Change Notice – Regulation 22

Interest Holder	Central Petroleum Limited	EMP Title	MRN Oil and Gas Field	Unique EMP ID No.	-	Change No.	1	Date	15 July 2021
Brief Description	The Mereenie field EMP was approved by the minister on 14 March 2018. The plan highlights the risk of an 'overflow of interceptor and / or evaporation pond due to heavy rainfall events. Within the plan there are multiple references maintaining sufficient freeboard however there is one reference in risk assessment section 7.6.1 which highlights a mitigation measure that a '1.5m of freeboard is maintained through regular inspection'. Central have been successfully managing the interceptor and evaporation ponds across the field using a freeboard limit of 0.5m which provides sufficient freeboard to contain the volume of the 1:1000 ARI event equivalent to a 0.1% AEP event for a 72-hour rainfall event. Rainfall modelling undertaken for Mereenie as part of the approved NT Drilling Campaign EMP (CTP3-4) section 7.4.6 'rainfall characteristics' (Appendix A) highlights the 1:1000 ARI event equivalent to a 0.1% AEP event for a 72-hour rainfall event is 0.47m. Thus section also includes information regarding method of calculation, etc. Therefore, we believe the 1.5m freeboard figure in the risk assessment was a typo, we request that the freeboard limit be amended to reflect the 0.5m figure. This freeboard figure would then be consistent with other approved EMPs for drilling actives in the Mereenie field.								
Geospatial Files Included?	N/A								

Does the change in existing environment result in a new, or increased, potential or actual environmental impact or risk?	If a NEW potential or actual environmental impact or risk, is it provided for in the approved EMP?	If an INCREASE in an existing potential or actual environmental impact or risk, is it provided for in the approved EMP?	Does the change in the existing environment require additional mitigation measures to be included?	Has additional stakeholder engagement been conducted?	Does it require additional environmental performance standards and measurement criteria?	Does it affect compliance with Sacred Site Authority Certificates?	Does it affect current rehabilitation, weed, fire, wastewater, erosion and sediment control, spill or emergency response plans?	Will the environmental outcome continue to be achieved and will the impacts and risks be managed to ALARP and acceptable?
Note 1.	Not applicable	Not applicable	No	Note 2.	Note 3.	No	Note 4.	Note 5.

Current EMP Text	Amended EMP Text
Table 7-4 Detailed environmental risk assessment for general environmental and routine operations conducted at MRN - Ensure 1.5m of freeboard is maintained through regular inspection.	**Table 7-4 Detailed environmental risk assessment for general environmental and routine operations conducted at MRN -** Ensure 0.5m of freeboard is maintained through regular inspection.

Note1: No increased risk. The Code of Practice requires an estimate of the 1 in 1000 ARI rainfall rate using Australian Rainfall methodologies (Australian Rainfall and Runoff, 2019) for the period during the highest risk of overtopping. To address this requirement, the ponds have been designed and minimum freeboard limits established (0.5m) to contain the volume of the 1:1000 ARI 72hr rainfall event which at Mereenie is 0.47m. Therefore, amending the freeboard from 1.5m to 0.5m does not pose any additional risk.

Note 2: No, not necessary to support this modification.

Note 3: No additional environmental performance standards and measurement criteria are required. A review of the existing standards and criteria in the EMP identified that all elements will be able to be met and will not be impacted by the proposed change.

Note 4: No, it does not affect current plans in place:

- Rehabilitation – n/a
- Weeds – n/a
- Fire – n/a
- Wastewater – management plans and controls are valid for these activities
- Erosion and sediment control – n/a
- Spill – spill response plans and controls are valid for these activities
- Emergency response – management plans and controls are valid, and plans address risks associated with over toping

Note 5: The environmental outcomes outlined in the EMP associated with water management will continue to be achieved. In addition, all of the impacts and risks will be managed to ALARP. An assessment has been undertaken and the risk has been rated as ‘acceptable’. CP’s has revalidated the risk assessment in the EMP related to water management and determined that there is no increased risk as a result of the activities.

ENVIRONMENT MANAGEMENT PLAN

2020-21 Northern Territory Drilling Campaign

November 2020

Review record

Date	Reason for issue	Version	Author	Approver
24 July 2020	Submission to Department of Environment, Parks and Water Security (DEPWS)	CTP3-1	C. Lambert	D. Lockhart
28 August 2020	Updated and resubmitted to DEPWS	CTP3-2	C. Lambert	D. Lockhart
26 October 2020	Updated and resubmitted to DEPWS	CTP3-3	C. Lambert	D. Lockhart
16 November 2020	Updated and resubmitted to DEPWS	CTP3-4	C. Lambert	D. Lockhart

DISCLAIMER

This is a Central Petroleum Limited (CP) document and it has been prepared using the skill and care expected from professional scientists to provide factual and technical information and reasonable solutions to identified risks.

