APPENDIX C POST CLOSURE MONITORING AND MAINTENANCE PLAN

1 Introduction

1.1 Rehabilitation Project Summary

ENGIE Hazelwood own and operate the Hazelwood brown coal mine, which was closed in 2017. ENGIE Hazelwood is currently in the process of rehabilitating the site of the former Hazelwood mine and power station to deliver a safe, stable, sustainable and non-polluting site that enables productive future uses. The Hazelwood Rehabilitation Project (HRP) involves the following key activities:

- decommissioning of remaining buildings, roads and infrastructure;
- earthworks to reprofile steep mine slopes;
- reinstating water courses to a more natural alignment; and
- the proposed establishment over time of a pit lake within the mine void (water level 45+ RL).

A full pit lake (water level 45+ RL or above) enables the site to achieve a safe and stable landform in the long term as well as provide significant potential economic, recreational and possible flood mitigation benefits to local communities and the region.

This Post Closure Monitoring and Management Plan (PCMMP) has been derived from the Post Closure Risk Management Plan and has been developed as part of the DMRP.

1.2 Purpose

This PCMMP aims to clearly delineate the monitoring and management requirements for the Hazelwood Rehabilitation Project during the post closure phase after responsibility for the site has been relinquished to the future land manager. The risk assessment identifies risks, control measures or actions required to mitigate the residual risks and demonstrates the change in risk profile over time across the rehabilitation milestones (active rehabilitation, passive rehabilitation and post closure (this component of the project)) within MIN5004.

This plan has been developed for implementation of monitoring and maintenance activities by future land managers within the (ex) mining licence.

The purpose of the PCMMP is to comply with the MRSD Act and MRSD Regulations. Specifically:

- The Mineral Resources Sustainable Development (MRSD) Act requires the DMRP to include a post-closure plan detailing the monitoring and maintenance needed after the mine closes.
- MRSD regulations require the post-closure plan to include:
  - Ongoing monitoring and maintenance to keep the land safe and stable.
  - A risk management plan to address any risks that may persist after closure.
  - Details of the equipment to be used to meet closure criteria, which will become property of the Crown.

- Identification of who will be responsible for post-closure activities.
- The schedule and methods for ongoing monitoring and maintenance.

These requirements are addressed in the PCMMP, and the Post Closure Risk Management Plan (PCRMP), with further details to be developed as the rehabilitation project progresses and post-closure risks are better understood.

1.3 Background

After the Latrobe Valley Mine Fire Risk Assessment in May 2015, Mining Licence MIN5004 was updated to require a site-based risk assessment. This assessment looks at four main risk categories: fire, environmental, security and emergency response, and their potential impacts on the public. The 2015 risk assessment led to the creation of a Risk Assessment Management Plan (RAMP), which informed the RAMPs submitted in 2017 and 2019. These plans were crucial for starting the Mine Rehabilitation and Closure Plan – Stage 1, which involves beginning to fill the mine.

The 2019 RAMP has been used as a reference and further refined to develop the PCMMP Post Closure Risk Management Plan (PCRMP). Both the PCMMP and PCRMP addresses all three closure milestones of the project:

- Milestone 1: Active Rehabilitation
- Milestone 2: Passive Rehabilitation
- Milestone 3: Post Closure

1.3.1 Review and Update

The PCMMP is intended to be reviewed and updated when one of the below conditions are met:

- Every 2 years during active rehabilitation phase the development of the Rehabilitation Project;
- At the attainment of each closure milestone; or
- When there is a major change in the rehabilitation activities impacting the risk profile.

1.4 Relevant Documentation

There have been a number of other risk assessments and documents which have been used as references to provide the necessary background and detail to inform this PCMMP. Table 1-1 shows the list of relevant operational documentation that could be referred to in relation to various elements of the PCMMP.

Table 1-1 Relevant Documentation

No.	Title	Date
1	Environmental Management System (EMS)	April 2009
2	Ground Control Management Plan (GCMP)	July 2023
3	Fire Risk Management Plan (FRMP)	December 2023
4	Hazelwood DMRP Sensitive Receptors	July 2024
5	Environmental Effects Statement Risk Register	September 2024
6	Hazelwood Risk Management Plan (RMP)	December 2019

No.	Title	Date
7	Landfill Environmental Monitoring Plan	December 2024

2 Closure Principles and Milestones

2.1 Closure Principles

The core principles of the DMRP is to achieve a safe, stable, sustainable and non-polluting and socially responsible site which is capable of sustaining the agreed post closure land use. Informed by these principles, the DMRP has been developed to meet specific rehabilitation objectives for each discrete domain identified in Chapter 8 of the DMRP. This plan articulates the activities that will be executed to achieve the rehabilitation objectives.

The closure principles as applied at Hazelwood can be defined as:

- ***Safe***: To ensure that the rehabilitated mine land does not pose a greater risk of harm to humans and the environment than comparable non-mining land uses.
- ***Stable***: To rehabilitate the mine land such that final landforms are enduring in the long term, with the potential for land movement minimised ensuring the viability of its proposed post-mining land uses.
- ***Sustainable***: To ensure that rehabilitated mine land will remain in a condition that requires no or minimal intervention consistent with the post-mining land uses, create a positive legacy, enhance environmental values and provide a timely benefit to current and future generations.
- ***Non-Polluting***: To deliver rehabilitated mine land and adjoining waterbodies which minimise the potential for the release of contaminants into surface water, groundwater, soil or air, that may pose a risk of harm to human health or the environment, and residual contamination at the site will be effectively managed.
- ***Community Values:*** To actively engage with key stakeholders and consider their interests throughout the rehabilitation and closure process and look for opportunities to enhance Traditional Owners' perspectives and cultural values.

2.2 Closure Milestones

The PCMMP is developed covering activities across the three closure milestones, namely- Milestone 1 Active Rehabilitation (includes lake filling), Milestone 2 Passive Rehabilitation (post fill) and Milestone 3 Post Closure.

3 Post Closure Risk Assessment – summary

3.1 Risk Identification

The assessment of risk relevant to the post closure phase was first undertaken in 2024 as part of development of the DMRP. The assessment considered risk events that could impact the environment,

people, property or infrastructure, that could conceivably occur after criteria has been met and the site has been relinquished.

A Source Pathway Receptor (SPR) model was used to link risk sources to receptors, identifying potential impacts on the site and external receptors, and ensuring compliance with closure objectives. Risks were grouped into four categories: fire, geotechnical, environmental and security.

4 Post Closure Risk Summary

The risk assessment was designed to track how risks change over time and to provide effective control measures during three key phases: active rehabilitation, passive rehabilitation, and post-closure. At the end of each phase, a risk assessment was conducted to ensure all controls were in place and working effectively.

Most risks tend to decrease as they move through different project phases, from active rehabilitation to passive rehabilitation, and post-closure, where relinquishment would occur at the end of the passive rehabilitation phase. The risk events that remained relevant to the post closure phase have been summarised in Table below.

This PCMMP has been developed to ensure adequate monitoring and maintenance is undertaken by future land managers to ensure the post closure risks are adequately mitigated.

