ntepa Northern Territory Environment Protection Authority

Onshore Petroleum Activity – NT EPA Advice

CENTRAL PETRLOEUM LTD (AS OPERATOR) (CTP7-5) – ENVIRONMENT MANAGEMENT PLAN (EMP) FOR THE MEREENIE DEVELOPMENT WELLS WM29/WM30, OL4

BACKGROUND

The Minister for Environment has formally requested under section 29B of the *Northern Territory Environment Protection Authority Act 2012* (NT EPA Act) that the Northern Territory Environment Protection Authority (NT EPA) provide advice on all Environment Management Plans (EMPs) received under the Petroleum (Environment) Regulations 2016 (the Regulations).

That advice must include a recommendation on whether the EMP should be approved or not, supported by a detailed justification that considers:

- whether the EMP is appropriate for the nature and scale of the regulated activity to which the EMP relates (regulation 9(1)(b))
- whether the EMP demonstrates 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 as low as reasonably practicable (ALARP) and acceptable (regulation 9(1)(c))
- the principles of ecologically sustainable development (regulation 2(a)), as set out in sections 18 to 24 of the *Environment Protection Act 2019* (NT)
- any relevant matters raised through the public submission process.

In providing that advice, the NT EPA Act provides that the NT EPA may also have regard to any other matters it considers relevant.

ACTIVITY

Subject	Description
Interest holder	Central Petroleum Ltd (Central) (as Operator) on behalf of; Central Petroleum Mereenie Pty Ltd NZOG Mereenie Pty Ltd Macquarie Mereenie Pty Ltd Cue Mereenie Pty Ltd
Petroleum interest	Production Licence OL4
Environment Management Plan (EMP) title	Mereenie Development Wells WM29/WM30, prepared by Central Petroleum Limited, dated 5 March 2024
EMP document reference	CTP7-5

Regulated activity	OL4 is located approximately 280 km west of Alice Springs within the Amadeus Basin in the Northern Territory. The regulated activity includes: • land clearing of up to 5.45 hectares (ha), • construction of wellsite access tracks, well pads, flowlines and vehicle turnarounds, • construction of wellsite infrastructure including one lined turkey nest, lined drilling sump, and clay lined flare pit at each wellsite, • drilling of two conventional petroleum development wells, one at each well site • establishment and operation of one temporary 50 person camp on a pre-cleared area, • flow testing and flaring for an equivalent four days (per well), • site demobilisation, • rehabilitation. No hydraulic fracturing is proposed in the EMP. Non-aqueous drilling muds will not be used.
Public consultation	Public consultation on the EMP was required under regulation 8A(1)(b) was undertaken from 18 September 2023 to 16 October 2023.

NT EPA ADVICE

1. Is the EMP appropriate for the nature and scale of the regulated activity (regulation 9(1)(b))

Information relating to the nature and scale of the regulated activity is provided in the EMP in a clear format. Table 1 provides an overview of the key components of the regulated activity and worst-case scenario values. The proposed work program is scheduled to take place in 2024, over a period of approximately 138 days.

Table 1: Key components of the proposed work program

Component/aspect	Proposed
AAPA certificate	C2023/105
Total area of OL4	123 km^2
Total area of surface disturbance	5.45 ha (WM29 – 2.39 ha, WM30 – 3.06 ha)
Access tracks	< 300 m, up to 8 m wide (~0.35 ha)
Number of well pads	2
Number of exploration wells	2 (1 well per well pad)
Groundwater extraction licence	GWEL M10001 (52.8 ML/annum)
Groundwater usage (total)	~ 3.65 ML (~ 4.6% of GWEL)
Groundwater extraction bores	5 (existing)
Gravel pits	No new gravel pits proposed - gravel to be sourced from approved gravel pits in the Mereenie Field
Flow testing duration	4 days per well

Component/aspect	Proposed
Camp	One temporary 50 person camp
Peak traffic movements	20 vehicles per day (~ 40% heavy vehicles)
Highest average traffic movements (outside of peak traffic)	10-15 vehicles per day
Volume of drilling mud and cuttings generated	~400 m^3 (per well)
Flare pit capacity	0.6 ML
Drilling sump capacity	1.6 ML including freeboard
Greenhouse gas emissions	~3,500 tCO_2-e

1.1 Activity Scope and Duration

The EMP proposes construction of two petroleum exploration wells, well sites, access tracks and undertaking ancillary activities on Production Licence 4 (OL4),that if successful, will be incorporated into production activities in the Mereenie Field. This title is located 280 km west of Alice Springs, on the Haasts Bluff Aboriginal Land Trust.

