Protection Authority (NT	Date of Minister's request for advice: 25 February 2019 Date of NT EPA Advice: 25 June 2021

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

² Ibid.

³ Ibid.

EPA) was requested to, and provided, advice on
EMP

Date of decision 15 / 07 / 2021

Decision maker



Signature

Hon Eva Dina Lawler MLA,
Minister for Environment

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1. The EMP is approved. reg 11(2)(a)
2. The approval is subject to the following conditions: reg 12(2)

Condition 1: The interest holder must submit to DEPWS:

- i. an updated timetable (including time-bound commitments) for the regulated activity prior to commencement of the activity and each month thereafter; and
- ii. weekly on-site reports indicating the status and progress of the Extended Production Test (EPT), freeboard available in wastewater tanks during operations, and monthly reports on progressive rehabilitation in progress/completed; and
- iii. written notification of any halt to the activity due to wet season conditions, within 24 hours of the halt; and
- iv. immediate written notification of any fires potentially threatening the activity from external or internal factors.

Condition 2: To support clause C.7.2 of the Code, all accidental releases of liquid contaminant must be recorded immediately in a spill register. The register must include:

- i. location, source and volume of the spill;
- ii. volume of impacted soil removed for appropriate disposal and the depth of any associated excavations, and
- iii. the corrective actions taken or proposed to be taken to prevent recurrence of an incident of a similar nature; and
- iv. update of a geospatial register of spills.

Condition 3: The interest holder must provide an annual report to DEPWS on its environmental performance, in accordance with item 11 (1)(b) in schedule 1 of the Petroleum (Environment) Regulations 2016. The first report must cover the 12 month period from the date of the approval, and be provided within three calendar months of the end of the reporting period. The annual environment performance report must align with the template prepared by DEPWS for this purpose and must include a signed declaration by the interest holder.

Condition 4: To support clause A.3.9 of the Code and the EMP rehabilitation plan, the interest holder is to provide an updated rehabilitation plan to DEPWS

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for approval, concurrent with submission of the annual environment performance report. The amended rehabilitation plan must include:

- i. auditable success criteria for rehabilitation and corrective actions in the event rehabilitation monitoring shows success criteria are not achieved
- ii. an annual summary of progressive rehabilitation outcomes, and
- iii. be accompanied by geospatial files of all surface disturbance areas, including those under rehabilitation.

Progressive rehabilitation of significantly disturbed land, not required for the ongoing conduct of future activities, must commence as soon as practicable but no longer than 12 months following cessation of the activity.

The rehabilitation plan must be implemented until a successful outcome is achieved and documented.

Condition 5: To support clause D.6.2 (b) of the Code, an emissions report must be provided to DEPWS by 30 September each year, which summarises actual greenhouse gas emissions reported under the Australian Government's National Greenhouse and Energy Reporting Act 2007 versus the predicted emissions in the EMP.⁴

⁴ Clause D.6.2(b) of the Code requires annual actual greenhouse gas emissions to be provided even where emissions are below the NGERs threshold of 25 ktCO₂-e for scope 1 and scope 2 emissions reporting.

2 Material considered

1. The following material has been taken into account in making this decision:
 - a. Amungee NW-1H EMP EP98, dated 14 May 2021.
 - b. The principles of ecologically sustainable development referenced in the *Environment Protection Act 2019* (NT).
 - 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 defined in regulation 4A.