Table 4-1 Post Closure Risk Analysis Summary

Hazard	No. of Risk Events	Description	Monitoring requirements[1]
Fire	<u>Total risks 5</u> Low = 4 Moderate = 1	Five fire-related risks were identified, split into coal fires and vegetation fires, each with different circumstances (e.g., spot fires vs. running fires). The highest risk during active rehabilitation was a coal fire caused by external embers (Risk ID#2). The main concern was the visual impact of coal smoke, not community safety, which was considered low due to the site's security and distance from the community. By the time relinquishment has been met (post closure phase) all coal will be covered or submerged, making vegetation fires (Risk ID#3) the highest risk. This is due to increased public access, raising the chance of fires being started by people and exposing more people to potential fires. The team discussed additional controls, like restricting access on fire danger days, though it is unclear who will implement this post-closure. It might be the Local Council or the Mine Land Rehabilitation Authority.	• Regular inspection and monitoring of the capping condition to maintain integrity for preventing and mitigating fire risks (e.g. capping remain insitu throughout rehabilitation phases) • Regular inspection to confirm signages are in place indicating clear path for emergency access routes • Vegetation management activities to maintain vegetation growth and fire breaks
Ground stability	<u>Total Risks 11</u> Low = 9 Medium = 2	The team identified ten geotechnical risks, including instability, erosion, Hazelwood Ash Retaining Embankment (HARE) failure, water infiltration through the Morwell Main Drain (MMD), differential ground movement, and floor heave. The highest risks were: • Instability due to extreme seismic events (Risk ID#9) • Elevated groundwater levels or water infiltration through the MMD (Risk ID#10 and #16) • Uncontrolled floor heave due to loss of weight balance (Risk ID#18) Once the final landform is stable, with the mine lake at RL+45m AHD and minimal ground movement, the main post-closure risk is unplanned ground movement from aquifer re-pressurisation (Risk ID#17). Some ground movement is expected when the	• Regular sampling and monitoring of pit void water levels to maintain water levels at desired levels • Periodic inspection and monitoring of levee integrity, and perform required maintenance activities • Periodic inspection and monitoring of surface movements to track erosion through use of suitable erosion monitoring methods • Periodic inspection and monitoring of landform condition and changes over extended period • Perform regular maintenance activities to maintain final landform design / condition • Periodic inspection, maintenance and condition reporting of MMD

[1] These are typical monitoring requirements for the listed controls. Additional monitoring and maintenance requirements are given in *DMRP Chapter 15 – Monitoring and Maintenance* and are also covered extensively in ENGIE's supporting GCMP, FRMP and EMP.

Hazard	No. of Risk Events	Description	Monitoring requirements[1]
		aquifer pumps are turned off, but this is considered moderate and rare. In Morwell Township, any differential movement should be within normal limits and similar to seasonal ground changes. Another high post-closure risk is uncontrolled floor heave (Risk ID#18). During active rehabilitation, this risk is moderate due to ongoing aquifer pumping. As the aquifers re-pressurise post-closure, uplift pressures will increase, with full recovery expected in about 200 years. This risk is high but rare.	• Periodic ground movement monitoring • Periodic geological monitoring and sampling of aquifer pressure in the area of interest • Regular inspection and maintenance of landfill area to maintain integrity and isolation to prevent seepage / loss of containment
Environmental	**Total Risks 28** Low = 25 Medium = 2 High = 1	The environment category has the most risks, with 28 identified. The highest risk during active rehabilitation is from EPA-licensed landfills, contamination, and seepage (Risk ID#19). Even with controls like restricting access and proper landfill capping, the risk remains as low as possible and is deemed So Far as Is Reasonably Practicable (SFAIRP). During the post-closure period, 64% of the residual risks are rated as Low, meaning they pose minimal risk to the community, environment, and infrastructure. Overall, 21% of risks were eliminated through ENGIE's rehabilitation strategy and controls. This shows that while the environment category has the most risks, they are mostly Low during the post-closure period.	• Periodic sample of pit void water quality against pre-determined water quality targets • Periodic inspection, maintenance and condition reporting of outlet structures • Regular weather monitoring regime to monitor and predict extreme rainfall events • Periodic inspection, maintenance and condition reporting of inlet structures • Regular weather monitoring regime to monitor and predict extreme rainfall events • Periodic inspection, maintenance and condition reporting of MMD • Periodic ground movement monitoring
Security	**Total Risk 3** High = 3	Three security risks were identified, including unauthorized access, authorized access, and malicious acts. The highest risks were from unauthorized (Risk ID#6) or authorized access (Risk ID#7) to the mine crest. These risks were ranked High for all phases—Active Rehabilitation, Passive Rehabilitation, and Post Closure—because they could potentially result in fatalities (e.g., drowning, falling, or interacting with construction activities). The likelihood of these events was considered Rare for all milestones. However, as time progresses and the final landform becomes safer (e.g., reduced coal batter profiles and no large equipment), these risks can be considered as low as reasonably practicable (SFAIRP), similar to	• Periodic inspection and monitoring of landform condition and changes over extended period

Hazard	No. of Risk Events	Description	Monitoring requirements[1]
		risks associated with other public water bodies, dams, or landscapes.	

5 Performance Standards

Since 2016, ENGIE Hazelwood has based their critical controls on the Health and Safety Critical Control Management Good Practice Guide by the International Council on Mining and Metals (ICMM) from 2015, which is considered the best practice for managing major mining risks.

Each critical control has its own performance standards, which include:

- The risk event and how the critical controls are managed
- Specific objectives of the critical control
- Performance requirements and target performance
- Activities that may impact or support the control
- A verification process to ensure the control is effective
- Triggers for shutdown, review, or investigation
- Assigned ownership and accountability for reporting and escalation

During the post-closure phase, some interventions will still be needed to keep risks as low as reasonably practicable (ALARP). During risk workshops, controls for the post-closure period were identified along with equivalent Critical Control Performance Standards (CCPS). The CCPS will be updated in advance of each milestone being reached throughout the life of the rehabilitation project. After the pit lake has been filled the Active Rehabilitation CCPSs will be transitioned into Passive Rehabilitation CCPS. In advance of relinquishment (mine closure) the Passive Rehabilitation CCPS will be developed and incorporated into this PCMMP.

The details required to be presented in each CCPS in Table 5-1 will need to be reviewed and updated based on what is learned and achieved during the preceding phase.

Table 5-1 Post Closure Critical Control Performance Standards

Elements that require monitoring	Control Type	CCPS to be adopted for post closure
Hazard: Mine Fire		
Maintenance, integrity & design - capping	Administrative	CC 383- Management of rehabilitation to cover exposed coal
Emergency access routes	Administrative	CC 206 - Vegetation Management / Grass Cutting / Firebreaks
Fire breaks	Engineering	CC 206 - Vegetation Management / Grass Cutting / Firebreaks
Hazard: Ground stability		

Elements that require monitoring	Control Type	CCPS to be adopted for post closure
Maintain pit void water level	Administrative	CC ### – Maintain Lake Level RL+45m AHD (to be developed)
Levees	Engineering	CC 119 - Design - Geometry of Batters, Benches, Embankment, Levees and Rehabilitation Design
Erosion Management	Administrative	CC 245- Geotechnical Inspections (Inc. MMD redesign)
Final landform design	Engineering	CC 119 - Design - Geometry of Batters, Benches, Embankment, Levees and Rehabilitation Design
Maintain, integrity & design- MMD	Engineering	CC 245- Geotechnical Inspections (Inc. MMD redesign)
Aquifer depressurisation	Engineering	CC 103 – Aquifer Depressurisation
EPA Licensed Landfill Management	Administrative	
Hazard: Adverse Environment		
Pit void water quality	Administrative	CC ### – Lake Water Quality (to be developed)
Outlet structures	Engineering	CC 1107- Morwell River Interconnection Structure
Inlet structures	Engineering	CC 1107- Morwell River Interconnection Structure
Gross pollutant trap- MMD	Administrative	CC 245- Geotechnical Inspections (Inc. MMD redesign)
Hazard: Site Security		
Final landform design	Engineering	CC 119 - Design - Geometry of Batters, Benches, Embankment, Levees and Rehabilitation Design
Emergency access routes	Administrative	CC 616- Activate Emergency Response Plan

This section summarises each CCPS relevant to the post closure phase. CCPS overview will be continuously updated as ENGIE Hazelwood progress through each rehabilitation milestone.

