

Annual Environmental Performance Audit Report 2021

McArthur River Mine, Independent Monitor

Department of Industry, Tourism and Trade

15 March 2022

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Annual Environmental Performance Audit Report 2021
15 March 2022

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Executive Summary

This Annual Environmental Performance Audit Report (AEPAR) presents findings on the environmental regulatory compliance of the McArthur River Mine (Mine), considering the activities of McArthur River Mining Pty Ltd (MRM) and the Northern Territory (NT) Department of Industry, Tourism and Trade (DITT), during the audit period 01 May 2020 to 30 April 2021.

The primary objective of this AEPAR is to provide transparency to the community in assessing whether the Operator and DITT are fulfilling and managing compliance-related environmental obligations. This AEPAR also identifies areas for improvement in environmental compliance.

This audit has been conducted by the Independent Monitor (Advisian Pty Ltd), the role of which is to assess compliance against regulatory conditions, recommendations and commitments. This AEPAR reviews the activities undertaken by both the Operator and DITT to meet regulatory and non-regulatory obligations. In addition, the Independent Monitor is to report any environmental issues requiring investigation.

The 2021 AEPAR found that both MRM (Operator) and DITT had a high level of compliance with regulatory approval requirements during the audit period. Based on the audit findings and review by the relevant experts, the McArthur River and its tributaries were considered to be in good health. The audit did not identify any environmental issues or risks of concern that would require immediate attention or significant changes to the current environmental management and monitoring regime.

Findings - General

No significant environmental issues requiring urgent investigation and attention were found to have occurred during the audit period based on discussions and the documentation reviewed.

This AEPAR examined 1,055 conditions, requirements and individual elements contained in the Authorisation, Waste Discharge Licence (WDL) and NT Environment Protection Authority (EPA) recommendations, and 524 active requirements were identified. Out of these active requirements, 39 part compliances were identified where the Operator or DITT did not meet a small number of elements of the condition or requirement.

The continued attention on key environmental risk areas by the Operator and DITT has resulted in improved performance during the audit period. This involved continued implementation of management actions to avoid or reduce environmental risks, including in relation to historical air quality emissions associated with the North Overburden Emplacement Facility, which was a key environmental management issue at the Mine in the past.

Each section of this AEPAR describes the Independent Monitor's findings and relevant opportunities that may support continuous improvement. The listed opportunities for improvement are considerations proposed to enhance compliance, noting these are not mandatory requirements. Successes achieved by the Operator and DITT that exceed regulatory compliance and have contributed to improved environmental outcomes have also been noted.

Findings – Operator Compliance Performance

Variation of Authorisation

The Independent Monitor reviewed the Operator's compliance across 221 Authorisation conditions. Based upon the Authorisation audit, the Operator attained a high level of compliance (96%) with the Authorisation conditions across key mining operational activities. This finding is an indicator of the level of environmental performance achieved by the Operator.

The key findings in relation to the assessment of Environmental Aspects and Operator Domains are outlined below with further detail provided in the main report.

Environmental Aspects

Environmental Aspects are defined as environmental or community receptors that may be protected by relevant conditions or impacted if the conditions are not met.

The *Monitoring and Reporting* Environmental Aspect was included by the Independent Monitor to capture conditions relevant to determining compliance of many Authorisation conditions not captured by the other eight aspects.

The *Community* Environmental Aspect had the highest compliance score of 99%, based on 17 active conditions. There was one part compliance condition related to a lack of evidence of 'no unauthorised entry' warning signage along the length of the shipping channel and in the immediate area surrounding the shipping channel and swing basin at the Bing Bong Loading Facility (BBLF). However, this is an operational safety and administrative aspect rather than an environmental aspect.

The Environmental Aspects with the lowest compliance scores were the:

- *Marine* Environmental Aspect (90%), as fluvial sediment data had not been submitted to DITT on a quarterly basis, and the Water Management Plan monitoring activities were not implemented in-full due to COVID restrictions or equipment issues
- *Aquatic Fauna* Environmental Aspect (83%), due to only three active conditions
- *Air Quality* Environmental Aspect (91%), due to a gap in evidence for addressing dust risks during exploration activities, some air quality monitoring not implemented, and lack of progress for some dust control measures.

The *Monitoring and Reporting* Environmental Aspect achieved a compliance score of 94% from 94 active conditions. The part compliances were most commonly due to available data not having been submitted quarterly to DITT¹, lack of documentation sighted by the Independent Monitor for some elements of the Independent Certifying Engineer (ICE) role (including construction reports), and some minor components of water or air quality monitoring was not undertaken due to COVID site restrictions or equipment issues.

The *Vegetation and Rehabilitation* Environmental Aspect was assessed as achieving a compliance score of 96%. Lack of documentation sighted by the Independent Monitor in relation to the condition

¹ Monitoring data was submitted as part of the annual Environmental Monitoring Report.

requiring rehabilitation of disturbance from the drilling and site investigation activities caused this lower score.

The *Surface Water* Environmental Aspect was assessed as achieving a compliance score of 97%, based on 80 active conditions. There were 10 conditions with part compliances that related to: some monitoring data not having been submitted to DITT quarterly²; requirements relating to commissioning of Eastern Perimeter Run Off Dam (EPROD) not being met; the EPROD construction report not being submitted; some records relating to a few minor acidic and metalliferous drainage (AMD) storages not being readily available; some documentation not addressing erosion and sediment control relating to exploration management; and, some monitoring program elements not implemented in full.

The *Waste* Environmental Aspect includes the management of waste rock in the overburden emplacement facilities, an area of high potential environmental risk if controls are not adequately implemented. Against the 87 active waste-related conditions, the Operator had a compliance level of 97%, which is an indication that the Operator is providing adequate resources and focus to activities which have the highest potential environmental risks.

The *Groundwater* Environmental Aspect attained a compliance score of 99%, attributable to metering of all bores for dewatering activities not completed until after the audit period.

Operator Domains

Operator Domains are defined as areas of the mineral lease that are distinguished by an operational activity and are utilised by the Independent Monitor to examine different areas of the mine site.

The *Tailings Storage Facility* and *Overburden Emplacement Facilities* Operator Domains have the highest potential environmental risk profiles and correspondingly the highest levels of regulation, reflected in the numbers of active conditions (43 and 53 respectively). The *Tailings Storage Facility* and *Overburden Emplacement Facilities* Operator Domains achieved Authorisation compliance scores of 95% and 96% respectively. This level of compliance is an indication that the Operator is focussing resources and effort to activities and areas which have the highest potential environmental risk.

Governance activities are the requirements and procedural elements of the regulatory conditions that provide an overarching means to achieve compliance and environmental performance outcomes. There are 62 active conditions relevant to the *Governance/General* Operator Domain, which achieved an Authorisation compliance score of 94%.

The *Open Pit/Underground Workings* Operator Domain was assessed as achieving a lower compliance (88%) with the Authorisation conditions, compared with other Operator Domains. One of the two relevant active conditions scored 3 – *Part Compliance (high)*. The part compliance findings were due to not all borefield dewatering being metered during the audit period, which has since been addressed by the Operator.

Waste Discharge Licence

The audit assessed the Operator as having a high level of overall compliance with the WDL conditions, at 98%. The five WDL sections of grouped conditions that achieved high to full compliance were

² The Authorisation requirement is for surface water monitoring data to be submitted quarterly, however the data was included as part of the annual Environmental Monitoring Report.

operational (100%), discharges (100%), monitoring (98%), recording and reporting (99%), and performance improvement (97%).

The WDL *General* section was assessed as achieving lower compliance when compared with the other WDL sections, at 93%. This was predominately due to administrative issues whereby the revised version of the Emergency Response Plan (ERP) was not submitted to NT Department of Environment, Parks and Water Security (DEPWS) within 10 business days as required by the condition, noting the changes to the ERP were sections not specifically relating to the WDL and had negligible environmental risk.

NT EPA Recommendations

The Operator's compliance with the implementation of the NT EPA recommendations was assessed by examining compliance against those recommendations that have been adopted as Authorisation conditions. An overall compliance of 96% was attained by the Operator for the Authorisation conditions incorporating the NT EPA recommendations.

Voluntary Commitments

Voluntary environmental commitments made by the Operator are included in the Mining Management Plans (MMP), Operational Performance Report (OPR), and the Environmental Monitoring Report (EMR)³. These commitments are not strictly regulatory requirements but are voluntary actions and opportunities identified by the Operator to further improve environmental outcomes. The implementation status of each commitment is provided by the Operator in annual registers within the EMR.

The EMR contains 230 commitments. Of these, a total of 161 commitments are identified as ongoing, six commitments are identified as complete, 63 commitments are identified as future requirements, and eight commitments are identified as incomplete. The key opportunities for improvement for tracking and reporting of the implementation of commitments include:

- Consolidation of the MMP's commitments (refer to MRM EMR 2020-2021, Appendix L and Appendix M) into a single commitment register for reporting against future EMRs, and rationalise these commitments to avoid duplication
- Clear indication in the commitments register where a commitment is closed out with no further action proposed.

The majority of the Operator's reported commitments are adequately addressed through the EMR.

While improvements from the 2020 ERP/OPR are apparent, management could further benefit from consolidation and rationalisation of the commitment register, along with clearer tracking and reporting of commitments.

Risk Management Process

The Risk Management Plan provides the Mine with a comprehensive process and appropriate environmental risk management framework, in accordance with the international risk standard, ISO

³ The Operational Performance Report and Environmental Monitoring Report prepared by the Operator are understood to meet the requirements of an Environmental Mining Report under section 37(4) of the MMA.

31000 (2018) *Risk Management*. The Environmental Risk Assessment Register contains appropriate identification, risk analysis and proposed controls for the Mine's key environmental risks.

Strengthening the monitoring and review steps in the risk management process would further assist the verification of the implementation of risk control measures. This could be achieved by conducting regular formal environmental risk assessment reviews of the effectiveness of risk control actions taken, risk status and risk profile trends, to build upon the existing risk processes and to demonstrate continuous improvement.

Findings – DITT Compliance Performance

Authorisation

DITT achieved a high level of overall compliance (95%) against the 61 active Authorisation conditions. DITT achieved high to full compliance for four out of six Authorisation sections, namely *General* (95%), *Environment and Independent Monitoring* (100%), *Overburden Management Project* (96%) and *Mine Closure* (100%).

The *Tailings Storage Facility* (TSF) section was assessed as achieving a lower compliance score at 93% due to DITT not ensuring that the Operator had delivered construction reports in a timely fashion.

NT EPA Recommendations

DITT's responsibilities include ensuring the Authorisation conditions are not contrary to the NT EPA recommendations and that the intent of the NT EPA recommendations has been addressed. The audit found DITT had effectively incorporated the NT EPA recommendations into the Authorisation conditions. A compliance score of 97% was achieved.

To improve the compliance score, the NT EPA recommendation details not explicitly stated in the Authorisation conditions should be incorporated into a DITT process to assist capturing the NT EPA recommendations details to facilitate implementation of the specific requirements.

Regulatory Approach

DITT achieved some significant regulatory enhancements as a result of more than two years of strategic planning and work with the Operator. The key improvement noted during this audit period was the overhaul and rationalisation of the Authorisation conditions to make the Authorisation a more useable document by removing duplication, the consolidation of related requirements into single sections, and the removal of cross-referencing. Additionally, the EMR format was revised to include a holistic assessment of environmental performance utilising a conceptual site model to bring together monitoring data to determine environmental risk.