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. The EMP meets the approval criterion in reg 9(1)(b) for the following reasons: reg 9(1)(b)
 - a. The nature of the regulated activity is as follows:
 - i. The technical works program in EP98 includes an extended production test (EPT) and associated activities commencing in mid-2021 and continuing over a five year period until 2026.
 - ii. Civil maintenance of the lease pad, camp pad and access track through erosion and sediment controls (ESC)
 - iii. On-site construction of wastewater tanks, wastewater bunding and stormwater retention pond
 - iv. No land clearing is proposed in the EMP
 - v. No drilling or hydraulic fracture stimulation (HFS) activities are proposed in the EMP. The hydraulic fracture stimulation in the original approved 2016 EMP was completed and is not considered a part of this revised plan.
 - vi. Operation of a temporary camp, offices and equipment storage areas
 - vii. Suspension and/or abandonment of the Amungee NW-1H well.
 - b. The scale of the regulated activity is as follows:
 - i. The total footprint for the regulated activity is 5.25 ha, consisting of a pre-existing lease pad, camp pad and access track. There is no additional land clearing proposed in the EMP.
 - ii. The estimated groundwater usage is 3.2 ML.
 - iii. Estimated diesel usage is 95 kL.
 - iv. Peak traffic movements for the regulated activity is 16 vehicles per day, particularly during mobilisation and demobilisation.
 - v. The interest holder has estimated greenhouse gas emissions of approximately 2,400 tonnes carbon dioxide equivalent (tCO₂-e), comprising approximately 2,145 tCO₂-e from flaring, 253 tCO₂-e from diesel combustion, and 7.64 tCO₂-e from fugitive emissions from wastewater.
 - vi. A rehabilitation plan (Appendix K) has been developed for the activity, to minimise the risk of site erosion and return the disturbed land to the original

conditions long term, in accordance with clause A.3.5 of the Code. The plan will be enacted after the EPT - if the interest holder decides to plug and decommission the NW-1H well. All disturbed areas will be rehabilitated, including the well pad and associated infrastructure. All surface infrastructure and waste will be removed from site and disposed of in accordance with the Regulations and specifically the *NT Waste Management and Pollution Control Act 1999* - including wastewater tanks, wastewater and ancillary equipment.

- c. The EMP contains an appropriate level of detail for the nature and scale of the activities proposed. The regulated activity is clearly described. The description of the existing environment is informed by adequate field surveys and desktop assessments. Uncertainty relating to environmental data is clearly stated. The identification of environmental impacts and risks is comprehensive and contains a sufficient level of detail to inform the assessment. The EMP provides detail on environmental outcomes and performance standards, implementation strategy, personnel, emergency response plan, stakeholder engagement, legislative requirements, recording, monitoring, reporting and notifications, to an appropriate level of quality and applicability.
 - d. Having regard to the above, the information in the EMP is appropriate for the nature and scale of the regulated activity to which it relates.
3. The EMP meets the approval criterion in reg 9(1)(c) for the following reasons: reg 9(1)(c)
- a. In making my decision, I have considered reg 5A, which requires that I give fundamental consideration to the principles of ecologically sustainable development (ESD), including the decision-making principle (s18 *Environment Protection Act 2019*), as follows:
 - i. The regulated activity is small scale 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. This EMP does not involve drilling and hydraulic fracturing; however the public was made aware that the EMP was under assessment via the DEPWS website.
 - iii. 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 decision-making process.
 - b. In making my decision, I have considered reg 5A, which requires that I give fundamental consideration to the principles of ESD, including the precautionary principle (s19 *Environment Protection Act 2019*) as follows:
 - i. The interest holder has proposed wet season contingencies and controls to mitigate potential erosion and sediment impacts associated with runoff from disturbed areas, off-site wastewater release, or transport of chemicals and wastewater. These controls have been assessed by NT Government agencies and deemed adequate.
 - ii. The precautionary principle has been considered in assessing the regulated activity. The regulated activity does not pose a threat of serious or irreversible environmental damage.
 - c. In making my decision, I have considered reg 5A, which requires that I give fundamental consideration to the principles of ESD, including the principle of evidence-based decision-making (s20 *Environment Protection Act 2019*) as follows:

- i. The EMP adequately assesses the environmental impacts and risks associated with the regulated activity and outlines appropriate avoidance and mitigation measures.
 - ii. The interest holder has undertaken stakeholder engagement with landholders and land managers, traditional owners and the Northern Land Council (NLC) and has consulted with NT Government agencies, in accordance with reg 7 and reg 9.
 - iii. A certified Erosion and Sediment Control Plan (ESCP) (Appendix H) contains design and management controls to mitigate potential erosion under sheet flow conditions. Elevation plans and layout for the Amungee NW-1H pad and access tracks are provided in the ESCP.
 - iv. A Bushfire Management Plan (BMP) has been included in the EMP (Appendix C). The BMP incorporates mitigation controls for bushfire management and ecological protection as used by other petroleum companies who have undertaken similar exploration activities in the Barkly Region.
 - v. The EMP identifies a number of spill mitigations including secondary containment for all chemical storage and handling areas; containment of hydrocarbons in dual-walled, self-bunded diesel tanks; and spill prevention and response procedures for hazardous spill prevention, monitoring, assessment, response and clean-up.
 - vi. Traffic impacts were assessed as being low and short in duration, reflecting the limited size and scope of the activity. The camp is located away from the Carpentaria Highway with most vehicle movements between the camp and drill sites. The peak traffic volume from the activity on the Carpentaria Highway is estimated at 16 vehicles per day during mobilisation, which is insignificant compared to the Level of Service of the highway (more than 700 vehicles/day). The interest holder has considered additional mitigation controls such as limiting drive in/drive out workers.
 - vii. The EMP has undergone review and assessment by NT Government agencies. Feedback from NT Government agencies was forwarded to the interest holder and has been adequately addressed, including amendments to the EMP.
 - 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 decision-making process.
- d. In making my decision, I have considered reg 5A, which requires that I give fundamental consideration to the principles of ESD, including the principle of intergenerational and intra-generational equity (s21 *Environment Protection Act 2019*) as follows:
- i. The environmental burdens of the regulated activity will not disproportionately affect particular stakeholders.
 - ii. The greenhouse gas (GHG) emissions from the activity is approximately 2,400 tCO₂-e, generated from flaring, diesel combustion and fugitive emissions from wastewater storage. This is approximately 0.01% of the 2019 NT estimated GHG emissions (20.6 million tCO₂-e).⁵

⁵ Source: DISER 2020. State Greenhouse Gas Inventory. <https://ageis.climatechange.gov.au/SGGI.aspx>.

- iii. I consider that cumulative emissions are not significant when considered in context of 2018-19 NT and Australian emissions, which were approximately 16.0 million tonnes and 537.4 million tonnes respectively.
 - iv. 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 activities.
 - v. The EMP commits the interest holder to progressive rehabilitation throughout the life of the activity which, combined with the Code requirements, is considered to have reduced the risk of soil erosion spread of weeds, accidental ignition of fire/bushfires and nuisance dust generation to a level that is as low as reasonably practical and acceptable.
 - vi. Interactions between the regulated activity and pastoral operations have been assessed; the interest holder is committed to regular engagement with pastoralists on the progress of activities.
 - vii. 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. In making my decision, I have considered reg 5A, which requires that I give fundamental consideration to the principles of ESD, including sustainable use (s22 *Environment Protection Act 2019*) of natural resources as follows:
- 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.*”⁶
 - ii. I also note the NT Government’s commitment to implementing all the recommendations of the HFI, including seeking to ensure that there is no net increase in life cycle GHG emitted in Australia from any onshore petroleum produced in the NT.
 - iii. The cumulative impact associated with current and future groundwater takes were addressed in the Water Extraction Licence (WEL) GRF 10285 statement of reason, which was assessed to be well within the sustainable yield of the Gum Ridge Formation (1,412,800 to 2,825,600 GL).
 - iv. Accordingly, I am satisfied that the concept of sustainable use of natural resources has been taken into account.
- f. In making my decision, I have considered reg 5A, which requires that I give fundamental consideration to the principles of ESD, including the conservation of biological diversity and ecological integrity (s23 *Environment Protection Act 2019*) 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.

⁶ Refer section 9.7.4 of the [Scientific Inquiry into Hydraulic Fracturing in the Northern Territory](#); p 233.