DOCUMENT OWNERSHIP AND REVISION

CP is the custodian of this Environmental Management Plan (EMP) and has overall responsibility for its implementation, compliance and revision.

CP will ensure that this EMP is reviewed and if necessary revised:

- When there is a significant change to normal operations for the activities covered by this EMP
- When there is a significant change to the regulatory framework within which the activities under this EMP are carried out
- When recommendations or comments from the Government approval process are made
- If there is a new environmental impact or environmental risk not provided for in the current plan for the activity or an increase, not provided for in the current plan for the activity
- In the event an incident causing significant environmental harm or loss occurs
- Five yearly after acceptance, unless superseded by another plan.

This document shall not be issued and/or revised without the express approval of the CP General Manager of Exploration (with respect to exploration activities under this EMP) and the Chief Operating Officer (with respect to development activities under this EMP).

DOCUMENT DETAILS

Document Number:	1000-630-PLN-0003-CTP3-4
Name of Document:	2020-21 Northern Territory Drilling Campaign: Environmental Management Plan
Authors:	Enviro-Value Pty Ltd.
Client:	Central Petroleum
Name of Project:	2020-21 Northern Territory Drilling Campaign

7.4.6 Rainfall Characteristics

The Code of Practice requires an estimate of the 1 in 1000 ARI rainfall rate [41]using Australian Rainfall methodologies (Australian Rainfall and Runoff, 2019) for the critical period during results in the highest risk of overtopping.

To address this requirement, the sumps will be designed to contain the volume of the 1:1000 ARI 72hr rainfall event. The 1 in 1000 (0.1%) year AEP for a 72 hour rainfall event for the proposed drilling locations is displayed in Table 7-3 . The inlet structure to the sump will be designed to convey the 1:1000 ARI 1hr event to allow intense peak discharge to enter the structure without overflow.

Table 7-3 The 1 in 1000 (0.1%) Year AEP for Rainfall at the Proposed Locations

Location	0.1% AEP Rainfall	Rainfall (mm)
Dingo	72hr	473
Orange		482
Mereenie		470
Palm Valley		453
Mamlambo		447

The 1:1000 ARI event has a 0.1% chance of occurring or being exceeded in any one year. Therefore, the annual risk of discharge from the sump for the design event is 0.1%.

As the drilling campaign is likely to be undertaken in the wet season and the sumps are likely to remain open over multiple wet seasons, CP will ensure that the sumps are designed to cater for the 1:1000 ARI rainfall event.

7.4.7 Wastewater Sump Water Balance

The Code of Practice requires an estimate of the 1 in 1000 ARI (0.1% AEP) rainfall rate using Australian Rainfall methodologies (Australian Rainfall and Runoff, 2019) for the critical period which results in the highest risk of overtopping. To address this requirement, the sumps will be designed to contain the volume of the 1:1000 ARI (0.1% AEP) 72hr rainfall event. The sumps will be bunded to prevent external catchments from contributing to the stored volume.

A review of the Intensity-Frequency-Duration curves for the proposed well sites showed some spatial variance in rainfall depths, however all sites were between 440-475mm of rainfall depth for the 1:1000 72hr event. A conservative estimate of 500mm was adopted for all sites. In addition to rainwater, the sump also collects wastewater from the drilling process. The wastewater generated from each well site is up to 0.8ML, as outlined in Table 7-1 and Table 7-2 of the EMP. For the purposes of the water balance, it has been assumed that 0.8ML of capacity is required initially, and an additional 0.002ML (0.8ML /365.25 days) of wastewater is generated on a daily basis. This is considered to be a conservative assessment.

Therefore, it has been determined that a sump volume of 1.3ML is required. This is the worst-case scenario in that is assumes that all wastewater has been generated and disposed of in the sump, and a 1:1000 AEP 72hr rainfall event occurs. In reality, as noted above, some of the wastewater will be reused and not directed to the sump.

To assess the long-term water balance of the sump, a simple and generic water balance was conducted and used to assess the spill risk of the sump. The Alice Springs BoM gauge was used for long term rainfall and evaporation data for the region. The sump was assumed to have a surface area of 1000m2.

The findings of the assessment are provided in Figure 7-1 below, which shows the daily rainfall and evaporation at the base of the graph, and the available storage at the top of the graph. Over the 121

[41] The 1:1000 ARI event is equivalent to a 0.1% AEP event