The review found DITT continued to have a strong focus on key environmental risks and a practical approach to compliance and monitoring. Continuous improvement and high levels of compliance by the Operator can be attributed, at least in part, to the processes and approach adopted by DITT.

Similar to the previous AEPAR findings, some opportunities were identified in relation to making DITT activities more efficient, especially recurring regulatory processes. The potential benefit of greater efficiency and proceduralising regulatory activities would be to enhance the management of complex regulatory requirements such as timing of due dates, submissions, approvals, decisions, public

/community engagement, monitoring data and records. Potential efficiency gains would enable greater focus on the implementation of further initiatives to enhance the Mine's compliance.

DITT would benefit from developing a procedure for the regulation of the Authorisation conditions and NT EPA recommendations to document the processes to assist management of the complex regulatory requirements relating to timing of due dates, overdue submissions, approvals, decisions, public /community engagement, monitoring data and records.

Findings – River Health

The monitoring and management actions conducted by the Operator included a comprehensive range of programs to detect and manage potential impacts to protect the aquatic ecosystems and beneficial uses of the McArthur River. The Independent Monitor found that the monitoring and management actions were well-implemented and where impacts were noted, they were adequately described, whilst the mitigation actions recommended were consistent with the approved Trigger Action Response Plans.

A general assessment on river system health, as it relates to fish health and general aquatic ecology, was undertaken based on the information provided by the Operator. Overall, the McArthur River and its tributaries were considered to be in good health.

Notwithstanding the overall good health of the river system, in 2020-2021, metals above the maximum permitted concentration levels⁴ were detected in environmental indicator species, including bony bream at one location on Barney Creek, and in two specimens of eastern rainbowfish at another location on Barney Creek.

Monitoring program data collected during 2020-2021 found that all other fish from the McArthur River catchment taken outside the mineral lease boundary had low levels of metals, with corresponding low risks to human health through consumption of the fish.

The following freshwater monitoring programs have been continuous since their commencement: macroinvertebrates (started 2008); aquatic fauna diversity and abundance (started 2006); metals in aquatic fauna (started 2005); and, sawfish and barramundi acoustic (started 2001). The overarching objectives for freshwater aquatic ecosystem health and the beneficial uses of the McArthur River have guided the monitoring activities, and the changes implemented have broadened and strengthened the management and monitoring programs as they have evolved.

The management action undertaken to remove potentially contaminated sediments from a tributary to McArthur River (Barney Creek channel) appears to have contributed to protecting downstream beneficial uses and environmental values.

Consistently high levels of metals have been recorded in mussels in most river catchments throughout the region. It is considered unlikely that sufficient numbers of mussels could be collected and consumed to cause a detrimental health effect. Regardless, due to the high levels of naturally-occurring metals found in the mussels in the region, it is suggested that intake should be limited, consistent with findings from previous reports.

⁴ Maximum permitted concentration levels, as prescribed by the Australia New Zealand Food Standards Code - Standard 1.4.1.

The 2020-2021 monitoring findings showed that it was safe for people to eat commonly-fished animals from the McArthur River, namely barramundi, sooty grunter and cherabin (giant freshwater prawn).

Comparative Analysis 2020 and 2021

The findings of the 2020 and 2021 AEPARs were examined to identify and assess any improvement or deterioration in the findings of the Authorisation, WDL, NT EPA recommendations and river health sections of the AEPAR.

The Operator has marginally increased the overall compliance score by 1% for both the Authorisation and the WDL. This slight improvement was achieved by focussed attention on part compliances and corresponding Opportunities for Improvement (OFIs) contained in the previous AEPAR. The total number of Operator OFIs reported in the 2020 AEPAR was 30, increasing to 43 in 2021. Five Operator OFIs have been carried over from 2020.

DITT has marginally decreased the overall compliance score by 2% for the Authorisation. Despite the slightly lower score in 2021, DITT has attained a high level of Authorisation compliance at 96%. DITT's overall compliance score for NT EPA recommendations in 2021 decreased by 1% to 97%. The total number of DITT OFIs was 27 in the 2020 AEPAR, which is the same number raised in 2021. Nine DITT OFIs have been carried from 2020.

Consistent with the river system health findings reported in the 2020 AEPAR, the Independent Monitor's audit and review outcomes indicate:

- No observable decline in freshwater aquatic fauna species diversity and abundance
- Aquatic ecosystems of the McArthur River and its tributaries are in good condition
- Exceedances of metal concentrations were limited to two sites on Barney Creek, both located adjacent to mining activities within the mineral lease boundary
- An extremely low risk to human health from consuming the monitored fish species caught in the McArthur River catchment, in the vicinity or immediately downstream of the mineral lease.

Stakeholder Engagement

The Independent Monitor engaged with the community in May 2021 to communicate the findings of the 2020 AEPAR.

Hard copies of the Annual Report Card (a plain English visual summary report of the full AEPAR) were presented to stakeholders. Community members provided feedback that the Annual Report Card enabled the local community improved access to the Independent Monitor outcomes.

As river health was identified as a key interest of the local community, community members were consulted about the findings relating to the health of the McArthur River fish and mussels; however, none of the community members who were engaged mentioned any concerns with the findings relating to these issues.

Future

A large proportion of Authorisation conditions (508 of 790), WDL conditions (22 of 148) and NT EPA recommendations (27 of 117) were not active during the audit period as they related to 'future' requirements, subject to the approval of the Overburden Management Project (OMP).

The OMP was approved in the Authorisation (dated 13 November 2020), which triggered future statutory timeframes for a number of extra environmental management requirements for the Operator and DITT. The environmental compliance of the Mine against these recently-commenced regulatory requirements will be assessed in subsequent AEPARs.

In addition to preparation of an AEPAR, the scope of works for the Independent Monitor in 2022 is planned to include a review and audit of the waste rock handling procedures and the aquatic ecosystem program.

Additionally, subject to the timing of the establishment of the independent panel(s) of experts, the Independent Monitor's scope of works includes a review and audit of whether the panels have satisfied the Authorisation requirements for the:

- Tailings Storage Facility
- Northern Overburden Emplacement Facility
- Closure planning.

Conclusion

This 2021 AEPAR provides a compliance audit of the Mine by assessment against regulatory requirements, including the Authorisation, WDL and NT EPA recommendations. This AEPAR also reviewed the Operator's commitments, DITT's regulatory approach, and the health of the McArthur River system. A comparison between the findings of the 2020 and 2021 AEPARs was undertaken to assess any changes in environmental performance.

The Operator's high level of compliance with the Authorisation and WDL conditions across all key operational activities is a measure of the level of fulfillment of regulatory requirements. The Operator has marginally increased the overall compliance scores by 1% from the 2020 AEPAR, for both the Authorisation and the WDL.

Consistent with the river system's health findings reported in the 2020 AEPAR, the McArthur River and its tributaries overall were considered to be in good health. Exceedances of metal concentrations were limited to two sites on Barney Creek in areas immediately adjacent to operational areas within the mineral lease boundary, where public access is not permitted and that poses a low risk to human health but will require ongoing management.

For the part compliances identified for the Operator, none were considered to be of a significant environmental issue consequence requiring urgent investigation or attention. The majority were of an administrative nature (e.g. relating to the submission of data to DITT) and of no physical environmental consequence.

The environmental performance of both the Operator and DITT is fundamentally linked to the level of compliance achieved against Authorisation and WDL conditions, specifically designed to safeguard the environmental values of the McArthur River and protect the health of the McArthur River from the

potential impacts of the mine. Based on the documentation reviewed, where the review found the Operator or DITT had attained part compliance, the Independent Monitor identified opportunities that support continuous improvement. The opportunities outlined in this AEPAR are considerations for potential enhancements in environmental compliance and performance.

Acronyms and Abbreviations

| Acronym or Abbreviation | Definition |
|-------------------------|--|
| AEPAR | Annual Environmental Performance Audit Report |
| AMD | Acidic and Metalliferous Drainage |
| AMP | Adaptive Management Plan |
| AAPA | Aboriginal Areas Protection Authority |
| Aspect | Environmental Aspect - environmental or community receptor e.g. air quality or surface water |
| BBLF | Bing Bong Loading Facility |
| BBRA | Broad Brush Risk Assessment |
| Bridging MMP | Mining Management Plan, McArthur River Mine, 31 January 2019 |
| CCC | Cross Cultural Consultants |
| CRG | Community Reference Group |
| DAWE | Department of Agriculture, Water and the Environment (Commonwealth), formerly Department of the Environment and Energy |
| DEPWS | Department of Environment, Parks and Water Security (NT) |
| DITT | Department of Industry, Tourism and Trade (NT) |
| Domain | Operator Domain – an operational area of the Mine, e.g. Tailings Storage Facility |
| EC | Electrical Conductivity |
| EIS | Environmental Impact Statement |
| EMP | Environmental Management Plan |
| EMR | Environmental Monitoring Report (in place from 2019-20 onwards, replacing the Operational Performance Report) |
| EMU | Environmental Monitoring Unit (DITT, Mining Operations) |
| EPROD | Eastern Perimeter Run-Off Dam |
| ERP | Emergency Response Plan |
| ESDAT | DITTs environmental monitoring database system |
| HSEC | Health, Safety, Environment and Community |
| ICE | Independent Certifying Engineer |
| ITP | Inspection and Test Plan |
| ITRB | Independent Tailings Review Board |
| JSA | Job Safety Analysis |
| JSEA | Job Safety and Environment Analysis |
| LWD | Large Woody Debris |

| Acronym or Abbreviation | Definition |
|-------------------------|---|
| Mine | McArthur River Mine |
| Minister | NT Minister for Mining and Industry |
| MMA | <i>Mining Management Act 2001</i> (NT) |
| MMP | Mining Management Plan |
| NOEF | Northern Overburden Emplacement Facility |
| NT | Northern Territory |
| NT EPA | Northern Territory Environment Protection Authority |
| OFI | Opportunity for Improvement |
| OMP | Overburden Management Project |
| OMS | Operations, Maintenance and Surveillance (hard copy manual) |
| Operator | McArthur River Mining Pty Ltd |
| OPR | Operational Performance Report (in place until 2018-19, superseded by the Environmental Monitoring Report from 2019-20) |
| QA | Quality Assurance |
| QC | Quality Control |
| RMP | Rehabilitation Management Plan |
| SPR | Source-Pathway-Receptor (conceptual model) |
| SSTV | Site-Specific Trigger Value |
| TARP | Trigger Action Response Plan |
| TERC | Territory Economic Reconstruction Commission |
| TSF | Tailings Storage Facility |
| TWG | Technical Working Group |
| Authorisation | Variation of Authorisation issued under the <i>Mining Management Act 2001</i> (NT) |
| WDL | Waste Discharge Licence, issued under the <i>Water Act 1992</i> (NT) |
| WMD | Water Management Dam |

1 Introduction

1.1 Purpose and Objective

This AEPAR presents findings on the regulatory compliance of the Mine during the audit period, 01 May 2020 to 30 April 2021. This audit period coincides with the reporting period for the 2021 EMR. The audit considers the activities of the Operator and the NT DITT. This AEPAR has been prepared by the Independent Monitor.

The primary objective of this AEPAR is to provide transparency to the community in assessing whether the Operator and DITT are fulfilling and managing compliance related to the Mine's environmental obligations. This audit also identifies areas for environmental compliance performance improvement.