5.1 Mine Fire

5.1.1 CC 383- Management of rehabilitation to cover exposed coal

Table 5-2 CCPS 383 overview

Section	Summary
Critical control	Using a physical non-combustible barrier (e.g. clay or crushed rock) to prevent fires from starting on a coal surface. Experience from mining indicates capping depths of 75 mm and above are adequate to provide this level of protection in most situations, heat sources below the ground may require additional cover. This Critical Control is one form of protecting the coal surface and specifically covers: • Benches and berms • Service areas and corridors • Rehabilitated coal batters
Target performance	100% compliance of clay and / or crush rock covering berms / benches, excluding exposed coal batters below RL +45.
Monitoring type	Visual inspection by a suitably qualified individual tha`t the minimum 75 mm cover is in place
Monitoring frequency	Inspections in line with the GCMP which will be revised by geotechnical engineer as risks reduce
EE	• Major fault / non-conformance detected during above inspections and testing.

	• Major fire with potential to impact upon the environment, public safety, property and infrastructure.

5.1.2 CC 206- Vegetation Management / Grass Cutting / Firebreaks

Table 5-3 CCPS 206 overview

Section	Summary
Critical control	Vegetation management and grass cutting and the installation and maintenance of firebreaks.
Specific objectives	Reduce grass fuel load and create firebreaks to provide a non-combustible barrier
Target Performance	• 100% completion rate of the Annual aerial photo / plan to review any coal exposure and grass uptake. • 100% of assigned activities, grass cutting and firebreak maintenance.
Monitoring frequency	• All actions Implemented by the 30th October, annually • Monthly review from September to March
Trigger for investigation or maintenance	• Major fault / non-conformance detected during above inspections and testing. • Major fire with potential to impact upon the environment, public safety, property and infrastructure.

5.2 Hazard: Geotechnical failure

5.2.1 Maintain pit void water level RL+45m AHD (+/- tolerance range)

The monitoring program is primarily aimed at identifying deterioration of lake water quality over time, to ensure that management practices are implemented, appropriate, and are modified as necessary. These monitoring measures to be implemented are applicable during and post filling (i.e. monitoring will continue beyond the filling phase). Climate and evaporation monitoring will also allow for calibration of model inputs and assist in reducing these as sources of uncertainty in the model. Monitoring of groundwater quality coupled with pit fill rates versus predicted fill rates will also assist in improving the confidence in the groundwater inflow inputs. This would be particularly useful during prolonged dry spells where the only pit water input would be from groundwater

The management responses to exceeding a threshold limit and environmental outcomes will need to be determined and adapted to the final productive land use. The contingency measures are ultimately aimed to protect, restore, preserve and improve the lake water quality for a specified productive final land use. Once a final productive land use is determined, a trigger action response plan (TARP), which defines the minimum set of actions required in response to a deviation from expected lake monitoring results (for specific threshold limits (e.g. water quality guidelines), should be developed for the fill and post fill phases.

Table 5-4 Monitoring or contingency measures

Measure ID	Monitoring or contingency measure
WQMC01	**Lake water quality** **Objective**: Monitor lake water quality at the surface and at depth during filling and post filling. **Location:** Pontoon placed in the middle of the lake to measure at 1, 3, 6, 9, 12, 18 and 30m below the lake surface (depending on the progress of lake filling and the results of the multiparameter probes).

Measure ID	Monitoring or contingency measure
	From the pontoon, multiparameter probes, pressure transducer and sampling bottles deployed to measure the deeper water profile. **Method:** Floating pontoon fitted with in-situ probes that can log at 15-minute intervals and measure (as a minimum): temperature, pH, Eh, TDS and dissolved oxygen (lake depth 1 to 30m). Multiparameter probes (e.g. YSI CastAway-CTD; temperature and EC) with pressure transducer (lake depth to 100m). Approximately every 6-months or based on in-situ probe readings (i.e. significant change to routine monitoring parameters). The results of the multiparameter probes will be used to determine deep water quality sampling depths. Deep water quality monitoring (entire depth of lake profile) using Niskin sampling bottle with samples measured for full suite of chemical parameters e.g. nutrients, salts, metals and metalloids. Approximately every 6-months, determined by in-situ probe and multiparameter readings. **Parameters and frequency:** Water quality parameters and frequency provided in **Error! Reference source not found.**. Note: Total and dissolved concentrations where applicable. **Trigger comparison:** Measured water quality data compared to trigger values applicable to final productive land use. **Contingency:** Specific contingency measures will need to align with final productive land use. Some of the lake water quality mitigation measures that could be considered include (amongst others): strategic/ alternative top-up water (dilution), in situ water treatment (e.g. bioremediation, chemical remediation) and physical remediation) and controlled release.
WQMC02	**Lake water level** **Objective**: Monitor lake water level during and post filling. **Location:** Reference structure adjacent to the lake. **Method:** Survey pick-up. **Parameters and frequency:** Water level at 15-minute intervals or as appropriate. **Trigger:** If the lake water level drops to RL +44.5m AHD. **Contingency**: Top-up commences from (in order) rainfall runoff from the MMD, flood flows from the Morwell River, Moondarra Reservoir water, or pumped groundwater from the M2 aquifer.

Measure ID	Monitoring or contingency measure
WQMC03	**Groundwater quality** **Objective**: Monitor groundwater quality in all receiving aquifers (i.e. HHF, M1 and M2). **Location:** Specific groundwater monitoring sites to be specified in Technical Report E: *Groundwater*. **Parameters and frequency:** Water quality parameters and frequency provided in **Error! Reference source not found.**. Note: Total and dissolved concentrations where applicable. Groundwater quality monitoring is to determine: 1) Water quality that may be entering the lake over time, and that could be impacted by other sources. 2) Aquifer water that may be influenced by lake seepage. 3) Potential groundwater used for fill and top-up. **Trigger:** Detrimental changes in groundwater quality that exceeds a threshold for a specified productive land use. **Contingency:** If the groundwater quality significantly changes from the input used in the EES lake water quality modelling, then consider updating and re-running the lake model. Specific groundwater contingency measures provided in *EESS Technical Report E: Groundwater.*
WQMC04	**Morwell River quality downstream (connected lake only)** **Objective**: Monitor Morwell River water quality downstream of the lake weir. **Location:** Specific surface water monitoring sites to be specified in Technical Report D: *Catchments, Rivers and Wetlands*. **Parameters and frequency:** Water quality parameters and frequency provided in **Error! Reference source not found.**. Note: Total and dissolved concentrations where applicable. **Trigger:** Detrimental changes in Morwell River water quality (downstream) that exceeds a threshold for a specified productive land use. **Contingency:** Specific contingency measures provided in EES *Technical Report D: Catchments, Rivers and Wetlands.*
WQMC05	**Morwell River (flood flow) quality (connected lake only)** **Objective**: Monitor Morwell River water quality of the lake during flood events to determine water quality entering the lake during those events. **Location:** Inlet of Morwell River to lake **Parameters and frequency:** Water quality parameters and frequency provided in **Error! Reference source not found.**. Note: Total and dissolved concentrations where applicable. **Trigger:** Detrimental changes in Morwell River (flood flow) water quality (upstream) that exceeds a threshold for a specified productive land use. **Contingency:** If the Morwell River (flood flow) quality significantly changes from the input used in the EES lake water quality modelling, then consider updating and re-running the lake model. Specific contingency measures provided in *EES Technical Report D: Catchments, Rivers and Wetlands.*
WQMC06	**Lake fill, top-up and other lake water quality inputs (not included above)** **Objective**: Monitor all potential lake fill and top-up water qualities: MMD, Moondarra Reservoir and HCP.