- ii. The Land Condition Assessment has been informed by previous baseline field surveys of the Amungee NW site. These surveys are supplemented by field assessments, a detailed desktop analysis and anecdotal evidence.
 - iii. No threatened vegetation communities were listed or likely to occur within the area of the activity.
 - iv. Several areas of conservation significance occur within the vicinity of the proposed civil and water bore project area. The closest is Bullwaddy Conservation Reserve: located 40 km ESE of the proposed activity area. The other area of conservation significance is Lake Woods: approximately 140 km south-west.
 - v. The EMP identifies 20 fauna species listed as threatened under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and/or the *Territory Parks and Wildlife Conservation Act 1976* (TPWC Act). An assessment of the likelihood of occurrence indicates four listed threatened species that are likely to occur based on habitat suitability and previous records. These include the Gouldian Finch *Erythrura gouldiae* (Endangered EPBC Act, Vulnerable TPWC Act); Grey Falcon *Falco hypoleucos* (Vulnerable TPWC Act); Crested Shrike-tit (northern) *Falcunculus frontatus whitei* (Vulnerable EPBC Act, Near Threatened TPWC Act); and Painted Honey Eater *Grantiella picta* (Vulnerable EPBC Act, Vulnerable TPWC Act).
 - vi. The DEPWS Flora and Fauna Division is satisfied that the regulated activity does not pose a significant risk to threatened species, important habitats or significant vegetation types. The mitigation controls identified in the EMP are adequate to reduce risks associated with potential impacts on biodiversity, such as trapping and drowning of fauna in storage tanks, vehicle strike, dust, erosion and spills to be as low as reasonably practicable.
 - vii. 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 process 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 constructing fire breaks around the Amungee NW lease and camp pads; maintaining a 45 m horizontal separation distance between the vertical flare and surrounding vegetation; placing ignition sources placed outside of the hazardous area; not conducting flaring during periods of total fire ban; six- monthly monitoring around infrastructure to detect the spread/introduction of weed species; and ensuring that all vehicles and equipment are cleaned and have valid weed hygiene declarations prior to accessing the site. 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.
 - viii. If carried out in accordance with the EMP, the risks of the regulated activity to the conservation of biological diversity are considered to be mitigated to an acceptable level.
- g. In making my decision, I have considered reg 5A, which requires that I give fundamental consideration to the principles of ESD, including the promotion of improved valuation, pricing and incentive mechanisms (s24 *Environment Protection Act 2019*) as follows:

- i. In accordance with the 'polluter pays principle':
 - a) The interest holder has committed to the remediation of impacts of the regulated activity, as is set out in the EMP.
 - b) If the interest holder fails to remediate the impacts, an environmental rehabilitation bond has been provided by the interest holder, which is considered to be adequate to cover the resulting costs.
 - c) As with any business undertaken in the NT, the interest holder is required to pay full life cycle costs for goods and services used.
 - ii. The EMP does not identify any new environmental problems. 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 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 has provided the following in relation to the regulated activity and the EMP:
- i. In accordance with my request under s29B of the NT EPA Act, the NT EPA reviewed the EMP for the regulated activity against the approval criteria in regulations 9(1)(b), 9(1)(c) and 9(2)(a) of the Regulations and other matters the NT EPA considered relevant, and has provided advice about the EMP. Relevantly:
 - a) The NT EPA recommended that should the EMP be approved, it be subject to five conditions. The NT EPA's recommendations have informed the conditions of this approval. All conditions are outlined in section 1(2) of this Approval Notice.
 - b) 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 it 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 the comments in 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 Section 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 Section 6 and Appendix I 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. The interest holder's risk assessment is applicable to activities in all seasons and the outcomes are reflected in the EMP that includes a weed management plan (Appendix G); bushfire management plan (Appendix C); spill management plan (Appendix F); wastewater management plan (Appendix D); methane emission management plan (Appendix E); rehabilitation plan (Appendix K); emergency response plan (Appendix N); stakeholder engagement (Appendix L), and erosion and sediment control plan (Appendix H). The EMP also includes the required

elements for the ongoing management of erosion and sediments in accordance with the erosion and sediment control plan. This is consistent with the requirements of the Code that allows for the regulated activities to occur in the wet season months when contingency planning is provided.

- m. The anticipated environmental impacts are appropriately identified in Section 6 and Appendix I of the EMP. Cumulative impacts have been identified and assessed to the extent possible (EMP Section 3.15). In EMPs for subsequent 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 activities. This includes reference to applicable Australian and international standards that have been adopted for regulated activities, 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, Clause 9 of the Regulations (Section 5 and Appendix L). Stakeholder engagement records demonstrate that issues raised about the environmental impacts of the proposed activity have been assessed and taken into consideration by the interest holder. The EMP provides a communication log (Appendix L) that 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 management of chemicals and waste, stakeholder engagement, social impacts and regulation and compliance. The EMP appropriately identifies the risks and potential impacts from the regulated activities 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 activities that I consider to be unacceptable.
- r. Overall, having regard to the above, I am satisfied that the EMP 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.