1.2 McArthur River Mine Overview

The Mine is located on one of the world's largest deposits of zinc and lead, approximately 970 kilometres south-east of Darwin. The closest community is Borroloola, which is about 65 kilometres north-east of the Mine. The McArthur River mining operation includes an open cut mine, processing plant, tailings storage, and overburden emplacement facilities. Zinc and lead are mined and processed at the Mine and trucked to the Bing Bong Loading Facility (BBLF) on the Gulf of Carpentaria. The mineral concentrate is loaded onto a barge and transported to deeper water for transferring onto bulk carrier export vessels.

1.3 Methodology

The following actions were undertaken by the Independent Monitor in preparing this AEPAR:

- Audit of the level of compliance of the Operator and DITT against regulatory approval conditions in the Variation of Authorisation 0059 (Authorisation), issued under the *NT Mining Management Act 2001* (MMA) and regulated by the DITT (516 conditions and sub-conditions for the Operator and 274 conditions and sub-conditions for the DITT)
- Audit of the level of compliance of the Operator against regulatory approval conditions in the Waste Discharge Licence Number 174, issued under the *NT Water Act 1992* and regulated by the NT DEPWS (148 conditions and sub-conditions)
- Audit of both the Operator and the DITT on the implementation of the NT EPA recommendations provided in Assessment Report 86, McArthur River Mine Overburden Management Project, July 2018 (117 recommendations and sub-parts for the DITT)
- Review of the Operator's implementation of other environmental commitments
- Review of DITT's regulatory approach
- Review of the health of the McArthur River system in the vicinity and downstream of the Mine.

Additional to the 2020 scope, the 2021 AEPAR included:

- Review of the Operator's environmental risk management process
- Review of the findings of the 2020 AEPAR and 2021 AEPAR in comparison with one another
- Review of the status of the 2020 AEPAR OFIs list for both the Operator and DITT.

Stakeholder engagement with Borroloola community residents was completed by Cross Cultural Consultants Pty (CCC) on behalf of the Independent Monitor in May 2020. As part of the engagement, CCC presented the results of the 2020 AEPAR, gathered feedback on the engagement approach and informed the Borroloola community on proposed engagement for the 2021 AEPAR.

The Independent Monitor audits are planned to occur annually. The detailed findings will be reported in the AEPAR and key findings will be presented in an 'Annual Report Card'. Both the AEPAR and Annual Report Card will be made publicly available.

1.4 Regulatory Requirements

1.4.1 Variation of Authorisation

Authorisation 0059 issued under the MMA to the Operator for the McArthur River Mine is the principal mechanism that enables DITT to regulate the Mine's operation.

During the audit period of this AEPAR (01 May 2020 to 30 April 2021), three variations to the Authorisation dated 15 August 2019, 10 August 2020 and 13 November 2020 were issued subject to the MMA.

This audit focussed on compliance against the Authorisation, in effect as of the 13 November 2020 Authorisation, which aggregated all relevant conditions for the audit period and included new conditions addressing relevant aspects of the proposed mining operations submitted in the MMP amendment, dated 31 January 2020.

A number of Authorisation conditions are of relevance outside the audit period of this AEPAR. These have been noted as future requirements in this AEPAR.

1.4.2 Waste Discharge Licence

The WDL authorises the Operator to manage the controlled discharge of water to nominated water courses from authorised discharge points. Discharge is to consist only of wastewater from sources identified in the WDL. Water quality parameters are compared to the specified trigger values at nominated surface water monitoring locations. The WDL requires monitoring, measurement and reporting of water quality parameters at authorised monitoring points.

The WDL approval is under the *Water Act 1992* (NT) and is administered by DEPWS. The intention of the WDL is to regulate activities so that the Operator, in conducting the activity, does "all things reasonable and practical to ensure the activity does not adversely affect the Declared Beneficial Uses and Objectives and Sites of Conservation Significance."⁵ In other words, the intention of the Mine WDL is to regulate activities so that the Operator does all things reasonable and practical to ensure that discharges of water from the Mine do not adversely affect the McArthur River area.

The conditions contained in WDL 174-11 (dated 28 April 2019 to 28 April 2021) were in place during the audit period. The Operator's compliance against the relevant 148 WDL conditions and sub-conditions are presented in Section 3.3.

⁵ Waste Discharge Licence (WDL 174-11), Section 16.

1.4.3 NT EPA Recommendations

The NT EPA recommendations have a central aim of achieving the overarching environmental outcome that: "...requires the health of the McArthur River to be protected along its entire length at all times from mine related impacts...".⁶

The NT EPA recommendations are non-statutory requirements but contain proposed actions for both the Operator and DITT. The NT EPA recommendations were provided in the NT EPA's *Assessment Report 86, McArthur River Mine Overburden Management Project*, July 2018. In accepting the NT EPA recommendations of *Assessment Report 86*, the then Minister for Primary Industries and Resources took responsibility for implementing the recommendations that applied under the authority of the MMA.

The NT EPA recommendations under the direct control of the Operator have been adopted into statutory requirements as conditions of the Authorisation, dated 13 November 2021. As part of this audit, all NT EPA recommendations and sub-parts were reviewed against the Authorisation conditions to confirm whether the recommendations had been transferred into the Authorisation.

The NT EPA recommendations also provide matters for action by DITT as the agency responsible for the administration of the Authorisation under the MMA. This audit report reviews the levels of compliance of both the Operator and DITT in their implementation of the NT EPA recommendations.

⁶ NT EPA Assessment Report 86, McArthur River Mine Overburden Management Project, July 2018, page 30, Recommendation No.3.

2 Approach

2.1 Process

The audit was undertaken in alignment with the approach and principles of ISO 19011 (2018) *Guidelines for auditing management systems*. The key principles underpinning the audit included: integrity; fair presentation; due professional care; confidentiality; independence; and use of an evidence-based and risk-based approach.

The format of this audit had been designed to allow comparative evaluation between this AEPAR and subsequent years to readily identify year-on-year compliance performance improvements and/or indicate trends that may need to be addressed.

A quantitative audit was undertaken to assess compliance against the Authorisation and WDL conditions, as well as implementation of the non-statutory NT EPA recommendations. A qualitative review was undertaken to provide an assessment of the Operator's commitments, DITT's regulatory approach, and the overall health of the McArthur River system. The methodology and scoring guide are described in Section 2.2, below.

2.2 Quantitative Compliance Audit

The following steps were undertaken for the quantitative compliance audit, which assessed the level of compliance against the Authorisation conditions, WDL conditions and implementation of the NT EPA recommendations:

- All Authorisation and WDL conditions, sub-conditions and NT EPA recommendations were assigned to either the Operator, DITT or both, based on the party with the responsibility for meeting, or contributing to, each requirement.
- All Authorisation and WDL conditions, sub-conditions and NT EPA recommendations were assigned a status of active or inactive, based on whether the requirement was triggered and/or active during the audit period. Conditions yet to be triggered have been noted as future requirements, assigned as inactive, and were scored as not applicable. The number of active conditions assessed in future audits will increase as additional time, activity and approval-based triggers occur.
- Compliance audits were conducted through a combination of audit interviews with representatives of the Operator and DITT, and a review of sample documentation and selected relevant information obtained by the Independent Monitor through a Request for Information process. Due to COVID-19 travel restrictions, the audit interviews and evidence collection and review processes were undertaken remotely during the period of August 2021 to November 2021.
- The level of compliance of each active condition, sub-condition and NT EPA recommendation was assessed and given a score between 0 to 4, using the scoring guidelines presented in Table 2-1. In cases where more than one score was applicable for a condition, the most conservative (lowest) score was applied. Only active conditions and sub-conditions were considered in the calculation of the compliance scores.
- The scores for each active condition, sub-condition and NT EPA recommendation were aggregated against the highest potential total score to calculate overall compliance scores (%) for the Authorisation, WDL and NT EPA recommendations for both the Operator and DITT. Additional

analysis of Operator compliance against Operator Domains and Environmental Aspects was also undertaken for the active Authorisation conditions. This is described in Section 3.2.

- OFIs and notable successes were documented and are presented in Sections 3, 4 and 5. Typically, a non-compliance or part compliance finding will be accompanied by a related OFI; however, in some circumstances, an OFI has not been prepared because the situation has since been rectified or the requirement has been superseded.

Table 2-1: Compliance Scores and Guidelines

| Score | Description | Guidelines |
|-------|----------------------------|--|
| 0 | Non-Compliance | <ul style="list-style-type: none"> • Fails to meet all elements of the condition/requirement • Negligible/no evidence of action • Lack of plan to address condition/requirement • Represents high risk to the environment, Operator and/or DITT |
| 1 | Part Compliance (low) | <ul style="list-style-type: none"> • Fails to meet a majority of elements of the condition/requirement • Limited evidence of action • Limited plan to address condition/requirement • Represents high risk to the environment, Operator and/or DITT |
| 2 | Part Compliance (moderate) | <ul style="list-style-type: none"> • Fails to meet a number of elements of the condition/requirement • Medium level of evidence of action • Plan to address condition/requirement, but not fully implemented • Represents medium risk to the environment, Operator and/or DITT |
| 3 | Part Compliance (high) | <ul style="list-style-type: none"> • Fails to meet a small number of elements of the condition/requirement • High level of evidence of action • Implemented plan to address • Represents low risk to the environment, Operator and/or DITT |
| 4 | Full Compliance | <ul style="list-style-type: none"> • Full compliance based on sample evidence • All elements of the condition/requirement are met • High level of evidence of action • Represents negligible risk to the environment, Operator and/or DITT |

2.3 Qualitative Review

The qualitative reviews focussed on:

- The implementation of the Operator’s voluntary commitments (refer to Section 3.5)
- The Operator’s environmental risk management process (refer to Section 3.6)
- DITT’s regulatory approach (refer to Section 4.4)
- The overall health of the McArthur River system in the vicinity and downstream of the Mine (refer to Section 5).

As with the quantitative compliance audit, the qualitative reviews were conducted using a combination of audit interviews with representatives of the Operator and DITT, and a review of sample documentation and selected relevant information obtained through a Request for Information process. Due to COVID-19 travel restrictions, the interviews and evidence collection and review processes were undertaken remotely during the period of July 2021 to November 2021.

The findings of the qualitative reviews are presented as narratives in Sections 3.5, 3.6, 4.4 and 5. OFIs and notable successes are also documented in these sections.

2.4 Reference Documents

The main reference documents considered during the AEPAR review are listed in Table 2-2.