Measure ID	Monitoring or contingency measure
	Location: Moondarra Reservoir (offtake), MMD and the middle of HCP (refer to WQ_MC01). **Parameters and frequency:** Water quality parameters and frequency provided in **Error! Reference source not found.**. Note: Total and dissolved concentrations where applicable. **Trigger:** If the lake fill, top-up or other lake water quality inputs significantly changes from the input used in the EES lake water quality modelling **Contingency:** Consider updating and re-running the lake model.
WQMC07	**Climatic conditions** **Objective**: Monitor rainfall, air temperature, humidity, wind speed and direction, shortwave radiation (SW) incoming, SW outgoing, longwave (LW) incoming, LW outgoing and atmospheric pressure. **Location:** Pontoon placed in the middle of the lake (refer to WQMC01). **Parameters and frequency:** Climate parameters and frequency provided in **Error! Reference source not found.**. **Trigger:** If the climate parameters significantly change from the inputs used in the EES lake water quality modelling. **Contingency:** Consider updating and re-running the lake model.

Table 5-5 Post Closure monitoring schedule

Sample Medium	Sampling location	Analyte	Frequency
Lake	Pontoon in middle of lake (1, 3, 6, 9, 12, 18 and 30m below the lake surface).	temperature, pH, Eh, TDS and dissolved oxygen	Every 15-minutes
Lake	Reference point adjacent to the lake	Water level	Every 15-minutes
Lake	Multiparameter probe from pontoon in middle of the lake (full profile from lake surface to 100m).	Temperature, EC	6-months
Lake	Lake: Niskin sampling bottles from pontoon in middle of lake (select location down the entire lake profile depending on multiparameter results).	Acidity as $CaCO_3$, Alkalinity Bicarbonate as $CaCO_3$, Alkalinity Carbonate, Alkalinity Total, Aluminium, Arsenic, Barium, Biological Oxygen Demand (BOD), Boron, Cadmium, Calcium, Chemical Oxygen Demand (COD), Chloride, Chromium, Cobalt, Copper, Diatoms, Dissolved Oxygen, EC, Fluoride, Hardness Total as $CaCO_3$, Alkalinity Hydroxide as $CaCO_3$, Iron, Lead, Eh (redox), Magnesium, Manganese, Molybdenum, Nickel, Nitrate, Nitrite + Nitrate, Nitrite, pH, Phytoplankton, Potassium, Selenium, Sodium, Strontium, Sulfate, Suspended sediment, Temperature, Total Dissolved Solids, Titanium, Turbidity, Zinc and Zooplankton	6-months

Sample Medium	Sampling location	Analyte	Frequency
Groundwater (HHF, M1 and M2 aquifers) Morwell River (upstream and downstream) Moondarra Reservoir Hazelwood Cooling Pond Morwell Main Drain	To be specified in Technical Report D: *Catchments, Rivers and Wetlands* or Technical Report E: *Groundwater*.	Acidity as $CaCO_3$, Alkalinity Bicarbonate as $CaCO_3$, Alkalinity Carbonate, Alkalinity Total, Aluminium, Arsenic, Barium, Biological Oxygen Demand (BOD), Boron, Cadmium, Calcium, Chemical Oxygen Demand (COD), Chloride, Chromium, Cobalt, Copper, Diatoms, Dissolved Oxygen, EC, Fluoride, Hardness Total as $CaCO_3$, Alkalinity Hydroxide as $CaCO_3$, Iron, Lead, Eh (redox), Magnesium, Manganese, Molybdenum, Nickel, Nitrate, Nitrite + Nitrate, Nitrite, pH, Phytoplankton, Potassium, Selenium, Sodium, Strontium, Sulfate, Suspended sediment, Temperature, Total Dissolved Solids, Titanium, Turbidity, Zinc and Zooplankton	6-months (excluding Morwell River flood flow events which are once a year)
Climate	Pontoon in middle of the lake or at deepest point.	Monitor rainfall, air temperature, humidity, wind speed and direction, shortwave radiation (SW) incoming, SW outgoing, longwave (LW) incoming, LW outgoing and atmospheric pressure.	15 minutes

5.2.2 CC 119 Levees Engineering - Design - Geometry of Batters, Benches, Embankment, Levees and Rehabilitation Design

Table 5-6 CCPS 119 overview

Section	Summary
Critical control	Analysis of geotechnical conditions (such as shear strength parameters, long term water levels, geotechnical interfaces, geological structure locations, etc.) by geotechnical engineers to develop a suitable design which is then reviewed by an independent geotechnical engineer for the high consequence events.
Specific objectives	To create an acceptable performance-based design that is based on and appropriate for the specific rehabilitation domain conditions, as well as risk profile (e.g. internal or adjacent critical infrastructure). With appropriate supporting controls in place the design achieves the intended function and performance.
Target performance	• 100% of design reviews yield comparable analysis outcomes and design configurations (i.e., consistent FoS and / or PoF). • Probabilistic (limit equilibrium) batter stability assessments undertaken confirmed exceedance of this criteria based on execution of the designed rehabilitation measures. • Finite element modelling undertaken confirms the outcomes from limit equilibrium modelling.
Monitoring frequency	In line with the monitoring requirements of the GCMP
Trigger for investigation or maintenance	• Major batter / rehabilitation or embankment instability or failure. • Increased frequency or pattern of small-medium scale batter instabilities and / or failures. • Identification of unfavorable ground conditions (e.g. previously unknown geological structures or firehole presence not anticipated or sufficiently catered for in the adopted design configuration and / or management processes).

	• Non-compliance of design process (and / or recommended parameters) or outcomes / recommendations identified through review and audit processes.