The EMP clearly describes the scope of the activity and duration. The regulated activity is expected to commence in 2024, over a period of 138 days. Drilling will be conducted for two new conventional petroleum development wells (WM29 & WM30) at two separate well sites. No hydraulic fracturing or stimulation activities are required or proposed as part of this well program. Well flow testing will be undertaken to determine if the wells will be completed with wellhead equipment and gathering flowline to be installed or decommissioned. Flaring of gas during drilling and well testing is estimated to be 4 days per well. Upon completion of the wells or decommissioning the wells will be transferred to the existing management process for the Mereenie production activities as per the Mereenie Field Environment Management Plan (CTP6-4).

The EMP estimates that a total of 5.45 ha of vegetation may be cleared. Land clearing comprises of two well sites (3.54 ha); construction of access tracks (0.35 ha); and the clearing of flowline corridors outside the well site (1.56 ha). Vegetation clearance has been minimised by locating the temporary camp on a pre-cleared area and positioning the well sites near existing access tracks and flowlines to minimise the disturbance from new flowlines and access tracks.

Drill cuttings produced for each well will be contained and managed in the sumps in accordance with the Code of Practice: Onshore Petroleum Activities in the Northern Territory (**the Code**). Sumps will be designed to accommodate for the anticipated wastewater and drill cuttings. Drilling waste material will either be evaporated in the drill cutting sump and buried on-site in accordance with clause C.4.1.2 of the Code or will be transported off-site. If offsite disposal is required it will be undertaken in accordance with the Northern Territory *Waste Management and Pollution Control Act* 1998 (**WMPC Act**). Drilling fluids collected in the sumps will be evaporated, if offsite disposal is required this will be undertaken by a licensed wastewater transporter and disposed of at an appropriately licensed facility.

Blooie lines leading to the flare pits will be used in this well program. Flare pits with a capacity of 0.6 ML will be constructed at each well site using a suitable clay liner in accordance with the Code and will be hydro-tested prior to use.

It is estimated that ~3.65 ML of groundwater will be extracted over the life of the EMP. Approximately 3 ML will be used for drilling purposes (1.5 ML per well). The impervious HDPE-lined

drilling sump is designed with a capacity 1.6 ML and maintain a minimum freeboard of 500 mm to accommodate a 1 in 1000 average recurrence interval (ARI) rainfall rate. The additional water will be used for civil activities and the temporary camp.

The temporary camp will be used to accommodate the workforce for both wells. The temporary camp will equipped with a fully self-contained sewage treatment plant equipped with an irrigation sprinkler system. The temporary camp will be managed in compliance with the relevant health requirements.

The potential impacts and risks of the regulated activity have been identified and controls are reflected in the relevant environmental outcomes, performance standards and measurement criteria that have been provided in the EMP. Mitigations outlined in the risk assessment are classified based on the hierarchy of controls and the level of certainty is indicated for each risk. Where appropriate the NT EPA has also provided advice relating to Ministerial conditions at the end of this advice.

1.2 General compliance with the Code

The EMP demonstrates how the interest holder will comply with the relevant requirements of the Code in undertaking the regulated activity. This includes selection of materials for well construction and related engineering controls contained in the Well Operations Management Plan (WOMP), approved by the Department of Industry, Tourism and Trade. The risk assessment provided in Appendix E of the EMP cross-references relevant sections of the Code that may apply to the mitigation and management measures. The EMP also provides the following plans, which are compliant with the Code:

- Wet Season Management Plan (section 7.1)
- Erosion and Sediment Control Plan (section 7.2)
- Weed Management Plan (section 7.3)
- Bushfire Management Plan (section 7.4)
- Rehabilitation Management Plan (section 7.5)
- Wastewater Management Plan (section 7.6)
- Spill Management Plan (section 7.7)
- Methane Emissions Management Plan (section 7.8)

The current EMP shows an adequate consideration of potential impacts and risks of the regulated activity and proposes appropriate controls, consistent with the Code.

The level of detail and quality of information provided in the EMP is sufficient to inform the evaluation and assessment of potential environmental impacts and risks, and meets the EMP approval criteria under Regulation 9(1)(b).

2. Principles of ecologically sustainable development (regulation 2(a))

2.1 Decision-making principle

The EMP adequately assesses the environmental impacts and risks associated with the regulated activity and outlines appropriate avoidance and mitigation measures to avoid long-term impacts to the environment.

The EMP includes additional mitigations associated with wet season activities, to mitigate potential impacts associated with erosion and sedimentation, off-site wastewater release, and transport of chemicals and wastewater. These controls have been assessed as adequate.