Table 2-2: Annual Environmental Performance Audit Report Key Reference Documents

| No. | Reference Document | Document Source |
|-----|--|-----------------|
| 1 | Adaptive Management Plan, McArthur River Mine (Appendix B of the Mining Management Plan, 31 January 2020 and March 2021) | Operator |
| 2 | Adaptive Management Plan, Appendix A – Water Management Plan | Operator |
| 3 | Adaptive Management Plan, Appendix B – Air Quality Management Plan | Operator |
| 4 | Adaptive Management Plan, Appendix C – Rehabilitation Management Plan | Operator |
| 5 | Environmental Monitoring Report (EMR), 2021, August 2021 | Operator |
| 6 | Mining Management Plan, McArthur River Mine, 31 January 2020 (excluding appendices) | Operator |
| 7 | Mining Management Plan, McArthur River Mine, 31 January 2019 (Bridging MMP) | Operator |
| 8 | NT EPA <i>Assessment Report 86</i> , McArthur River Mine Overburden Management Project, July 2018 | NT EPA |
| 9 | <i>Variation of Authorisation 0059</i> , dated 15 August 2019, reflecting acceptance of NT EPA recommendations in Assessment Report 86 as conditions 106 to 133 and approval of remaining activities in the Bridging MMP | DITT |
| 10 | <i>Variation of Authorisation 0059</i> , dated 10 August 2020, noting conditions included those to reflect approval of the MMP amendment January 2020 Version 1, as related to construction of TSF Cell1, Stage 5 lift only. | DITT |
| 11 | <i>Variation of Authorisation 0059</i> , dated 13 November 2020, noting conditions included those to reflect approval of the MMP amendment January 2020 and the authorisation of the OMP | DITT |
| 12 | <i>Waste Discharge Licence 174-11</i> , dated 28 April 2019 | DEPWS |

2.5 Review Team

Advisian Pty Ltd (Advisian) was appointed to the Independent Monitor role in December 2019. Representatives of the Independent Monitor visited the Mine and the BBLF in March 2020 for project inception meetings and site orientation. Since that time, no further Independent Monitor site visit has been practical due to COVID-19-related interstate and local travel restrictions.

The AEPAR team consisted of staff from Advisian and sub-consultants with relevant experience and qualifications (refer to Table 2-3).

Table 2-3: Annual Environmental Performance Audit Report Review Team Members

| Role | Qualifications | Number of Years' Experience |
|---------------------------------|------------------------------------|-----------------------------|
| Lead Environmental Auditor | B. Eng., M.Env.Mgmt | 29 |
| Senior Environmental Auditor | B. Eng. (Hons 1), PhD (Eng) | 21 |
| Assistant Environmental Auditor | B.Eng.Env. (Hons), MBA Tech Mgt | 21 |
| Stakeholder Engagement Lead | B.Soc.Sc. (Hons) | 21 |
| Stakeholder Engagement Lead | B.Hlth Sc. (Env Health), BSc (AES) | 18 |
| Data Analyst | B.Eng., M.Env.Mgmt | 9 |
| Data Analyst | B. Env Science., M.Env.Eng | 16 |
| Community Engagement Lead | B. Indigenous Community Mgmt | 19 |
| Aquatic Ecologist | B. Aqua Sci (Hons), PhD Aqua Sci | 21 |
| Technical Reviewer | B. Eng., M.Env.Eng (Hons) | 26 |

2.6 Stakeholder Engagement

A Stakeholder Engagement Plan was prepared to guide community and stakeholder engagement and communications for the Independent Monitor. A NT-based Aboriginal business, CCC, was appointed to facilitate community engagement throughout the Independent Monitor process. The Stakeholder Engagement Plan nominated community consultation activities to align with the key Independent Monitor outputs and activities. The stakeholder engagement activities and findings are discussed in Section 8.

3 Review of Operator

3.1 Objective

The objective of the review of the Operator is to assess the level of compliance of the Operator against the relevant conditions of the Authorisation, WDL and NT EPA recommendations. It is also to review the performance of the Operator against relevant commitments contained in the MMP and EMR.

3.2 Variation of Authorisation – Operator Compliance Audit

3.2.1 Scope and Approach

The Operator was assessed against the regulatory conditions contained in the Authorisations (dated 15 August 2019, 10 August 2020 and 13 November 2020) over the audit period using the quantitative audit approach and scoring criteria described in Section 2.2. An analysis of the three Authorisations was undertaken to determine which conditions from each should be included in the audit. All of the conditions in the 13 November 2020 Authorisation were included, along with any conditions from the 10 August 2020 Authorisation where an equivalent 13 November 2020 condition did not exist. All conditions in the 15 August 2019 Authorisation were included within the 10 August 2020 Authorisation, therefore there were no conditions included in the audit that were solely from the 15 August 2019 Authorisation.

Compliance evidence was gathered for the 13 November 2020 Authorisation, for the dates relevant to each condition relating to the audit period (i.e. 13 November 2020 to 30 April 2021). A condition in the 13 November 2020 Authorisation that did not have an equivalent condition in an earlier Authorisation only required evidence from 13 November 2020 onwards. Similarly, conditions from the 13 November 2020 Authorisation that had equivalent conditions in earlier Authorisations required evidence for the full audit period (i.e. 1 May 2020 to 30 April 2021). While conditions from the 10 August 2020 Authorisation that did not carry through to the 13 November 2020 Authorisation were assessed for compliance between 1 May 2020 and 13 November 2020.

The exception is Condition 113 from the 10 August 2020 Authorisation, as it was not included in the 15 August 2019 Authorisation. Evidence was thus only required from 10 August 2020 until 13 November 2020.

Further analysis was undertaken by categorising all Authorisation conditions and sub-conditions as either Environmental Aspects and/or Operator Domains.

Environmental Aspects are defined as environmental or community receptors that may be protected by relevant conditions or impacted if the conditions are not met. An additional Aspect, *Monitoring and Reporting*, was added for the purposes of the audit because of its relevance to many Authorisation conditions in determining compliance. The Environmental Aspects are:

- Air quality
- Surface water (rivers, creeks and artificial dams)
- Marine waters (BBLF and marine sediments)
- Groundwater
- Aquatic fauna

- Vegetation and rehabilitation
- Waste (mining overburden and general waste)
- Community
- Monitoring and reporting.

Operator Domains are defined as areas of the mineral lease that are distinguished by an operational activity and utilised by the Independent Monitor as a way to examine different areas of the mine site. In general, the Operator Domain names used in this compliance audit align with those used by the Operator in management plans, monitoring programs and reporting. An additional Domain, *Governance/General*, was added to categorise conditions which have overarching management oversight, and/or apply to multiple Domains. The Operator Domains are:

- Governance/General
- Open Pit/Underground workings
- Tailing's storage facility
- Water Management and Storages
- Overburden emplacement facilities
- Exploration
- Waterways (including river diversion)
- Bing Bong Loading Facility
- Non-Mineral waste management.

3.2.2 Findings

A summary of findings is shown in Table 3-1.

Table 3-1: Summary of Authorisation Compliance - Operator

| Description | No. |
|--|-----|
| Total number of conditions and sub-conditions relevant to Operator | 516 |
| Number of active conditions and sub-conditions during the audit period | 221 |
| Number of part compliances | 34 |
| Overall compliance score of active conditions | 96% |

Detailed audit findings, supporting evidence, part compliances and scores are contained in *Authorisation Compliance Workbook – Operator*, refer Appendix A.

A summary of the Operator's Authorisation compliance score for each Environmental Aspect is presented in Table 3-2 and Figure 3-1.

Table 3-2: Authorisation – Operator Compliance Scores by Environmental Aspect

| Environmental Aspect | Total No. of Conditions | No. of Active Conditions | Scores | Compliance (Active Conditions) |
|-------------------------------|-------------------------|--------------------------|--------|--------------------------------|
| Air Quality | 18 | 8 | 29 | 91% |
| Surface Water | 183 | 80 | 309 | 97% |
| Marine Waters | 7 | 5 | 18 | 90% |
| Groundwater | 55 | 22 | 87 | 99% |
| Aquatic fauna | 50 | 3 | 10 | 83% |
| Vegetation and Rehabilitation | 21 | 6 | 23 | 96% |
| Waste | 189 | 87 | 337 | 97% |
| Community | 39 | 17 | 67 | 99% |
| Monitoring and Reporting | 277 | 94 | 355 | 94% |

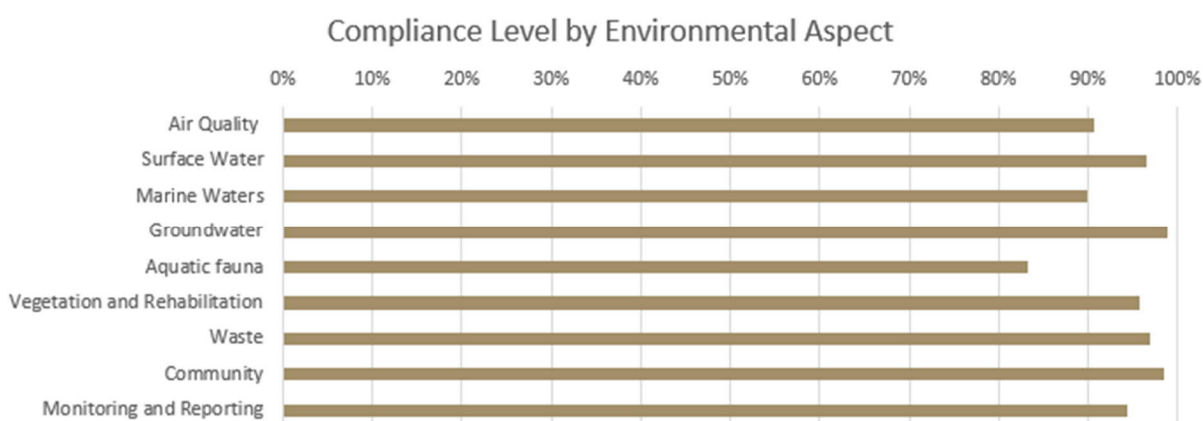


Figure 3-1: Authorisation – Operator Compliance Level Illustrated by Environmental Aspect

The overall high level of compliance with the Authorisation conditions across the Environmental Aspects is an indicator of a high level of fulfilment of regulatory requirements by the Operator. The key findings in relation to Environmental Aspects are outlined below and detailed audit findings for compliance levels and opportunities for all Environmental Aspects are presented in the *Appendix A*.

The *Community* Environmental Aspect had the highest compliance score of 99%, based on 17 active conditions. There was one part compliance condition related to a lack of evidence related to 'no unauthorised entry' warning signage along the length of the shipping channel and in the immediate area surrounding the shipping channel and swing basin at BBLF. However, this is considered an operational safety and administrative aspect rather than an environmental issue.

The *Groundwater* Environmental Aspect attained a compliance score of 98% attributable to incomplete implementation of the Water Management Plan (noting the gaps in compliance were surface water-related) and the requirement for metering all bores for dewatering activities (noting metering has since been implemented).

The *Waste Environmental Aspect* includes the management of waste rock in the overburden emplacement facilities, an area of high potential environmental risk if risk management controls are not adequately implemented. Against the 87 active waste-related conditions, the Operator had a compliance level of 97%, which is an indication that the Operator is directing environmental management resources and effort to activities which have the highest potential environmental risks.

The *Vegetation and Rehabilitation Environmental Aspect* was assessed as achieving a compliance score of 96% due to a lack of available evidence in relation to rehabilitation of disturbance from the drilling and site investigation activities.

The *Surface Water Environmental Aspect* achieved a compliance score of 97% based on 80 active conditions. There were 10 conditions with part compliances that related to:

- Sediment and water transfer data not being submitted to DITT on a quarterly basis (however, submission of water transfer data for the final quarter of the audit period did occur)
- Waste placed in the Central East Northern Overburden Emplacement Facility (NOEF) prior to commissioning of EPROD and the EPROD construction report not submitted to DITT
- Insufficient documentation or records available at the time of the audit to demonstrate that the Old Stores Dam, North East Sump and Central East Bravo Sump were designed, constructed and managed in accordance with the condition or that these facilities were not in use for AMD storage
- Daily sampling at SW20 (in lieu of SW06), which did not occur during the release from the Water Management Dam (WMD) into Little Barney Creek
- An undeveloped or unimplemented environmental management plan (or equivalent document) that addressed erosion and sediment control relating to exploration management (noting such a document was implemented after the audit period)
- A lack of continuous flow monitoring at the Glyde River
- Unimplemented monitoring program elements from the Water Management Plan, such as:
 - No sampling during Q3 2020 at some off-site surface water monitoring locations due to COVID-19 travel restrictions.
 - Analyses across a number of sampling events in late July 2020 and/or early August 2020 that were unreported due to laboratory issues.
 - Continuous Electrical Conductivity (EC) data being unavailable for SW04, SW12 and SW10 due to equipment failures during the wet season.