5.2.3 CC 245 Erosion Management Administrative - Geotechnical Inspections (Inc. MMD redesign)

Table 5-7 CCPS 245 overview

Section	Summary
Critical control	This is a human activity critical control. Planned and routine Geotechnical Inspections of priority rehabilitation areas
Specific objectives	Identify precursor stability events within the Mine enabling preventative response actions through: • Geotechnical Engineer to conduct fortnightly inspections and issue a report of findings and remedial actions of priority rehabilitation areas. • Geotechnical Engineer to conduct inspections in response to tripped TARPs. Specific monitoring requirements •
Target performance	• 100% of fortnightly geotechnical inspections completed and report of findings generated. • 100% of TARPs response completed. • All monthly Geotechnical and Hydrogeological Reports are completed and sent out to the Hazelwood Rehabilitation Project Team with key issues highlighted.
Monitoring frequency	Geotechnical inspections: • Annual (general inspections) • Following significant rainfall • Ground movement Trigger • Significant Inflow of Water Trigger
Trigger for investigation or maintenance	• Critical surface movement, as defined in the TARPs (Section 7.7.1.4 of the GCMP), not to exceed 5mm/day over a monthly period in the Active Rehabilitation Area or 2mm/day over a monthly period in Non-Active Areas. • Area of interest monitoring (PID 50957) • Geotechnical Hazard Identification (PD 52115) • Dam and TSF inspections (PID 52302) • Crack mapping (PID 53069) • Rainfall TARP (PID 53140) • Geotechnical Hazard TARP (PID 53232) • Stability groundwater level TARP (PID 53141) • Ground movement TARP (PID 56942) • Mine preparedness Plan Rainfall (PID 55263) • Significant Inflow of Water TARP (PID tbc)

5.2.4 CC 119 Final landform design Engineering - Design- Geometry of Batters, Benches, Embankment, Levees and Rehabilitation Design

Table 5-8 CCPS 119 overview

Section	Summary
Critical control	Analysis of geotechnical conditions (such as shear strength parameters, long term water levels, geotechnical interfaces, geological structure locations, etc.) by geotechnical engineers to develop a

	suitable design which is then reviewed by an independent geotechnical engineer for the high consequence events.
Specific objectives	To create an acceptable performance-based design that is based on and appropriate for the specific rehabilitation domain conditions, as well as risk profile (e.g. internal or adjacent critical infrastructure). With appropriate supporting controls in place the design achieves the intended function and performance.
Target performance	• 100% of design reviews yield comparable analysis outcomes and design configurations (i.e., consistent FoS and / or PoF). • Probabilistic (limit equilibrium) batter stability assessments undertaken confirmed exceedance of this criteria based on execution of the designed rehabilitation measures. • Finite element modelling undertaken confirms the outcomes from limit equilibrium modelling.
Monitoring Frequency	Inspections in line with the GCMP which will be revised by geotechnical engineer as risks reduce
Trigger for investigation or maintenance	• Major batter / rehabilitation or embankment instability or failure. Increased frequency or pattern of small-medium scale batter instabilities and / or failures. • Identification of unfavorable ground conditions (e.g. previously unknown geological structures or firehole presence not anticipated or sufficiently catered for in the adopted design configuration and / or management processes). • Non-compliance of design process (and / or recommended parameters) or outcomes / recommendations identified through review and audit processes. • Defect mapping (PID 52113) • Defect mapping at Hazelwood Mine for the structural geological model (PID 52113) • Ground control management plan (GCMP v5- 2019) (PID 56966)

5.2.5 CC 245 Maintain, integrity & design- MMD Engineering - Geotechnical Inspections (Inc. MMD redesign)

Table 5-9 CCPS 245 overview

Section	Summary
Critical control	This is a human activity critical control. Planned and routine Geotechnical Inspections of priority rehabilitation areas
Specific objectives	Identify precursor stability events within the Mine enabling preventative response actions through: • Geotechnical Engineer to conduct fortnightly inspections of priority rehabilitation areas. • Geotechnical Engineer to issue a report of findings and remedial actions to mine personnel • Geotechnical Engineer to conduct inspections in response to tripped TARPs.
Performance requirements	• Geotechnical Engineer is appropriately qualified • Geotechnical Engineer conducts fortnightly inspections as per GCMP • Geotechnical Engineer issues a report of his/her inspection findings fortnightly and issues a remediation plan (outlining the actions and responsibilities) • Geotechnical Engineer identifies and communicates "critical" geotechnical issues to Hazelwood Technical Services Manager immediately.
Target performance	• 100% of fortnightly geotechnical inspections completed and report of findings generated. • 100% of TARPs response completed. • All monthly Geotechnical and Hydrogeological Reports are completed and sent out to the Hazelwood Rehabilitation Project Team with key issues highlighted.
Monitoring Frequency	In line with the requirements of GCMP

Trigger for investigation or maintenance	• Critical surface movement, as defined in the TARPs (Section 7.7.1.4 of the GCMP), not to exceed 5mm/day over a monthly period in the Active Rehabilitation Area or 2mm/day over a monthly period in Non-Active Areas. • Items identified as "critical" are not reported / missed and are not actioned within the allotted timeframe • Area of interest monitoring (PID 50957) • Geotechnical Hazard Identification (PD 52115) Dam and TSF inspections (PID 52302) • Crack mapping (PID 53069) • Rainfall data collection and management (PID 53136) • Rainfall TARP (PID 53140) • Geotechnical Hazard TARP (PID 53232) • Stability groundwater level TARP (PID 53141) • Ground movement TARP (PID 56942) • Mine preparedness Plan Rainfall (PID 55263) • Significant Inflow of Water TARP (PID XXXXX) • Ground Instability Register– ENGIE Hazelwood Incident Management Reporting Procedure (PID 35510)

5.2.6 GC 601 Passive (Aquifer Depressurisation)

Table 5-10 GCPS 601 overview

Section	Summary
Critical control	Mine water levels at RL 45 m AHD and key M1 and M2 aquifer pump bores decommissioned. Monitor recovery of aquifer pressures to show: • M1 aquifer pressures remain below Trigger Level set at 5 m below weight balance • M2A to M2B aquifer pressures remain below Trigger Level set at 10 m below weight balance • M2C to M2E aquifer pressures remain below Trigger Level set at 20 m below weight balance. In order to provide a level of risk management and retain the ability to utilise aquifer water to 'top-up' the mine lake, some M2 and possibly M1 pump bores will remain as well as their supporting electrical infrastructure.
Specific objectives	
Target performance	• M1 aquifer pressures below TL1 100% of time • M2 aquifer pressures below TL1 100% of time
Monitoring frequency	In line with the requirements of the GCMP
Trigger for investigation or maintenance	• Aquifer induced heave event causes mine batter movement or monitoring equipment damage. • Aquifer pressure exceeding TARP TL2 in mine area due to reduced TL1 values from low mine water levels or high aquifer pressures • Geotechnical and Hydrogeological Reporting is not completed according to schedule. • Ground Water Monitoring Procedure – Collector ArcGIS and Survey### (PID: 57977) • Groundwater Monitoring Procedure – Reading a Vibrating Wire Piezometer and Standpipe (PID: 57944)

	• Monitoring of mine water level. (PID 53135) • Real Time Telemetry and datalogger management (PID 57976) • Comparison of aquifer pressure surfaces relative to TL1 surfaces as required by Hydrogeology Management Plan (PID 53213) • Comparison of aquifer pressure recovery to groundwater model predictions. • TARP Aquifer Depressurisation (PID 53283)