The interest holder has demonstrated ongoing stakeholder engagement in the EMP as required by the Regulations with directly affected stakeholders identified. The stakeholder engagement register did not identify that any concerns were raised as part of the stakeholder engagement process. The EMP was also made available for public comments (18/09/2023 – 16/10/2023). No concerns were raised during the public comment period.

2.2 Precautionary principle

The NT EPA considers there is a low threat of serious or irreversible damage from the regulated activity. The interest holder's investigations into the physical, biological and cultural environment provide a satisfactory scientific basis to assess potential environmental impacts and risks, and to identify measures to avoid or minimise those impacts and risks and address scientific uncertainty and avoid the threat of serious or irreversible damage.

The risk assessment clearly demonstrates consideration of risk events in the context of the environment in which the regulated activity is conducted and its particular values and sensitivities, and the spatial extent and duration of the potential impact. Uncertainty in relation to the environmental features was assessed, with no areas of environmental uncertainty identified.

The potential impacts to listed fauna and flora and their habitats are well understood and the regulated activity located near to existing tracks to minimise further clearing. The location of the proposed temporary camp has been moved to avoid land clearing impacts flora, fauna and cultural heritage as the temporary camp will be located on an existing cleared area.

The risks of conducting the activity over the wet season are well understood, and the EMP demonstrates adherence to the Code that establishes best practice management measures for operations, as set out in the risk assessment, Wastewater Management Plan and Spill Management Plan. The EMP includes an assessment of impacts and risks for wet season operations and management strategies, including measures such as halting operations if there is significant rainfall (>10 mm in 24 hrs) or flooding; regular inspection of erosion and sediment control measures and access roads; revisiting the risk assessment following shut down due to flooding or inundation events to ensure controls are still appropriate to manage risks to (ALARP).

The EMP outlines how the minimum freeboard was calculated for this regulated activity. The predicted 1 in 1000 year average recurrence interval (ARI) for Mereenie over a 90-day period was informed by historical data from Watarrka (BOM Site 015652). The ARI estimate was calculated as 500 mm. A conservative evaporation rate of 10% occurring over a 90-day period is 340 mm. In the event that a 90-day 1 in 1000 year ARI coincided with a low evaporation rates a freeboard of 160 mm would be required. Considering the potential risk of overspray from wavelets during high wind periods, a 500 mm freeboard will be maintained throughout the operation. A precautionary approach to freeboard management is considered to manage the risks of overtopping of wastewater storage structures which are not enclosed.

The EMP aligns with the requirements of the Code, including tracking of water used and wastewater generation and movement. The NT EPA has assessed the potential for spills from chemicals and hazardous material.

Leachability testing of drill cuttings will be undertaken in accordance with the Australian Standard Leaching Procedure by a NATA accredited laboratory, as required by the Code. The results of this testing will inform the potential disposal options for drill cuttings. The interest holder will engage an EPA-accredited auditor (as defined by section C.4.1.2(f) of the Code) to obtain certification that the drill cuttings is of acceptable quality for disposal to land by the proposed disposal method, and that environmental harm will not result from the proposed disposal. If certification cannot be obtained, the

material will be removed from site for disposal at a licenced facility. This measure will ensure that, regardless of the treatment option impacts from drill cuttings are minimised to a level that is ALARP.

Whilst the interest holder commits to a yearly monitoring regime to identify rehabilitation success and undertake corrective actions, the NT EPA recommends a Ministerial condition that requires provisions of an annual progressive rehabilitation report as a precautionary measure.

The NT EPA has firstly formed the view that the precautionary principle has been considered by the interest holder in assessing the regulated activity and secondly that the precautionary principle has not been triggered due to the low threat of serious or irreversible damage to the existing environment and the presence of a satisfactory scientific basis to assess potential impacts and risks. In addition, the existing environmental monitoring commitments contained in the EMP are compliant with the Code and provide measureable performance measures to ensure that the environmental outcomes are met.

2.3 Principle of evidence-based decision-making

The environmental considerations of the project footprint were informed by ecological assessments in the environment surrounding proposed activity in addition to baseline desktop analysis. The interest holder's investigations have been supported by the information gained by Central Petroleum Limited during its operation of the Mereenie Field since 2015 and the Mereenie Field production history which dates back to 1984.

The EMP demonstrates an adequate understanding of the environment in which the regulated activity will be undertaken, and considers all relevant aspects of the environment that have potential to be affected. The EMP proposes land clearing activities and drilling activities to occur during the wet season. The EMP has a particular focus on prevention of erosion and sediment control measures. The site has been designed with consideration of risk for flooding, protection of natural and cultural values, water and erosion and sedimentation.