The *Monitoring and Reporting Environmental Aspect* achieved a compliance score of 94% from 94 active conditions. It had 31 conditions that were scored 3 – *Part Compliance (high)* and two that were scored 2 – *Part Compliance (moderate)*. These part compliances were commonly due to available data not submitted quarterly to DITT, lack of evidence of some elements of the ICE's role e.g. development of construction reports, and instances of water or air quality monitoring not undertaken.

The *Air Quality Environmental Aspect* attained a compliance score of 91% due to:

- A lack of available evidence relating to the implementation of a management plan for exploration activities that addressed potential dust risks (noting one was implemented after the audit period)
- Not all proposed dust control measures in the EMR 2020 were reasonably progressed in the audit period

- Some air quality monitoring that was not conducted due to equipment malfunctions, equipment communications issues, and NT border restrictions attributed to the COVID-19 pandemic.

The *Marine Waters* Environmental Aspect achieved a compliance score of 90% because:

- Fluvial sediment data was submitted to DITT annually but not quarterly, as conditioned
- The Water Management Plan was not fully implemented (as discussed within the *Surface Water* Environmental Aspect).

The *Aquatic Fauna* Environmental Aspect was assessed as having the lowest compliance score of 83% against three active conditions, due to:

- Fluvial sediment data being submitted to DITT annually but not quarterly, as conditioned
- Elements of monitoring programs from the Water Management Plan not being implemented (as noted above), which related to the *Surface Water* Environmental Aspect.

A summary of the Operator's Authorisation compliance score for each Operator Domain is presented in Table 3-3 and Figure 3-2.

Table 3-3: Authorisation – Operator Compliance Scores by Operator Domain

| Domain | Total No. of Conditions | No. of Active Conditions | Scores | Compliance (Active Conditions) |
|---------------------------------------|-------------------------|--------------------------|--------|--------------------------------|
| Governance/General | 186 | 62 | 234 | 94% |
| Open Pit/Underground Workings | 4 | 2 | 7 | 88% |
| Tailings Storage Facility | 85 | 43 | 163 | 95% |
| Water Management and Storages | 101 | 53 | 203 | 96% |
| Overburden Emplacement Facilities | 116 | 53 | 204 | 96% |
| Exploration | 16 | 12 | 44 | 92% |
| Waterways (including river diversion) | 95 | 39 | 150 | 96% |
| Bing Bong Loading Facility | 7 | 5 | 18 | 90% |
| Non-mineral Waste Management | 15 | 0 | 0 | - |

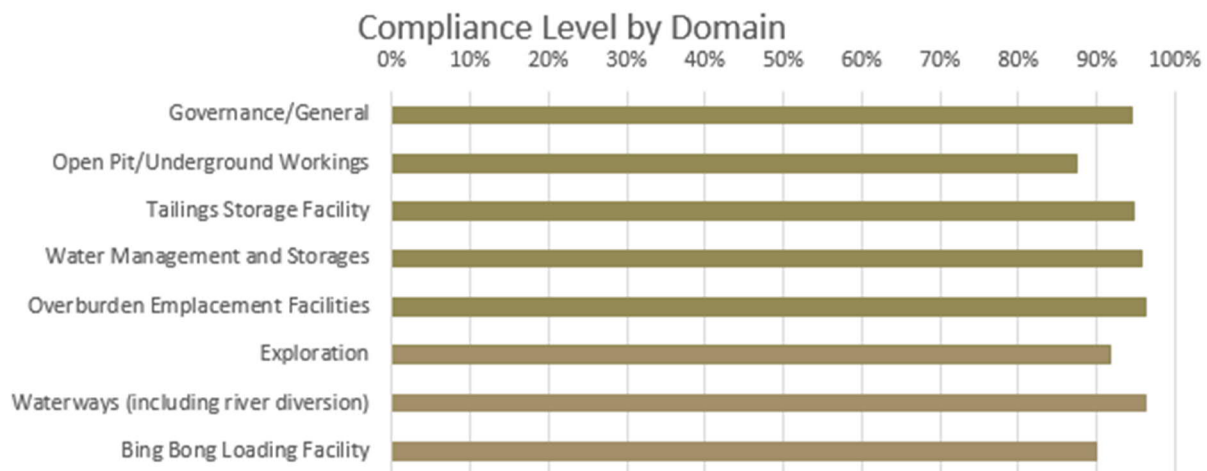


Figure 3-2: Authorisation – Operator Compliance Level Illustrated by Operator Domain

The key findings in relation to Operator Domains are outlined below, and the detailed audit findings for compliance levels and opportunities for all Operator Domains are presented in *Authorisation Compliance Workbook – Operator*, refer Appendix A.

The *Tailings Storage Facility* and *Overburden Emplacement Facilities* Operator Domains have amongst the highest levels of potential environmental risk and correspondingly the highest levels of regulation, reflected in the numbers of active conditions (43 and 53 respectively). The *Tailings Storage Facility* and *Overburden Emplacement Facilities* Operator Domains achieved compliance scores of 95% and 96% respectively. This level of compliance against conditions for the *Tailings Storage Facility* and *Overburden Emplacement Facilities* Operator Domains is an indication that the Operator is directing environmental management resources and effort to activities and areas which have the highest potential environmental risks.

Two other Operator Domains (*Water Management and Storages* and *Waterways*) achieved a high compliance of 96%, with 53 and 39 active conditions respectively.

Governance activities are the requirements and procedural elements of the regulatory conditions that provide an overarching means to achieve compliance and environmental performance outcomes. There are 186 conditions relevant to the *Governance/General* Operator Domain, 62 of which are currently active. The Operator was assessed as achieving a compliance level of 94%.

The *Open Pit/Underground Workings* Operator Domain was assessed as achieving a lower compliance (88%) with the Authorisation conditions than the other Operator Domains. One of the two relevant active conditions scored 3 – *Part Compliance (high)*. The part compliance findings were due to not all borefield dewatering being metered, which has since been addressed by the Operator.

Where relevant, OFIs have been developed for those conditions in all Operator Domains assessed as having less than full compliance, and these are outlined in Section 3.2.3. Where there were observations of importance relating to a condition but a part compliance and OFI were not deemed warranted, these observations are included in the *Authorisation Compliance Workbook – Operator*, refer Appendix A, preceded by the text, 'OBS'.

3.2.3 Opportunities for Improvement

Potential opportunities identified by the Independent Monitor for the Operator to consider that support continuous improvement are detailed in Table 3-4, noting these are not mandatory requirements.

Table 3-4: Authorisation – Operator Opportunities for Improvement

| OFI Ref. | Authorisation Condition No. | Opportunities for Improvement |
|--|-----------------------------|---|
| Mining Management Plan and Reporting | | |
| OFI-21-OP-AUTH-01 | 6*^ | Continue to review the approved MMP annually on 31 August and include a reference to that in the EMR. If the EMR is not submitted on 31 August, the Operator should correspond with the Minister confirming the annual review of the approved MMP has occurred. |
| OFI-21-OP-AUTH-02 | 7.d*#^ | Submit all quarterly monitoring data inclusive of soil sampling to the Department in the required format. |
| Independent Oversight - Appointment of ICE | | |
| OFI-21-OP-AUTH-03 | 48.a* | Obtain confirmation regarding the ICE's agreement to warrant and accept both the design and construction works, without limitation on responsibility. Otherwise, the Operator should obtain approval of the ICE's limitation on responsibility position with DITT. |
| OFI-21-OP-AUTH-04 | 48.a* | Include the following statement in the monthly ICE reports: "The Independent Certifying Engineer warrants and accepts both the design and construction works, without limitation on responsibility" or an agreed level of limitation related to works by other parties prior to its appointment as ICE. |
| OFI-21-OP-AUTH-05 | 48.a* | Retain evidence that the ICE warrants and accepts both the design and construction works for more than the NOEF (e.g. TSF or other construction on site), without limitation on responsibility. |
| OFI-21-OP-AUTH-06 | 48.b* | Retain evidence that the ICE is present during all phases of construction where required in the approved MMP (including at hold points) and oversees and certifies that the works meet design specifications for more than the NOEF (e.g. TSF or other construction on site). The ICE should prepare reviews of the TSF and any other construction to demonstrate progressive compliance. |
| OFI-21-OP-AUTH-07 | 48.b* | Progressively implement actions raised by the ICE throughout construction to address issues to allow close out of Inspection and Test Plans (ITP). |
| OFI-21-OP-AUTH-08 | 48.c* | Confirm that the ICE is approving recommencement of construction at defined hold points and include a statement that the ICE "approved recommencement of construction at defined hold points" for the NOEF, TSF and any other construction in relevant monthly ICE reports. |
| Independent Tailings Review Board | | |

| OFI Ref. | Authorisation Condition No. | Opportunities for Improvement |
|--|-----------------------------|---|
| OFI-21-OP-AUTH-09 | 50.e.ii* | Ensure the Independent Tailings Review Board (ITRB) review comments on the TSF Operations, Maintenance and Surveillance (OMS) manual are incorporated into the OMS before new construction commissioning. |
| Waste Rock Management – Charlie Stage | | |
| OFI-21-OP-AUTH-10 | 22.a.ii [®] | Provide evidence that test results for construction of Central West Charlie Flood Proofing works were in accordance with the relevant acceptance criteria. |
| Water Management and Storage | | |
| OFI-21-OP-AUTH-11 | 62.c.iii.d* | Correspond with DITT about the intent of this condition and specifically the impracticality of locating signage along the length of the shipping channel and in the immediate area surrounding the shipping channel and swing basin. |
| OFI-21-OP-AUTH-12 | 64* | Update the water storage infrastructure master list related to the open pit footwall quarry sump and open pit 'K stage' sump if they do not contain AMD or request DITT amend the condition to include these additional storages. |
| OFI-21-OP-AUTH-13 | 64.l, s and w* | Update the water storage infrastructure master list for Old Stores Dam, North East Sump and Central East Bravo Sump to include relevant information and retain evidence of any inspections. |
| Water Transfer and Discharge | | |
| OFI-21-OP-AUTH-14 | 69.g.i* | Measure and record field parameters daily at SW03 and SW06 during water release from the WMD into Little Barney Creek, unless the Department approves the alternative SW06 sampling location. If sampling is undertaken at an alternate location, the field sheet should reflect the actual sampling location. |
| Perimeter Run-Off Dams ⁷ – SPROD, SEPROD, WPROD and EPROD | | |
| OFI-21-OP-AUTH-15 | 45 ^{\$} | Prepare and submit the construction reports including Quality Assurance (QA) and Quality Control (QC) data endorsed by the ICE for EPROD, given that early approval to operate EPROD was granted 20 March 2020. The EPROD Commissioning Plan stated the EPROD construction report needed to be completed "as soon as possible". |
| Tailings Storage Facility | | |
| OFI-21-OP-AUTH-16 | 46.d ^{\$} | Ensure TSF construction reports including QA and QC data are submitted within the 30-day timeframe stipulated in the condition. While this condition is no longer in the 13 November 2020 Authorisation, an equivalent requirement exists for all of the ICE construction reports in Condition 48.g. |