5.2.7 EPA Licensed Landfill Management Administrative

Table 5-11 LEMP Monitoring requirements

Section	Summary
Monitoring network	The proposed monitoring network includes 53 of the currently existing groundwater monitoring wells located at: • the HPB; • the EOD (Investigation Area 5); and • around the Mine Void (mainly around Investigation Area 1, 2, 3, and 4). The groundwater monitoring wells proposed for sampling are indicated in *Appendix O* and presented on *Figure 8a.* Groundwater monitoring wells currently proposed for sampling may be subject to change as the understanding of the site increases. *Appendix O* presents a summary of all existing groundwater wells at the site, including: • Well ID; • Coordinate points; • Well depth; • Screen interval; and • Groundwater aquifer being targeted. Initially, it is proposed that a selection of these wells be sampled, as one the objectives is to collect groundwater quality data from across the site to support the completion of the s53X Audit. At this stage, the objective is not necessary targeting sources, as many do not have target groundwater wells yet. This sampling will also aid in identifying any pollution (non background) present in groundwater not previously identified due to limited analytical suites in previous investigations. As the pollution source delineation and investigation works are completed and more wells are drilled, the groundwater monitoring network for collection of spatial and temporal data will be revised. Consideration of established groundwater monitoring programs on Site will be included in this assessment.
Analytical suite	Since investigation of potential delineation sources is yet to be completed, it is proposed a generic groundwater analytical schedule for the groundwater monitoring be undertaken, at this stage. It is proposed groundwater monitoring samples be analysed for: • Metals (Arsenic, Boron, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Lead, Selenium, Vanadium, Zinc, Mercury, Chromium VI and Aluminium); • TRH; • SVOCs (including PAHs); • VOCs (including BTEX and chlorinated solvents); • PCBs; • PFAS; • Nitrate and nitrite; • Chloride; • Ammonia; • Fluoride;

	• Herbicides (Metsulfuron methyl, Phenoxy Acid Herbicides and Glyphosate /Aminomethylphosphonic acid [AMPA]); • Pesticides (OCPs and OPPs); • Major Anions and Cations; and • Total Dissolved Solids (TDS). The analytical schedule of the monitoring will be re-assessed as pollution source delineation and investigation work is complete. Depending on the findings of the delineation and investigation work, it is possible new analytes may be required to target specific POPCs that may not be included in the generic schedule proposed above. Or in the opposite case analytes may be removed if they are not relevant to a specific area once targeted investigations are completed.
Monitoring frequency	Since one of the objectives of the monitoring is to collect temporal groundwater data, it is proposed that starting in January 2021, the monitoring be done **bi-annually**, contemporaneous with the LEMP monitoring program; i.e. with a monitoring event in March, and a monitoring event in October. Biannual monitoring will continue until the completion of the s53X Audit. Monitoring will be done for the period of Audit completion, as per currently required by the Notice, likely end will be in 2026. The frequency of the monitoring will be reassessed as pollution source delineation and investigation work is done. Depending on the findings of the delineation and investigation work, it is possible more or less frequent sampling may be required.
Sampling methodology	It is proposed sampling methodology of groundwater monitoring be completed in accordance with the Sampling Analysis and Quality Plan (SAQP) prepared by ERM for the Hazelwood Mine and Mine Ancillary Areas (ERM Ref: 0490706RP13_SAQP) (May 2020) (included in Appendix P). This SAQP has been endorsed by the site Auditor.
QAQC	It is proposed quality assurance and quality control of groundwater monitoring be completed in accordance with the SAQP prepared by ERM for the Hazelwood Mine and Mine Ancillary Areas (ERM Ref: 0490706RP13_SAQP) (May 2020). This SAQP has been verified by the site Auditor
Monitoring reporting	One report will be produced for each groundwater monitoring round completed. These reports are to be made available to the Auditor for review and endorsement.

5.3 Environmental

5.3.1 CC ### – Lake Water Quality

See Section 5.2.1

5.3.2 CC 1107- Morwell River Interconnection Structure (inlet)

Table 5-12 CCPS GC 601 (Passive Rehabilitation Phase) overview

Section	Summary
Critical control	This is a human activity and technological critical control. The human activity is reviewing current site conditions, noting predictive weather / flooding forecasts and operating the penstock accordingly. The technology is the penstock control itself and the mechanical components.
Specific objectives	Routinely assess relevant ground and mine conditions along with predictive weather / flooding forecasts and maintain the penstock so as to limit any Morwell River flows entering the mine to 2.5GL per annum.
Target performance	• Penstock functional inspections are conducted, and reports are issued to Hazelwood Rehabilitation Project Manager

	• Critical surface movement, not to exceed levels as defined in the TARPs
Monitoring frequency	In line with the monitoring requirements of the GCMP and EMP
Trigger investigation or maintenance	• Final batter movement event causes equipment damage or impact to public infrastructure, environment and public safety • Surface movement exceeds levels as defined in the TARPs • Area of interest monitoring (PID 50957) • General survey (PID 53135) And other procedures and TARPs detailed below • Geotechnical Hazard TARP (PID 53232) • Ground control management plan (GCMP v5 2019) (PID 56966) • Ground movement TARP (PID 56942) • Hydrogeology Management Plan (PID 53213) • Inclinometer readings automatic (PID 53132) • Preparedness Plan Rainfall (PID 55263) • Rainfall TARP (PID 53140) • Reading horizontal displacement from an extensometer (PID 53071) • Reading vertical displacement from an extensometer (PID 53067) • Significant Inflow of Water TARP (PID XXXXX) • Stability groundwater level TARP (PID 53141) • Two monthly Penstock Functional Inspection and Report (PID YYYYY) • Vibrating wire piezometer and standpipe monitoring (PID 52216) • Water quality and flow monitoring (PID 53065)

5.3.3 CC 1107- Morwell River Interconnection Structure (outlet)

See section 5.3.2

5.3.4 CC 245- Geotechnical Inspections (Inc. MMD redesign)

See section 5.2.5

5.4 Security

5.4.1 CC 119- Design- Geometry of Batters, Benches, Embankment, Levees and Rehabilitation Design

Table 5-13 CCPS 119 overview

Section	Summary
Critical control	This is a human activity critical control. The human activity is analysis of geotechnical conditions (such as shear strength parameters, long term water levels, geotechnical interfaces, geological structure locations, etc.) by geotechnical engineers to develop a suitable design which is then reviewed by an independent geotechnical engineer for the high consequence events.
Specific objectives	To create an acceptable performance-based design that is based on and appropriate for the specific rehabilitation domain conditions, as well as risk profile (e.g. internal or adjacent critical infrastructure). With appropriate supporting controls in place the design achieves the intended function and performance.
Performance requirements	• The requirements are to achieve an acceptable performance-based design that provides for the integrity of the mine batters (including rehabilitated batters), benches and embankments, achieving satisfactory batter performance and effective implementation of associated procedures and processes.

	• The design is complemented by the critical controls Aquifer Depressurisation (103) and Horizontal Boreholes (231) and verified by monitoring (601), inspections (245) and reporting. • Geotechnical Engineer is appropriately qualified
Target performance	• Zero major surprise stability related events or significant impacts on the business (including safety, environmental and business continuity related consequences). • 100% acceptable / tolerable batter and embankment performance at "large scale" (i.e.., > 500m3 in size or multi-batter; in line with expectations – stability and ground movement related). • 100% of new, updated or modified batter / rehabilitation and embankment designs are accompanied by a suitable design report with appropriate and clear reviews and approvals / sign-off (demonstrating sound engineering principles and due process). • 100% of personnel are trained and competent or are being supervised by someone who is trained and competent in the monitoring of geotechnical conditions.
Monitoring frequency	In line with the monitoring requirements of the GCMP and EMP
Trigger investigation or maintenance	• Major batter / rehabilitation or embankment instability or failure. • Increased frequency or pattern of small-medium scale batter instabilities and / or failures. • Identification of unfavorable ground conditions (e.g. previously unknown geological structures or firehole presence not anticipated or sufficiently catered for in the adopted design configuration and / or management processes). • Defect mapping (PID 52113) • Defect mapping at Hazelwood Mine for the structural geological model (PID 52113) • Ground control management plan (GCMP v5- 2019) (PID 56966) • PID 53211 – Stability Analysis • Defect mapping (PID 52113)