The risk assessment demonstrates consideration of risk events in the context of the environment in which the regulated activity is to be conducted and its particular values and sensitivities, and the spatial extent and duration of the potential impact. The EMP aligns with the requirements of the Code, including tracking water use, wastewater generation and wastewater movement. The NT EPA has assessed the potential for spills and concluded that the proposed management measures are satisfactory. The management measures described in the EMP will meet the Code requirements for chemical storage including secondary containment have been assessed as satisfactory. A key mitigation in relation to secondary containment of wastewater generated from workovers is the lining of all flare pits with impervious clay and hydro-testing, prior to wastewater from a blooie line entering the flare pit. Other measures include the use of engineered earth bunds, storage of chemicals in designated storage areas with appropriate secondary containment systems, minimum drill sump freeboards requirements, spill mats and spill kits. As a precautionary step the NT EPA recommends a Ministerial condition for this activity relating to the recording of spills.

The proposed environmental outcomes are likely to be achieved based on the best available information on the nature and scale of the activity, and the environment in which the regulated activity will be conducted. The studies undertaken by the interest holder to inform the EMP affords the interest holder with a detailed and reliable knowledge of the potential environmental impacts and risks and the most appropriate measures for mitigation of those impacts and risks.

The NT EPA is of the view that the evidence-based decision-making principle has been considered in assessing the regulated activity and that in the circumstances, decisions can be based on best available evidence that is relevant and reliable.

2.4 Principle of intergenerational and intra-generational equity

The potential environmental impacts and risks associated with the regulated activity can be adequately avoided or managed through the management measures and ongoing monitoring programs proposed in the EMP.

Protection of cultural interests is achieved through compliance with the requirements of an Authority Certificate (C2023/105) issued by the Aboriginal Areas Protection Authority under the *Northern Territory Aboriginal Sacred Sites Act 1989* (NT), which covers activities in the EMP relevant to this NT EPA advice. An archaeological assessment has been undertaken to avoid archaeological heritage impacts. The NT Heritage Branch was contacted to confirm the absence of non-publicly listed Aboriginal heritage within the disturbance footprint. Based on the information available, it is likely that the activities detailed in the EMP will avoid archaeological heritage impacts. The EMP also contains detail regarding unexpected finds procedures should this occur.

The water required to support this drilling program will be taken under the Mereenie Water Extraction Licence M10001 (annual volume of 52.8 ML) from existing groundwater bores that are metered. This regulated activity is anticipated to require approximately 3.65 ML or 4.6% of the permitted water extraction per annum. The Wastewater Management Plan aligns with the waste management hierarchy in the Code.

Total predicted greenhouse gas (GHG) emissions generated by the regulated activity are approximately 3,500 tonnes of CO_2 equivalent (tCO_2^{-e}), assuming every well is successful and accounting for up to 4 days of testing. The project does not exceed the threshold for becoming a large emitter under the Large Emitter Policy, and no offsetting regime is required under this EMP for this exploration activity.

The NT EPA considers that environmental values will be protected in the short and long term from the activities outlined in the EMP and that the health, diversity and productivity of the environment will be maintained for the benefit of future generations.

2.5 Principle of sustainable use

The Mereenie Field has been in production since 1984. The field produces oil, condensate, and gas, with all oil and condensate produced onsite being trucked interstate prior to export. Gas produced from the field is processed onsite for supply to commercial markets in the NT and elsewhere. The use of existing infrastructure including gas gathering networks access tracks reduces the disturbance footprint required for this regulated activity.

Cumulative impacts of groundwater extraction have been assessed. Under the *Water Act 1992* (NT) the interest holder has been granted a groundwater extraction licence (GWEL M10001). The approved licence permits a maximum water entitlement of 52.8 ML per annum from the Mereenie Sandstone aquifer. The anticipated water demand for this regulated activity is 3.65 ML, which is approximately 4.6% of Central Petroleum Mereenie Pty Ltd's annual maximum water entitlement. Existing licensed groundwater bores will be used to meet the drilling water requirements. Water will be managed to minimise environmental risks and impacts.

To support the NT Government's commitment net zero greenhouse gas emissions by 2050, the NT EPA recommends a Ministerial condition that requires the interest holder to provide an annual emission report to the Department that summarises greenhouse gas emissions reported under the Australian Government's *National Greenhouse and Energy Reporting Act 2007* versus the predicted emissions in the EMP.

The NT EPA is of the view that the sustainable use principle has been considered in assessing the regulated activity.