⁷ Perimeter run-off dams named as southern (SPROD), south-eastern (SEPROD), western (WPROD) and eastern (EPROD).

| OFI Ref. | Authorisation Condition No. | Opportunities for Improvement |
|--|-----------------------------|--|
| Exploration | | |
| OFI-21-OP-AUTH-17 | 86.b.ii, iii and iv* | Implement the Exploration Management Plan that now includes environmental controls and retain evidence (e.g. Job Safety Analysis (JSA), environmental inspections, etc). |
| Schedule D – Environmental Monitoring and Management | | |
| OFI-21-OP-AUTH-18 | Schedule D – 2* | Continue to develop continuous monitoring solutions to avoid logger loss and failure during deployment. |
| OFI-21-OP-AUTH-19 | Schedule D – 3.b*^ | Progress negotiations relating to necessary approval requirements with other authorities to enable construction of the permanent monitoring structures, e.g. Glyde River. Deploy additional loggers in the Glyde River to provide redundancy to ensure continuous data collection. |
| OFI-21-OP-AUTH-20 | Schedule D – 6.b and c* | Update management plans to indicate the process relating to advising DITT when a part of the plan cannot be implemented. |

Note: * 13 November 2020 Authorisation condition number.
 \$ 10 August 2020 Authorisation condition number.
 ^ indicates OFI carried over from 2020 AEPAR.
 # The opportunity for improvement for Condition 7.d is relevant to both the Operator and DITT.
 @ While Condition 22.a.ii is not included in the 13 Nov 2020 Authorisation, it would be relevant to Condition 48.a of that approval and therefore an OFI has been prepared.

3.2.4 Conclusions

The high level of compliance with the Authorisation conditions across all key operational activities is an indicator of a high level of fulfillment of relevant regulatory requirements achieved by the Operator.

The Operator Authorisation audit findings identified 20 OFIs (presented in Table 3-4) based on conditions having part compliance.

3.3 Waste Discharge Licence – Operator Compliance Audit

3.3.1 Scope and Approach

The Operator was assessed against the relevant conditions contained in WDL 174-11 (28 April 2019 - 28 April 2021) during the audit period using the quantitative audit approach and scoring criteria described in Section 2.2.

3.3.2 Findings

A summary of findings is shown in Table 3-5.

Table 3-5: Summary of WDL Compliance - Operator

| Description | No. |
|--|-----|
| Total number of conditions and sub-conditions relevant to Operator | 148 |
| Number of active conditions and sub-conditions during the audit period | 126 |
| Number of part compliances | 10 |
| Overall compliance score of active conditions | 98% |

Detailed audit findings, supporting evidence, part compliances and scores are contained in the *WDL Compliance Workbook – Operator*, refer to Appendix B.

A summary of the Operator’s WDL compliance score for each WDL section is presented in Table 3-6 and Figure 3-3.

Table 3-6: WDL – Operator Compliance Scores by WDL Section

| WDL Sections | Total No. of Conditions | No. of Active Conditions | Scores | Compliance (Active Conditions) |
|-------------------------|-------------------------|--------------------------|--------|--------------------------------|
| General | 31 | 19 | 71 | 93% |
| Operational | 12 | 9 | 36 | 100% |
| Discharges | 10 | 10 | 40 | 100% |
| Monitoring | 20 | 16 | 63 | 98% |
| Recording and reporting | 38 | 35 | 138 | 99% |
| Performance improvement | 37 | 37 | 144 | 97% |

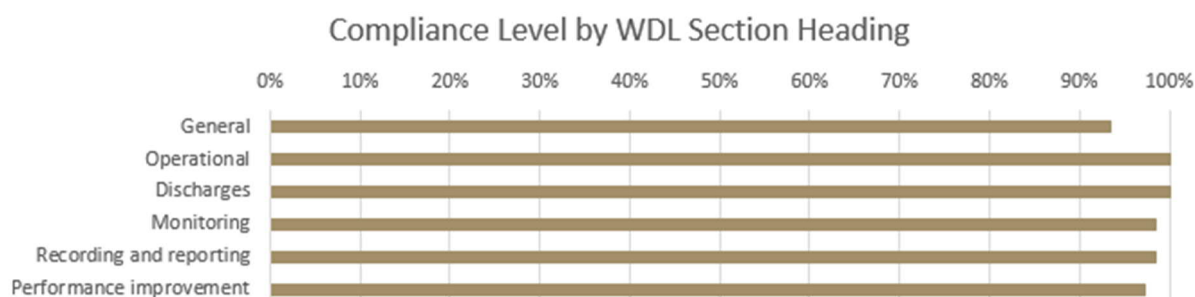


Figure 3-3: WDL – Operator Compliance Level by Section

The key findings in relation to the WDL section compliance by the Operator are outlined below. The detailed audit findings for compliance levels and opportunities for all sections are presented in *WDL Compliance Workbook – Operator*, refer Appendix B.

The *Operational* and *Discharges* sections of the WDL achieved 100% compliance indicating that, while part compliances within conditions of other sections of the WDL have been identified, waste discharge is in compliance with the specific operational and discharge conditions.

High levels of compliance were also achieved in WDL sections relating to *Monitoring, Recording and Reporting* and *Performance Improvement*. A part compliance within the *Monitoring, Recording and Reporting* section was identified due to the monitoring site identification signage not being maintained at SW08, so that the location was 'reasonably' identifiable at all times. However, the Operator advised "Signage was erected at SW08 in 2017; however, was removed/went missing...".

The *Performance Improvement* section had two part compliances that were due to limitations in continuous monitoring and data capture for flow in the Glyde River. Flow monitoring equipment was installed on the Glyde River in the 2019-2020 wet season, and reporting related to that monitoring occurred within the current audit period. Flow monitoring equipment was also installed on the Glyde River for the 2020-2021 audit period wet season. The Glyde River loggers did not operate continuously in either audit period due to problematic site conditions causing loss of loggers or faults.

The WDL *General* section conditions were assessed as achieving lower compliance than the other WDL sections. The part compliances in this section were of an administrative nature. They related to:

- Not submitting revised versions of the Emergency Response Plan to DEPWS within 10 business days of the amendments and not providing detail on the changes to DEPWS when amendments were made. However, all changes to the Emergency Response Plan in the audit period were to sections not specifically related to the WDL.
- Not including the community feedback phone number in the Communication Plan Waste Discharge Licence, although the Operator's emergency phone number is included for feedback.

OFIs have been developed for those conditions assessed as having part compliance and are outlined in Section 3.3.3. Where there were observations of importance relating to a condition but a part compliance and OFI were not deemed warranted, these observations are included in the *WDL Compliance Workbook – Operator*, refer to Appendix B, preceded by the text, 'OBS'.

3.3.3 Opportunities for Improvement

Potential opportunities to support continuous improvement identified by the Independent Monitor through the review and audit process are detailed in Table 3-7, noting these are not mandatory requirements.

Table 3-7: WDL – Operator Opportunities for Improvement

| OFI Ref. | WDL Condition No. | Opportunities for Improvement |
|------------------|------------------------|---|
| OFI-21-OP-WDL-01 | 9 | Issue updated Emergency Response Plan to DEPWS within 10 days of updates and include a tabulated summary of the amendments with document references, reasons for the amendment and an assessment of environmental risk associated with the amendments. |
| OFI-21-OP-WDL-02 | 9 | Request a change to the condition to state that submission is only required when a change directly relevant to the WDL is made to the documents listed in Table 1 - Licence Documents. |
| OFI-21-OP-WDL-03 | 12.2 | Include the community feedback phone number in the next revision of the Communication Plan Waste Discharge Licence. |
| OFI-21-OP-WDL-04 | 32.1 | Install and maintain appropriate identification signage at SW08 or obtain agreement from DEPWS that a sign is not required. |
| OFI-21-OP-WDL-05 | 36 | Investigate why notifications to DEPWS were occurring more than 24 hours after first becoming aware of the non-compliance (more than 24 hours after the final laboratory reports were emailed from the laboratory) and implement any actions to rectify findings. |
| OFI-21-OP-WDL-06 | 36 | Notify DEPWS within 24 hours of becoming aware of non-compliances with this licence, including non-compliances relating to the inability to monitor continuous flow. Noting that while Condition 62 relating to monitoring continuous flow in the Glyde River and Emu Creek is no longer in WDL174-12 (i.e. the WDL for the next audit period), the requirement is now included as part of Condition 26 due to their inclusion in WDL Appendix 4 (Table 1). |
| OFI-21-OP-WDL-07 | 38.6 | Ensure that all required water quality monitoring data are submitted in Condition 38 reports. |
| OFI-21-OP-WDL-08 | 60 and 62 [^] | Progress negotiations relating to necessary approval requirements with other authorities to enable construction of the permanent monitoring structures (e.g. Glyde River). Deploy additional loggers in Emu Creek and Glyde River to provide redundancy to ensure continuous data collection. |

Note: [^] indicates OFI carried over from 2020 AEPAR.

3.3.4 Conclusions

The audit review has assessed the Operator as having a high level of overall compliance with active WDL conditions at 98%.

The WDL audit identified eight OFIs, presented in Table 3-7, to support improved environmental performance and assist in compliance with the WDL.

3.4 NT EPA Recommendations – Operator Compliance Audit

In accepting the NT EPA recommendations of *Assessment Report 86*, the then Minister for Primary Industries and Resources took responsibility for implementing the recommendations that apply under the authority of the MMA.

As part of this audit, all 117 NT EPA recommendations and sub-parts were individually reviewed against the current Authorisation conditions to confirm whether the recommendations had been transferred into the Authorisation. The majority of the recommendations had been transferred directly to the Authorisation and all of the recommendations, to varying extents, are included in the Authorisation, refer to Section 4.3 and Appendix D for details. The NT EPA recommendations adopted as Authorisation conditions became enforceable under the MMA.

There are 116 out of 117 NT EPA recommendations relevant to DITT to incorporate into the Authorisation and subsequently become regulatory requirements for the Operator to develop or implement. It is noteworthy that 84 of these recommendations are future requirements that will be triggered at timeframes between six months to five years from the date of authorisation of the OMP, which is outside of the period of this audit.

As the NT EPA recommendations have been included in the Authorisation conditions, the Authorisation Operator compliance audit has fulfilled the audit task to review the Operator's compliance audit against implementation of the NT EPA recommendations, refer to the review of Operator findings contained in Section 3.2 and Appendix A. The high level of Operator compliance with the Authorisation (96%) reflects the high level of Operator compliance with the NT EPA recommendations.

3.5 Commitments – Operator Review

3.5.1 Scope and Approach

In addition to the regulatory requirements under the Authorisation and WDL, as well as the NT EPA recommendations, the Operator has made a number of commitments to support improved outcomes across the Mine operation. These commitments have been identified and adopted by the Operator from various sources, including from the OMP Environmental Impact Statement (EIS), and have been set out in the MMP. The EMR contains a reconciliation of commitments, i.e. it provides a status update against the commitments set out in the MMP based on activity undertaken in the Operator's monitoring period.