6 Post Closure Monitoring Requirements

Table 6-1 Post Closure CCPS monitoring requirements

Control	Critical Control Performance Standards	Monitoring Requirements	Description	Frequency
Hazard: Mine Fire				
Maintenance, integrity & design - capping	CC 383 - Management of rehabilitation to cover exposed coal	• Defect mapping (PID 52113) • 100% compliance of clay and / or crush rock covering berms / benches, excluding exposed coal batters below RL +45.	• Benches / berms are clay and / or crushed rock covered; • Clay capping of rehabilitated coal batters above RL +45; • Clay capping remains insitu for life of mine until closure rehabilitation is undertaken; and • Placement of suitable material for area.	• Annual inspections as part of the GCMP
Emergency access routes		• 100% completion rate of the Annual Aerial photo / plan to review any coal exposure and grass uptake	• Victoria Police, Ambulance Victoria and the local CFA brigades have been trained and instructed to drive onto the site through the Hazelwood Rehabilitation Project Gate as the default access point and drive to, and park at, the Mine Control Centre, see Figure 1 - Site Emergency Access Routes. • A designated sign posted and line marked route is in place to the designated muster point.	• Annual inspections prior to the fire season
Fire breaks	CC 206 - Vegetation Management / Grass Cutting / Firebreaks	• 100% completion rate of the Annual Aerial photo / plan to review any coal exposure and grass uptake. • 100% of assigned activities, grass cutting and firebreak maintenance.	• Non-native grassland is to be grazed / cut to levels of growth which is not considered to pose a significant threat of excessive fuel loads. • Grazing is carried out on grassland/s within the Mine boundary owned by ENGIE Hazelwood and leased to third parties and is the preferred option of grass reduction in such areas. • In general grass should be cut or slashed to a maximum of 100 millimeters in	• Annual inspections prior to the fire season

			height; and recut on a frequency dependent on levels of regrowth as assessed by the Mine Production Manager. Grass levels are to be monitored and assessed by the Mine Production Manager or Environmental Officer to ensure fuel levels are acceptable and action taken in order to reduce excessive levels. • 0184 Preventative - Fire breaks - mine boundary • maintenance of fire breaks	
Hazard: Geotechnical				
Maintain pit void water level	CC ### – Lake Water Quality	Pontoon based lake depth and quality analysis Monitoring of water inflows and outflows	Mine lake level 45RL	Ongoing monitoring of lake depth Ongoing monitoring on inflows
Levees	CC 119 Levees Engineering	• Defect mapping (PID 52113) • Ground control management plan (GCMP v5- 2019) (PID 56966	• Traditional survey techniques are used to determine surface movement on both the mine batters and surrounds. Within the Geographical Information System (GIS), ENGIE Hazelwood holds information on ground movement monitoring installations and readings, showing locations, dates, readings in comparison to prior readings and TARPs	• Inspections in line with the GCMP which will be revised by geotechnical engineer as risks reduce
Erosion Management	CC 245 Erosion Management Administrative - Geotechnical Inspections (Inc. MMD redesign)	• Area of interest monitoring (PID 50957) • Geotechnical Hazard Identification (PD 52115) • Dam and TSF inspections (PID 52302) • Crack mapping (PID 53069) • Rainfall TARP (PID 53140) • Geotechnical Hazard TARP (PID 53232) • Stability groundwater level TARP (PID 53141) • Ground movement TARP (PID 56942)	• See GCMP for specific details on each element	• Monitoring will be completed in line with the GCMP which will be revised by geotechnical engineer as relevant risks are eliminated or reduce

		• Mine preparedness Plan Rainfall (PID 55263) • Significant Inflow of Water TARP (PID XXXXX)		
Final landform design	CC 119 Final landform design Engineering- Design - Geometry of Batters, Benches, Embankment, Levees and Rehabilitation Design	• Major batter / rehabilitation or embankment instability or failure. Increased frequency or pattern of small-medium scale batter instabilities and / or failures. • Identification of unfavourable ground conditions (e.g. previously unknown geological structures or firehole presence not anticipated or sufficiently catered for in the adopted design configuration and / or management processes). • Defect mapping (PID 52113) • Ground control management plan (GCMP v5- 2019) (PID 56966)	• See GCMP for specific details on each element	• Monitoring will be completed in line with the GCMP which will be revised by geotechnical engineer as relevant risks are eliminated or reduce
Maintain, integrity & design - MMD	CC 245 Maintain, integrity & design – MMD Engineering- Geotechnical Inspections (Inc. MMD redesign)	• Critical surface movement, as defined in the TARPs (Section 7.7.1.4 of the GCMP), not to exceed 5mm/day over a monthly period in the Active Rehabilitation Area or 2mm/day over a monthly period in Non-Active Areas. • Area of interest monitoring (PID 50957) • Geotechnical Hazard Identification (PD 52115) • Dam and TSF inspections (PID 52302) • Crack mapping (PID 53069) • Rainfall data collection and management (PID 53136) • Rainfall TARP (PID 53140) • Geotechnical Hazard TARP (PID 53232) • Stability groundwater level TARP (PID 53141) • Ground movement TARP (PID 56942) • Mine preparedness Plan Rainfall (PID 55263)	• See GCMP for specific details on each element	• Monitoring will be completed in line with the GCMP which will be revised by geotechnical engineer as relevant risks are eliminated or reduce

		• Significant Inflow of Water TARP (PID 58141)		
Aquifer depressurisation	GC_601_Passive (Aquifer Depressurisation	• Monitoring of mine water level. (PID 53135) • Comparison of aquifer pressure surfaces relative to TL1 surfaces as required by Hydrogeology Management Plan (PID 53213) • Comparison of aquifer pressure recovery to groundwater model predictions. • TARP Aquifer Depressurisation (PID 53283)	• See GCMP for specific details on each aquifer depressurisation	• Monitoring will be completed in line with the GCMP which will be revised by geotechnical engineer as relevant risks are eliminated or reduce
EPA Licensed Landfill Management		• It is proposed sampling methodology of groundwater monitoring be completed in accordance with the Sampling Analysis and Quality Plan (SAQP) prepared by ERM for the Hazelwood Mine and Mine Ancillary Areas (ERM Ref: 0490706RP13_SAQP). • The monitoring be done bi-annually, contemporaneous with the LEMP monitoring program; i.e. with a monitoring event in March, and a monitoring event in October. • Biannual monitoring will continue until the completion of the s53X Audit. Monitoring will be done for the period of Audit completion, as per currently required by the Notice, likely end will be in 2026. • Depending on the findings of the delineation and investigation work, it is possible more or less frequent sampling may be required.	• Hazelwood Clean Up Plan, Hazelwood Power Complex, 24 June 2024	• Depending on the findings of the delineation and investigation work, it is possible more or less frequent sampling may be required. • Variation to SAQP will be required to endorsed by the auditor
Hazard: Adverse Environment				