2.6 Principle of conservation of biological diversity and ecological integrity

The proposed location for the regulated activity does not include groundwater dependent ecosystems; nor is it within proximity to a declared ecological community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The regulated activity poses a low risk to the ecosystem within the MacDonnell Ranges bioregion. Given the relatively small area of impact (approximately 5.45 ha), and the very large area of similar habitat within the region, the regulated activity does not pose a significant risk to any regional populations of threatened species. Due to the management strategies outlined in the EMP and the relatively small area of impact, it is unlikely that the regulated activity will pose a risk to the identified threatened species.

The DEPWS Flora and Fauna Division is satisfied that the risk to biodiversity from the regulated activity is low. Flora and Fauna Division considers that the activity is relatively small and areas to be disturbed are unlikely to support important populations of threatened species or critical habitat for biodiversity.

The project footprint is not located within any Sites of Conservation Significance, it is however located within Sites of Botanical Significance (SoBS). The WM29 well proposed to be located with the Mereenie SoBS and the WM30 well will be located in the Laycock's Sandplain SoBS. Impacts to the SoBSs have been mitigated through site selection taking into consideration the ecological assessments.

Avoidance and mitigation measures identified in the EMP are adequate to reduce risks to ALARP and acceptable in relation to potential impacts on biodiversity.

The EMP outlines measures to minimise impacts on affected environmental values, including the management of threatening processes such as erosion, weeds and fire through implementation of existing management plans, monitoring and corrective actions. The proposed management plans are consistent with the requirements of the Code, the *NT Land Clearing Guidelines*, and the *Weed Management Planning Guideline: Onshore Petroleum Projects* and Commonwealth threat abatement plans and advice. Specific precautions to ensure interaction with wildlife is avoided are included in the EMP. These include: inspections for fauna presence, speed limits on access roads, fencing at wellsite area including drilling sump, flare pit and water storages, and daily checks of infrastructure.

The NT EPA considers that implementation of, and compliance with, the EMP will ensure the conservation of biological diversity and ecological integrity is not impacted by the regulated activity.

2.7 Principle of improved valuation, pricing and incentive mechanisms

The interest holder is required to prevent, manage, mitigate and make good any contamination or pollution arising from the regulated activity, including contamination of soils, groundwater and surface waters through accidental spills.

All stages of the regulated activity, including disposal of waste, commercial purchase of groundwater, and progressive rehabilitation of all disturbed areas to an acceptable standard, are at the cost of the interest holder. The interest holder is required to provide an adequate environmental rehabilitation security bond to indemnify the NT Government. This is based on an assessment by the Department of the estimated rehabilitation cost submitted by the interest holder.

The NT EPA is of the view the principle of improved valuation, pricing and incentive mechanisms has been considered in assessing the regulated activity and is based on the interest holder bearing any environmental costs for the regulated activity.

3. Environmental impacts and risks reduced to a level that is as low as reasonably practicable (ALARP) and acceptable (regulation 9(1)(c))

The interest holder commits to identified measures to avoid or minimise impacts on environmental values, informed by a baseline studies, surveys and data derived from previous operations in the area. The EMP demonstrates a systematic identification and assessment of environmental impacts and risks associated with the regulated activity. The key potential environmental impacts and risks considered in the EMP are:

- impacts to groundwater (well failure, cross flow of water and/or gas)
- loss of long term soil productivity and viability (soil compaction)
- reduction in the productivity of the land (weed introduction or spread)
- increased air pollutants and greenhouse gas emissions (gas release and diesel combustion)
- impacts to flora and fauna and or their habitat (vegetation clearance, weeds, bushfires)
- impacts to culturally sensitive areas (unauthorised disturbance, disturbance of new finds or sites).

The EMP demonstrates why the controls to be implemented are considered ALARP and acceptable. Of the 43 environmental risks identified by the interest holder, 31 are considered 'low' risk, and therefore are ALARP and acceptable. The remaining 12 risks are considered 'medium' and the interest holder has included mitigations that can/will be implemented such that the risks will therefore be managed at levels that are ALARP and acceptable. Specifically:

1. *Decline in water levels due to crossflow of groundwater to another formation caused by wellbore failure*: construction of each well is to be undertaken in accordance with the Code. The residual risk ranking is based on the likelihood being considered 'remote', but the consequence of the event occurring being considered to be 'serious'.

2. *Local contamination of utilised aquifer leading to impaired capacity of water bores caused by cross flow of water and/or gas from deeper formations*: construction of each well is to be undertaken in accordance with the Code and an approved WOMP. Wells will be operated in accordance with the WOMP. The residual risk ranking is based on the likelihood being considered 'remote', but the consequence of the event occurring being considered to be 'serious'.