The Independent Monitor reviewed the commitments set out in the MMP. The MMP describes commitments at Section 5.3 and refers to two sets of commitments:

- Key commitments contained in the MMP, which are presented in the MMP (Appendix L)
- Relevant OMP EIS commitments provided in the MMP (Appendix M).

The Independent Monitor sought clarification regarding the relationship between the sets of commitments contained in the MMP. The Operator was able to clarify that MMP's 'EIS Commitments Register' (Appendix M) was adapted from the OMP EIS Commitments (Appendix AB) and that MMP's 'Commitments contained within the MMP' (Appendix L) included commitments relating to regulatory approvals and actions that had not been included in the OMP's EIS Commitments Register.

Furthermore, the Operator indicated that two registers were current, with neither superseding the other.

As the commitments are not necessarily regulatory requirements, the scorecard approach adopted for the audit of the Authorisation and WDL (as described in Section 2.2) was not used in this case. Instead, a qualitative review of the registers was undertaken (as described in Section 2.3), with general commentary and OFIs provided.

Both sets of MMP commitments were reviewed (Appendix L and Appendix M), along with the reconciliation of commitments contained within the EMR (Appendix B). Consideration was given to whether the commitments set out in the MMP were addressed in the EMR, and whether they were complete, ongoing or not currently relevant because they related to later stages of operation at the mine or similar. For review of the reconciliation of commitments contained within the EMR, consideration was also given to whether the EMR 2021 effectively addressed the commitments. It is noted that the wording of a number of commitments is non-specific and as such, review of performance against these is not quantifiable.

3.5.2 Findings

The review identified that all the OMP EIS commitments provided in the MMP (Appendix M) were addressed in the EMR; however, other commitments identified in the MMP (Appendix L) were not addressed. Notwithstanding, from the 13 commitments identified in the MMP (Appendix L), all appear to be addressed to some extent within the OMP EIS commitments, apart from one commitment, i.e. *'Install additional groundwater monitoring at Bing Bong'*.

In total, 230 commitments were identified in the EMR. Of these, 161 commitments were identified to be ongoing (i.e. relating to ongoing committed activity at the mine), six commitments were identified to be complete (i.e. no further action required), and 63 commitments were identified to be not currently relevant (e.g. commitments relating to specific actions during closure stage).

Of the 161 ongoing commitments, the EMR 2021 provided by the Operator indicated that eight commitments may be incompletely addressed. These related to the following activities:

- Geochemical investigations had not been undertaken for the WOEF and BBLF
- Groundwater quality monitoring had not been undertaken adjacent to Djirrinmini waterhole; however, proposed groundwater quality monitoring was included in the draft 2021/2022 monitoring schedule
- The gauging station on the Glyde River was not fully operational due to several site-specific challenges. There had been delays to the installation of a gauging station at an alternate site
- The Fire Management Plan required an update to address management of specific fauna as described in the OMP EIS, noting this update was planned for 2022
- Vegetation trials on the southern levee wall were not conducted due to delays in approval of the MMP. Trials were intended to recommence on the NOEF in late 2021
- A Gouldian Finch Monitoring Program is yet to be developed
- Dust management control measures were yet to be added to site inductions to brief employees and contractors on air quality management requirements
- The Operator intended to continue to conduct internal corporate Health Safety Environment and Community (HSEC) audits for the mine, rather than undertake both internal and external audits.

It is notable that the reporting against commitments in the EMR 2021 has improved on previous years. This is largely due to the inclusion of information regarding the source of the commitment, applicable project phase, timeline and frequency, thereby providing enhanced detail for the commitments in comparison with information previously provided.

3.5.3 Opportunities for Improvement

Potential opportunities to support continuous improvement of the implementation, tracking and reporting of commitments are detailed in Table 3-8, noting the opportunities are not mandatory requirements.

Table 3-8: Operator Commitments - Opportunities for Improvement

| OFI Ref. | Opportunities for Improvement |
|------------------|--|
| OFI-21-OP-COM-01 | Provide detail and address the outstanding commitments from the MMP (Appendix L), along with the eight incomplete actions for the commitments reported in the EMR (Appendix B). |
| OFI-21-OP-COM-02 | Incorporate the commitments from the MMP (Appendix L and Appendix M) to a single commitment register for reporting against in future EMRs, and rationalise the commitments to avoid duplication. |
| OFI-21-OP-COM-03 | Provide additional information in the commitments register to identify where a commitment is closed out with no further action proposed. Provide details of close-out actions to confirm commitments are complete, e.g. date completed, brief description of action completed, reference to relevant supporting report/ data/ documentation. |
| OFI-21-OP-COM-04 | Provide a unique reference number to each commitment in order to facilitate tracking and reporting. |

3.5.4 Conclusions

The majority of the Operator’s reported commitments are adequately addressed through the EMR. While improvements from the previous years’ commitment reporting are apparent, commitment management would further benefit from consolidation and rationalisation of the commitment register, along with clearer tracking and reporting of commitments.

3.6 Environmental Risk - Operator Review

3.6.1 Scope and Approach

The objective of the risk review is to assess the Operator’s environmental risk management process, implementation status, and the effectiveness of controls.

A review of the Operator’s performance in environmental risk management was conducted by examining the following key documents:

- Environmental Risk Assessment (MMP January 2019)
- Environmental Risk Assessment (MMP January 2020)
- Risk Management Plan.

A qualitative review of the environmental risk management process was undertaken (as described in Section 2.3) with general commentary and OFIs provided. Through interviews and assessment of the relevant documents and samples of information, the following were reviewed:

- The risk management process
- Risk register
- The controls implementation and risk status
- Incorporation of risks presented in the EIS, the latest MMP, and the previous Independent Monitor report
- Annual findings to determine improvement in risk profile
- Effectiveness of controls.

This review scope is not to recreate the environmental risk register, but to review the risk register and associated documents to assess the adequacy of the risk process and to review that appropriate consideration has been provided to the key environmental risks.

3.6.2 Findings

Risk Process

The Operator utilises a comprehensive suite of risk management processes, including corporate governance, risk assessment workshops, risk registers and software tools, which provide an appropriate framework for identifying and managing environmental risks associated with the mine's operations. The main risk management document is the Risk Management Plan, which establishes the structured framework for a common approach to the risk management process. The Risk Management Plan's framework is based upon ISO 31000 (2018) *Risk Management - Guidelines*, and incorporates overall risk management processes, risk responsibilities and guidance on risk identification, analysis and reviews of effectiveness.

The majority of risks in the MMP Environmental Risk Assessment are based upon risks identified at the time of the OMP EIS and generated by an externally-facilitated risk assessment process, based upon ISO 31000 (2018) *Risk Management* and Glencore Corporate standards. An external facilitator has been used to prepare an MMP risk assessment. The MMP environmental aspects and impacts register has also been utilised to identify risks evaluated in the environmental risk register. It is unclear if the risks identified by the previous Independent Monitor have been incorporated into the current environmental risk register.

Environmental Risk Assessment Registers

The Operator's HSEC department maintains its own environmental risk assessment register. The two most recent environmental risk assessment registers reviewed are summarised below.

2019 MMP Amendment (Appendix A: Environmental Risk Assessment, January 2019)

- 32 'key risks summary' risks listed
- Both current controls and proposed additional controls are described
- Each risk has a reference indicating if the risk has previously been considered in the OMP EIS or if it was a new risk related to the MMP Amendments activities

- All OMP EIS risk including risks ranking as 'low' and closure-related risks were considered, the risks ranked as 'low' and closure-related risks were not reproduced in this register and found in Appendix G of the Draft OMP EIS
- 19 out of the 32 inherent risk ranking scores are the same as the residual risk ranking score.

2020 MMP (Appendix A: Environmental Risk Assessment, January 2020)

- 34 'scenario' risks listed
- Source, pathway, receptor and potential causes described
- Environmental controls are described and generally appear to be existing controls or management plans
- No reference to indicate if the risk is derived from OMP EIS or a newly identified risk
- 1 out of the 34 inherent risk ranking scores are the same as the residual risk ranking score.

The 2019 and 2020 environmental risk assessment registers have different formats with different table column headings and different risk descriptions. There is limited correlation between the risk registers, with 26 out of the 34 risk scenarios in the 2020 register unable to be clearly associated with the key risk summaries listed in the 2019 register. Comparisons between the annual environmental risk performance or the identification of improvements in risk profile are not easily made.

The 2020 register does not distinguish between current control and proposed additional controls, which create uncertainty in the implementation status of the controls described. The implication of an unclear control implementation status and inability to confirm if the residual risk rating score is based on planned (future) or implemented actions is that it is uncertain whether the inherent environmental risk has effectively been reduced. The 2020 environmental risk assessment register format could be enhanced to become a more effective environmental risk tracking tool.

Environmental Monitoring Report

The 2021 EMR's Executive Summary contains a reference to a recent review of the risk assessment, which found there was no increase in the environmental risks compared to those presented in the OMP EIS and all risks (including new/altered risk) were determined to be 'low' or 'medium'.

Any new, altered or emerging risks from the EMR review are potential candidates to be added to the risk register and provided with new controls or modified existing controls. The Environmental Risk Assessment register has not been revised since January 2020.

Risk Status

Based upon the information reviewed, the EMR provided an annual review of the most recent environmental risk assessment to check there was no increase in the environmental risks. However, it appears there was no revision of environmental risk assessment register or documentation to capture new or altered risks or controls that may have occurred during the 12-month period.

The EMR 2021 lists numerous mitigation measures implemented during the period which constitute environmental controls. These have improved environmental performance and potentially reduced residual risk ratings, e.g. TSF interception trench project completion, drilling to refine the hydrogeological model, NOEF cover system rehabilitation trials, and sediment removal from Barney Creek. The risk status of these control measures is currently not summarised in the Environmental Risk Assessment register nor are the improvements in risk profile shown.

Monitoring risk status is a key step in regularly reviewing the risk register. As individual risks are mitigated and their risk status changed (e.g. closed), the risk rating score after effective risk treatment will be lower and environmental risk management progress can be tracked.

Effectiveness of Controls

As part of risk monitoring and review, the environmental control should be reviewed to determine the adequacy and effectiveness of actions associated with management risk and achieving objectives. It does not appear that effectiveness of controls has been formally reviewed.

Over time, the overall effectiveness of controls (e.g. fully effective, substantially effective, partially effective, largely ineffective, totally ineffective) may change and the resultant residual risk level may in turn be altered. The monitoring and review step involves actual performance comparison with the initial environmental risk assessment assumptions. The effectiveness of controls can be assessed by considering if they reduce the likelihood of the situation occurring or if they reduce the consequence.

3.6.3 Opportunities for Improvement

Potential opportunities to support continuous improvement of the environmental risk management processes are detailed in Table 3-9, noting the opportunities are not mandatory requirements.