Pit void water quality	As above			
Outlet structures Inlet structures	CC 1107 - Morwell River Interconnection Structure (inlet)	• Final batter movement event causes equipment damage or impact to public infrastructure, environment and public safety • Surface movement exceeds levels as defined in the TARPs • Area of interest monitoring (PID 50957) • General survey (PID 53135) • Geotechnical Hazard TARP (PID 53232) • Ground control management plan (GCMP v5 2019) (PID 56966) • Ground movement TARP (PID 56942) • Hydrogeology Management Plan (PID 53213) • Preparedness Plan Rainfall (PID 55263) • Rainfall TARP (PID 53140) • Reading horizontal displacement from an extensometer (PID 53071) • Reading vertical displacement from an extensometer (PID 53067) • Significant Inflow of Water TARP (PID XXXXX) • Stability groundwater level TARP (PID 53141) • Water quality and flow monitoring (PID 53065)	• See GCMP for specific details on each element	• Monitoring will be completed in line with the GCMP which will be revised by geotechnical engineer as relevant risks are eliminated or reduce
Gross pollutant trap - MMD	CC 245 Maintain, integrity & design – MMD Engineering-Geotechnical	See summary above		

	Inspections (Inc. MMD redesign)			
Hazard: Site Security				
Final landform design	CC 119 - Design - Geometry of Batters, Benches, Embankment, Levees and Rehabilitation Design	• Major batter / rehabilitation or embankment instability or failure. • Increased frequency or pattern of small-medium scale batter instabilities and / or failures. • Identification of unfavorable ground conditions (e.g. previously unknown geological structures or firehole presence not anticipated or sufficiently catered for in the adopted design configuration and / or management processes). • Defect mapping (PID 52113) • Defect mapping at Hazelwood Mine for the structural geological model (PID 52113) • Ground control management plan (GCMP v5- 2019) (PID 56966) • PID 53211 – Stability Analysis	• See GCMP for specific details	• Monitoring will be completed in line with the GCMP which will be revised by geotechnical engineer as relevant risks are eliminated or reduce
Emergency access routes		• Emergency Response Plan – Hazelwood Project (PID: 55545) • Fire Instructions - Mine (PID: 2758). • Ensure a trained and competent person available 24/7 • Resources allocated for critical roles in emergency management team • Upon declaration of an Emergency Implement Significant Issue Management Response Team	• See specific details in the FRMP	• Annual inspections and maintenance as required

7 Post Closure Monitoring Costs

The cost of monitoring and maintenance during the post closure phase, along with the costs associated with rehabilitating the MIN5004 area following adverse events, is expected to be funded through the Declared Mine Fund, as outlined in Chapter 19 of the DMRP. **Error! Reference source not found.**

The specific monitoring and maintenance activities that will be conducted during the post-closure phase will ultimately depend upon the implementation of ENGIE Hazelwood's proposed final rehabilitation works and prevailing site conditions at the relevant time. However, examples of post-closure monitoring and maintenance activities that are currently anticipated to be carried out during the post-closure phase include (on a non-exhaustive basis):

Post-closure monitoring activities	Pit lake water quality and water balance monitoring Surface water quality monitoring (e.g. through monitoring of any discharges from the pit lake, and monitoring of water quality in adjacent waterways, where a connected lake is implemented) Ground movement and surface deformation monitoring (e.g. through LiDAR monitoring) Ongoing leachate monitoring (as required) Monitoring of local and regional environment (as required)
Post-closure maintenance activities	Maintenance of pit lake level through top-up water sources (i.e. to offset losses from evaporation), including maintenance of interconnection infrastructure (where a connected lake is implemented) Management of areas above the final pit lake level in relation to erosion and drainage Maintenance of pumping network (as required) Maintenance of any site security, fencing and general safety requirements

In the course of reviewing and updating the DMRP during the active and passive rehabilitation phases of the project, ENGIE Hazelwood will also consider the range of possible adverse events that may occur during the post-closure phase, and the costs associated with rehabilitating the MIN5004 area following those events. This will be informed by the risk assessment undertaken by ENGIE Hazelwood for the purposes of the DMRP (which is expected to be updated over time), including in relation to adverse events such as natural disasters and third party activities (e.g. arson).

The costs associated with post-closure monitoring and maintenance activities, and with rehabilitating the MIN5004 area following adverse events during the post-closure phase, are not currently known and cannot be accurately estimated at the time of this DMRP.

The scope of these activities and events will ultimately depend on the observed conditions at the Hazelwood site over the course of ENGIE Hazelwood's final rehabilitation works (both during their implementation, and once the pit lake landform has been established). ENGIE Hazelwood's understanding of these activities and events (along with associated cost estimates) will therefore evolve over time.

However, in applying for a determination that the closure criteria for the Hazelwood Mine have been met, ENGIE Hazelwood will ultimately be required to provide the Minister with sufficient information to determine any amount that ENGIE Hazelwood must contribute to the Declared Mine Fund, including estimated costs associated with post-closure monitoring and maintenance activities, and adverse events, within the MIN5004 area.

8 Abbreviations

Table 8-1 Abbreviations

Acronym	Definition
AHD	Australian height datum
ALARP	As Low as Reasonably Achievable)
AMPA	Aminomethylphosphonic acid
ANCOLD	Australian National Committee on Large Dams
BESS	Battery Energy Storage System
CCPS	Critical Control Performance Standards
CEMP	Construction Environmental Management Plan
CFA	Country Fire Authority
CHMP	Cultural Heritage Management Plan
COD	Chemical Oxygen Demand
CTD	YSI CastAway
DEECA	Department of Energy Environment and Climate Action
DMRP	Declared Mine Rehabilitation Plan
EC	Electrical conductivity
EES	Environment Effect Statement
EMP	Environmental Management Plan
EOD	External (or Eastern) Overburden Dump
EPA	Environment Protection Authority
ERM	ERM consultants – Environmental Resource Management
FRMP	Fire Risk Management Plan
GC	Ground Control
GCMP	Ground Control Management Plan
GIS	Geographic Information System
HARA	Hazelwood Ash Retention Area and associated pipelines
HARE	Hazelwood Ash Retaining Embankment (within mine void)
HCP	Hazelwood Cooling Pond
HPB	Hazelwood Power Block
HRP	Hazelwood Rehabilitation Project
ICMM	International Council on Mining and Metals
LEMP	Landfill Environmental Management Plan
LW	longwave
MFAS	Morwell formation aquifer system

MLRA	Mine Land Rehabilitation Authority
MMD	Morwell Main Drain
MRSD	Mineral Resources Sustainable Development Act 1990
OB	Overburden
OCP & OPP	Organochlorine Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PCMMP	Post Closure Monitoring and Maintenance Plan
PFAS	Per- and polyfluoroalkyl substances
POPC	Persistent Organic Pollutant Contaminants
PSI	Preliminary site investigation
RAMP	Risk Assessment Management Plan
RAP	Registered Aboriginal Party
RCP	Rehabilitation Concept Plan
RL	Reduced Level (referenced to AHD)
RMP	Hazelwood Risk Management Plan
SAQP	Sampling Analysis and Quality Plan
SEPP	State Environment Protection Policy
SFAIRP	So Far as Is Reasonably Practicable
SPR	Source Pathway Receptor
SVOC	Semi-Volatile Organic Compounds
SW	shortwave radiation
SWOP	Saline Water Outfall Pipeline
TARP	Trigger Action Response Plan
TDS	Total Dissolved Solids
TFAS	Traralgon Formation Aquifer System
TL1	Trigger Level 1
TL2	Trigger Level 2
TRH	Total Recoverable Hydrocarbons
TSF	Tailing Storage Facility
VOC	Volatile Organic Compounds
AHD	Australian Height Datum

Appendix B – Post Closure Risk Register

{Refer to *Appendix I – DMRP Risk Register*}