3. *Contamination of aquifers impacts existing groundwater users and environmental dependencies caused by uncontrolled discharge of formation water or hydrocarbons to groundwater due to well integrity failure*: construction of each well is to be undertaken in accordance with the Code and an approved WOMP. Multiple barriers will be installed across aquifers to ensure they are isolated. The residual risk ranking is based on the likelihood being considered 'remote', but the consequence of the event occurring being considered to be 'serious'.

4. *Loss in long term soil productivity and viability through soil compaction*: compacted areas are to be deep ripped to encourage infiltration and water retention. The rehabilitation plan requires that land is returned to its pre-disturbance land use capability. The residual risk ranking is based on the likelihood being considered 'remote', but the consequence of the event occurring being considered to be 'serious'.

5. *Increase in air pollutants in areas surrounding activities caused by emissions from gas release and diesel combustion*: no planned venting is proposed to occur, pipelines to be pressure tested

prior to operation and monitored continuously during use. The residual risk ranking is based on the likelihood being considered 'likely', but the consequence of the event occurring being considered to be 'minor'.

6. *Significant decrease in population of conservation significant flora / fauna habitat caused by clearing of vegetation*: baseline assessments to confirm locations flora and fauna habitat. Disturbance locations are designed to avoid where possible land types that support conservation significant flora and fauna habitat. The residual risk ranking is based on the likelihood being considered 'remote', but the consequence of the event occurring being considered to be 'serious'.

7. *Significant decrease in population of conservation significant flora / fauna habitat caused introduction and or spread of weeds*: all vehicles, equipment and machinery from known weed infested areas are to be cleaned and inspected for weeds prior to attending a site. The weed management plan has designed to prevent the spread weeds present onsite and introduction of new weeds. The residual risk ranking is based on the likelihood being considered 'remote', but the consequence of the event occurring being considered to be 'serious'.

8. *Significant decrease in population of conservation significant flora / fauna habitat caused by bushfire as a result of accidental ignition at site*: a horizontal, in-ground flare system will be used in addition to the implementation of the bushfire management plan. The residual risk ranking is based on the likelihood being considered 'remote', but the consequence of the event occurring being considered to be 'serious'.

9. *Reduction in conservation significant fauna species caused by bushfire as a result of accidental ignition at site*: a horizontal, in-ground flare system will be used in addition to the implementation of the bushfire management plan. The residual risk ranking is based on the likelihood being considered 'remote', but the consequence of the event occurring being considered to be 'serious'.

10. *Unauthorised disturbance to sacred sites or culturally sensitive sites caused by works undertaken within exclusion areas or encountering sites that were not previously identified during baseline assessments*: exclusion areas will be established around known sites and an Aboriginal Object Find/Stop Work Procedure for unexpected finds will be implemented. The residual risk ranking is based on the likelihood being considered 'remote', but the consequence of the event occurring being considered to be 'serious'.

11. *Reduction in the productivity of the land caused by introduction and spread of weeds and disturbed land not being returned to pre-disturbance land use capability*: all vehicles, equipment and machinery from known weed infested areas are to be cleaned and inspected for weeds prior to attending a site. The weed management plan has designed to prevent the spread of weeds present onsite and introduction of new weeds. A rehabilitation plan has been prepared and designed to ensure that at the completion of activities the land is returned to its pre-disturbance land use capability. The residual risk ranking is based on the likelihood being considered 'remote', but the consequence of the event occurring being considered to be 'serious'.

12. *Greenhouse gas emissions from the activity caused by combustion of diesel during activities*: all diesel used onsite will meet the Federal Government's fuel quality standards and all equipment and machinery maintained in accordance with manufacturer specifications. The residual risk ranking is based on the likelihood being considered 'likely', but the consequence of the event occurring being considered to be 'minor'.

The mitigation measures provided in the EMP are appropriate to the nature and scale of the activity, and if implemented, the residual risk to the environment is likely to be acceptable.

The EMP also considers cumulative impacts to groundwater, flora and fauna, greenhouse gases, traffic and social and concludes these have been managed to ALARP and acceptable levels.

The NT EPA considers that all reasonably practicable measures will be used to control the environmental impacts and risks, considering the level of consequence and the resources needed to mitigate them, and the nature, scale and location of the regulated activity. The NT EPA considers that the environmental impacts and risks will be reduced to a level that is ALARP and acceptable, considering the sensitivity of the local environment, relevant standards and compliance with the Code.

4. Summary of monitoring and inspections

Table 2 provides a summary of the monitoring and inspections committed to in the EMP. These programs are used to meet prescribed requirements and to confirm the effectiveness of the mitigations committed to.

Table 2: Monitoring and inspections relevant to the scope of the regulated activity

Record(s) / Report(s)		Frequency
BIODIVERISTY		
Record(s):	• Incident records • Environmental sensitivity maps • Weed declaration certificates • Induction and register of participants • Fauna interactions • Well site area monitoring and inspections • Geospatial records of clearing undertaken • Annual Environmental Performance Report (AEPR)	As event occurs for all items however, well site area monitoring and inspections are undertaken daily during drilling activities. Clearing geospatial records to be submitted to the Minister annually. The AEPR is to be submitted annually to DITT / DEPWS
	• Weed surveys • Fire break monitoring • Fire fuel load/mapping review	Annually
Report(s):	• Rehabilitation report	Annually
LAND		
Record(s):	• Inspection records • Weather records	• ESC checked daily during drilling and after significant rain events (>10 mm in 24 hrs.). • Daily inspection of weather, works areas during drilling operation for clearing and locations of machinery / vehicles. • Inductions undertaken as required for new personnel.
	• Incident records • Soil contamination assessment	As event occurs / as soon as the operator becomes aware of the incident.
	Permit to work records	As event occurs
Report(s):	Rehabilitation report	Annually
	Notification of commencement of drilling	Prior to commencement of drilling activities, the Minister, occupier of the land and owner of the land on which the activity is to be carried out is to be notified.

SURFACEWATER		
Record(s):	Daily production reports	• Daily during drilling • ESC to be inspected daily during operational periods and after significant rain events (>10mm in 24 hrs.)
	Inspection records	
	• Incident records • Water sampling	As event occurs / as soon as the operator becomes aware of the incident
	Chemical register	Daily during drilling
GROUNDWATER		
Record(s):	• Groundwater monitoring • Incident records • Inspection records • Calibration of in situ water meter	• Bi-annual (May and October) • Quarterly • Daily • Prior to biannual sampling
	Incident records	As event occurs / as soon as the operator becomes aware of the incident
Report(s):	Well barrier integrity verification (WBIV) reports	Annually or as required by DITT
	Groundwater monitoring report (as part of Mereenie Field EMP)	Annually
	Groundwater extraction volumes as per extraction licence M10001 (as part of Mereenie Field EMP)	Quarterly
	Well monitoring, surveillance and reporting as per DITT approved WOMPs	Annually or as required by DITT
AIR AND NOISE		
Record(s):	Inspection records	• Daily during drilling. • Hydrotesting to be undertaken prior to commissioning of assets (as required)
	Process/metering records	• As event occurs / as soon as the operator becomes aware of the incident • Technical considerations preventing the use of the recovered gas to be reported annually • NPI reporting to be undertaken annually • NGERs reporting to be undertaken annually
	Incident records	As event occurs / as soon as the operator becomes aware of the incident
	Calibration records	Prior to the use of metering equipment
	Drilling and completions (wells)	Daily during drilling
	Well head pressure	Monthly
	Pressure monitoring of flowlines and MASP	Continuous

Report(s):	• Leak detection monitoring program • National Greenhouse and Energy Reporting Scheme (NGERs) • Supply of NGERs outcomes to the Northern Territory Government	Annually (supply of NGERs outcomes to NT Government as requested)
HAZARDS		
Record(s):	• JHA records • NORMS testing records	Daily during drilling
	Incident records	• Recordable incidents to be collated and reported quarterly • Reportable incidents to be raised within 2 hours of the interest holder becoming aware of the incident (further reporting requirements after initial notification are detailed in the Spill Management Plan)
	Inspection records	• Secondary containment of chemical, waste, fuel and oil storage areas to be (when in use) inspected weekly unless it is being operated through the wet season, during which time it will be monitored daily • Daily inspections of drilling sumps and flarepits – monitoring freeboard daily • All other parameters - daily during drilling
	Waste classification	• Quantity and quality of cuttings generated • Details of licensed waste transporters (if transported offsite for disposal)
	Waste tracking records	Monthly
	Inspect firebreaks / review of fire management plan	Annually
	Inspect fire equipment functionality	Bi-annually (prior to high fire danger season)
	General weather conditions	Daily during toolbox and JHAs
	Inspect Northern Australia Fire Information (NAFI) fire tracking maps where a high fire danger is present	Daily during high fire danger
	Wastewater volumes generated	• Quantity and quality – Prior to disposal (regardless of whether on site or off site) • Spills involving wastewater will be managed as event occurs / as soon as the operator becomes aware of the incident • Secondary containment to be (when in use) inspected weekly unless it is being operated through the wet season, during which time it will be monitored daily
	Drilling chemicals	Daily during drilling
Report(s):	Wastewater tracking documentation	Annually reported to Minister
HERITAGE		

Record(s):	• Incident records • Induction (Heritage and Cultural Awareness)	• As the event occurs / as soon as the operator becomes aware of the incident • As required for the induction of new personnel
	Communication with CLC	As required or as event occurs / as soon as the operator becomes aware of the incident
Report(s):	Notify AAPA./CLC of approval and permit breaches as per conditions	As event occurs / as soon as the operator becomes aware of the incident
	Review of registers and records	Annually
COMMUNITY		
Record(s):	Waste tracking records	Monthly
	Waste storage	Weekly
	Stakeholder communication log	As event occurs / as soon as the operator becomes aware of the incident
	Traffic changes	Weekly

5. Relevant matters raised through public submissions

Public consultation on the EMP was required under regulation 8A. The EMP was made available for public comment for 28 days from the 18 September 2023 to 16 October 2023. No public submissions were received.

6. Considerations under the *Environment Protection Act 2019*

In accordance with section 48 of the Environment Protection Act 2019 (NT) (EP Act), a proponent must refer to the NT EPA, a proposed action (section 5) that has the potential to have a significant impact (sections 10 and 11) on the environment. Alternatively, in accordance with section 53(1) of the EP Act the NT EPA may provide a written notice (a call-in notice) requesting the proponent to refer the action within a specified timeframe, if it is believed on reasonable grounds that a proponent is taking an action that should be referred to the NT EPA for assessment.

The NT EPA has had regard to sections 10 and 11 of the EP Act and its published guidance, *Referring a Proposal to the NT EPA*, and has determined that:

a) The industry type or activity proposed is not inherently hazardous, nor is it likely to give rise to multiple or unacceptable risks or impacts on the environment, with the proposed controls implemented.
b) The location of the regulated activity has avoided impacts to sensitive environmental values and receptors to the greatest extent possible and where unable to be avoided, any potential impacts have been mitigated so they would not be significant.
c) At no stage of its lifecycle, including post closure, would the activity, on its own or cumulatively with other activities, have a significant impact on the environment.

On this basis, the NT EPA has elected to not require the proponent refer the action.

7. Other relevant matters

The proposed commencement of the regulated activity is for April 2024, the EMP indicated that activities excluding rehabilitation are anticipated to take 138 days. The NT EPA recommends the interest holder be required by Ministerial condition to submit an updated timetable at regular intervals, as well as regular updates during operational periods.

CONCLUSION

The NT EPA considers that, subject to the consideration of the recommended EMP approval conditions, the EMP:

- is appropriate for the nature and scale of the regulated activity
- demonstrates that the regulated activity can be carried out in a manner that potential environmental impacts and environmental risks of the activity will be reduced to a level that is ALARP and acceptable.

In providing this advice the NT EPA has considered the principles of ecologically sustainable development.

RECOMMENDATIONS

The NT EPA recommends that should the EMP for Central Petroleum Limited on behalf of Central Petroleum Mereenie Pty Ltd, NZOG Mereenie Pty Ltd, Macquarie Mereenie Pty Ltd, Cue Mereenie Pty Ltd be approved, the Minister considers approval conditions to achieve the following outcomes:

1. Certainty of the timing of the regulated activity through provisions of an updated timetable prior to commencement, weekly activity reports during conduct of activities other than rehabilitation.
2. Certainty as to the extent and location of clearing through provisions of spatial data for areas cleared.
3. Certainty as to the interest holder's timing of annual submissions and compliance with the approved EMP through submission of an annual performance report and a rehabilitation progress report to DEPWS to demonstrate the interest holder has met the environmental outcomes and complied with the requirements set out in the Regulations, the Code, the Ministerial conditions and the EMP.
4. Certainty as to the extent of greenhouse gas emissions through provisions of an annual emissions report to DEPWS that summarises greenhouse gas emissions under the Australian Government's *National Greenhouse and Energy Reporting Act 2007* versus the predicted emissions in the EMP, with actual emissions to be verified by an independent auditor registered by the Clean Energy Regulator.
5. Certainty that the land is free from contamination and can meet rehabilitation requirements through recording of all spills in an internal register that includes location, source and volume of the spill and corrective actions undertaken.
6. Certainty that flare pits can contain wastewater, through provision of evidence of lining with clay materials and hydrotested outcomes prior to the introduction of any wastewater to a flare pit.
7. Certainty as to the ongoing integrity of the impervious base of flare pits through inspection and provision of inspection records.

PAUL VOGEL AM

CHAIRMAN

NORTHERN TERRITORY ENVIRONMENT PROTECTION AUTHORITY

15 MARCH 2024