Table 3-9: Risk Management - Opportunities for Improvement

| OFI Ref. | Opportunities for Improvement |
|-----------------|--|
| OFI-21-OP-RI-01 | Implement regular formal environmental risk assessment reviews to monitor the effectiveness of controls as part of continuous improvement. |
| OFI-21-OP-RI-02 | Undertake regular formal environmental risk assessment reviews to update risk status and track environmental risk management progress as part of continuous improvement. |
| OFI-21-OP-RI-03 | Develop a risk profile monitoring and tracking process to illustrate annual positive and/or negative deviation trends in risk profile and to enable comparative analysis between annual risk registers. |
| OFI-21-OP-RI-04 | Consider revising the environmental risk assessment register format to include: <ul style="list-style-type: none"> • a unique identifier reference for each risk to facilitate tracking for monitoring and review • a prefix to indicate where the risk was originally identified, e.g. OMP EIS, MMP, BBRA, etc • risk status information, e.g. identified, in-progress, closed and risk eliminated, closed and monitor, accepted • risk register version control. |
| OFI-21-OP-RI-05 | Revise the Risk Management Plan to explicitly state HSEC responsibility includes Environment in Section 12, which only mentions Safety. |
| OFI-21-OP-RI-06 | Revise JSA references in the Risk Management Plan to Job Safety and Environment Analysis (JSEA) to prompt environmental considerations in risk assessments. |

3.6.4 Conclusions

The Risk Management Plan provides the Mine with a comprehensive process and appropriate risk management framework in accordance with the relevant international risk standard series, ISO 31000 (2018) *Risk Management*. The Environmental Risk Assessment register contains appropriate identification, risk analysis and proposed controls for the mine's key environmental risks.

The review found there is limited correlation between the 2019 and 2020 MMP Environmental Risk Assessment registers, as the risk descriptions differ and there is no referencing of individual risks to enable traceability or tracking of risks and risk performance over time.

Strengthening the monitoring and risk review steps in the Risk Management Plan process would assist environmental performance. This could be achieved by conducting regular formal environmental risk assessment reviews of the effectiveness of risk controls, status and risk profile trends as part of continuous improvement to demonstrate risk management progress.

3.7 Operator Success

The audit and review process identified some noteworthy successes achieved by the Operator during the audit period which have contributed to continuous improvement as summarised below.

- Various conditions related to NT EPA recommendations were addressed by the Operator during the audit period including:
 - An Adaptive Management Plan (AMP) was developed (inclusive of a synthesised monitoring program) and approved by DITT on 13 November 2020, with the implementation of the Trigger Action Response Plans (TARP) commenced
 - A metals attenuation study and a hydraulic connections study reports were submitted to the Commonwealth Department of Agriculture, Water and the Environment (DAWE) in December 2020
 - The NOEF Interception Scheme was submitted to DAWE in June 2020
 - The Site-Specific Guideline Values Review Report was submitted to DEPWS in April 2021.
- The revised EMR format has improved readability since collating and presenting the monitoring programs' key outcomes and recommendations in the executive summary, while retaining all the supporting technical information in the appendices.
- The EMRs now include a holistic assessment of environmental performance utilising a Source-Pathway-Receptor (SPR) conceptual site model to combine various monitoring programs' data to determine environmental risk.
- A 1.7 kilometre-long interception trench on the northern side of the TSF was commissioned in October 2020 to manage seepage from the TSF. Notable reductions in sulphate and zinc levels were recorded by April 2021 in several bores, particularly those closest to the trench, with more positive water quality effects expected over the following period.
- Dust impacts to the surface water system is an important driver of fluvial sediment quality and concentrations of metals in biota. This is being addressed through ongoing remediation of Barney Creek (including physical removal of sediment). Additional measures to be examined, include extension of the sediment removal program and implementation of additional dust management measures at Barney Creek Haul Road and the Mill.
- Groundwater levels and quality behaved in a consistent and expected manner. At Djirrinmini, the groundwater elevations at all monitoring bores remained above the performance indicator levels during the reporting period and therefore there were no exceedances or actions triggered.
- There were no mine-derived Site-Specific Trigger Value (SSTV) surface water quality exceedances or non-compliances recorded at the compliance point in the McArthur River during the reporting period.

- As a result of the ongoing installation of Large Woody Debris (LWD) and riparian revegetation, the McArthur River Diversion Channel recovery is progressing towards that of natural sections of the McArthur River.
- Several refinements were made to the revegetation monitoring program to improve its efficacy.
- Work to stabilise flow and reduce sediment load completed within Bull Creek and a nearby unnamed tributary in 2020, as part of the McArthur River Diversion Channel Erosion Mitigation Civil Works Project, have resulted in reduced erosion and maintenance requirements of associated access tracks.
- To increase engagement with local Gulf residents, a permanent community engagement office was opened in Borroloola in September 2020 and a local Facebook page was launched in February 2021.
- The Risk Management Plan provides the Mine a comprehensive process and appropriate risk management framework in accordance with the relevant international risk standard, ISO 31000 (2018) *Risk Management*.

4 Review of DITT

4.1 Objective

The objective of the audit of DITT was to assess DITT’s level of compliance against the relevant Authorisation conditions and the implementation of NT EPA recommendations, as well as a review of DITT’s regulatory procedures.

4.2 Variation of Authorisation – DITT Compliance Audit

4.2.1 Scope and Approach

Using the quantitative audit approach and scoring criteria described in Section 2.2, DITTs performance was assessed against the regulatory conditions contained in the Authorisations (dated 15 August 2019, 10 August 2020 and 13 November 2020) over the audit period.

Consistent with the approach for the audit of the Operator related to the Authorisation, an analysis of the three Authorisations was conducted to determine which conditions from each should be included in the audit.

All of the 13 November 2020 Authorisation conditions were included, along with conditions in the 10 August 2020 Authorisation where an equivalent 13 November 2020 Authorisation condition did not exist. This is consistent with the approach described in Section 3.2.1.

Following determination of the conditions to be audited, each condition was reviewed to confirm if it had a DITT action or not. Only conditions with an explicit or implied action required by the DITT were then audited.

4.2.2 Findings

A summary of findings is shown in Table 4-1.

Table 4-1: Summary of Authorisation Compliance - DITT

| Description | No. |
|--|-----|
| Total number of conditions and sub-conditions relevant to DITT | 274 |
| Number of active conditions and sub-conditions during the audit period | 61 |
| Number of part compliances | 11 |
| Overall compliance score of active conditions. | 95% |

Detailed audit findings, supporting evidence, part compliances and scores are contained in *Authorisation Compliance Workbook – DITT*, refer Appendix C.

Further analysis was undertaken by assessing Authorisation conditions and sub-conditions under Authorisation sections, generally aligned with the section headings in the Authorisation. Some of the

section headings below have been amalgamated under related Authorisation sections and where this occurred, it is noted.

- *General* - incorporates MMP and reporting, security and levy, exploration, non-mineral waste management and geochemical, geotechnical and hydrogeological assessment, and investigation drilling
- *Waste Rock Management* - incorporates construction of the NOEF and remaining Waste Rock Management Facilities
- *Water Management* - incorporates storage, transfer and discharge
- *Tailings Storage Facility* - incorporates ITRB
- *Environmental and Independent Monitoring* - incorporates two conditions related to dredging at Bing Bong Loading Facility
- *Overburden Management Project*
- *Adaptive Management*
- *Mine Closure* - incorporating unplanned closure.

A summary of DITT’s Authorisation compliance score for each Authorisation section is presented in Table 4-2 and Figure 4-1.

Table 4-2: Authorisation – DITT Compliance Scores by Section

| VoA Sections | No. of Conditions | No. of Active Conditions | Scores | Compliance |
|--|-------------------|--------------------------|--------|------------|
| General | 25 | 14 | 53 | 95% |
| Waste Rock Management | 16 | 0 | 0 | - |
| Water Management | 9 | 2 | 7 | 88% |
| Tailings Storage Facility | 19 | 10 | 37 | 93% |
| Environmental and Independent Monitoring | 74 | 28 | 108 | 96% |
| Overburden Management Project | 117 | 6 | 24 | 100% |
| Adaptive Management | 7 | 0 | 0 | - |
| Mine Closure | 7 | 1 | 4 | 100% |

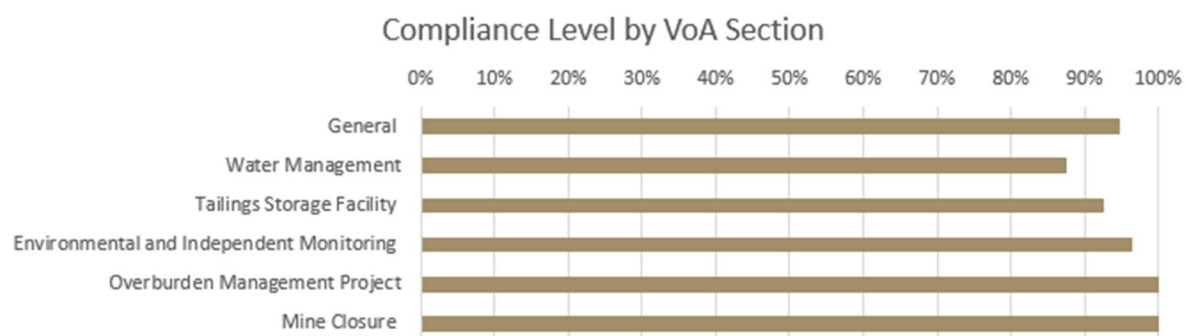


Figure 4-1: Authorisation – DITT Compliance Level Illustrated by Authorisation Section

The key findings in relation to Authorisation section compliance by DITT are outlined below and the detailed audit findings for compliance levels and opportunities for all sections are presented in *Authorisation Compliance Workbook – DITT*, refer Appendix C.

The proportion of active conditions is low because the majority of conditions are future requirements not triggered during the audit period.

The Authorisation provides environmental safeguards in the form of additional and strengthened Authorisation conditions, mainly concentrated on the potential higher environmental risks associated with the *Overburden Management Project* and *Waste Rock Management* sections.

DITT has been audited against some conditions that do not explicitly state that it is a DITT requirement but where the Operator had an action to provide a report or evidence to DITT. For DITT to have regulatory oversight and determine any areas of risk or non-compliance, review by DITT of submissions from the Operator or tracking of potential absence of submission/s needs to occur.

The *Overburden Management Project* section relates to the management of waste rock in the overburden emplacement facilities, which is an area of high potential environmental risk if risk management controls are not adequately implemented. A 100% compliance level was achieved against six active related conditions. This is an indication that DITT is directing effort to activities which have the highest potential environmental risks.

The other section that achieved a compliance score of 100% is related to *Mine Closure*, where only one condition is active and was an early delivery of the Unplanned Mine Closure Plan for 2021 activities.

The *Environmental and Independent Monitoring* section attained a compliance score of 96% with 28 active conditions. The part compliances all related to four conditions that refer to undertaking monitoring in accordance with a list of Environmental Management Plans (EMP) based on approval in the MMP. However, the titles of the EMPs in the conditions differ from the actual titles of the plans in the MMP.

At 88% compliance across two active conditions, the *Water Management* section was assessed as achieving lower compliance with the Authorisation conditions than the other sections. A part compliance score for the two conditions resulted in a lower overall score than if there were more active conditions.

One of the part compliances identified under the *Water Management* section was related to construction reports, including QA and QC data endorsed by the ICE, required to be provided to DITT prior to commencement of operation of EPROD and within 30 days of construction completion. DITT approved early operation of EPROD to remove a potential safety risk associated with filling of underground voids. Providing early commencement of operation of EPROD should have been conditional on provision of construction reports, including QA and QC data endorsed by the ICE, for the works that were completed prior to commencement of operation.

The *Tailings Storage Facility* section attained a compliance score of 93%. The three part compliances, that are not explicitly DITT requirements but are related to DITT, were ensuring that the Operator had delivered construction reports as required by conditions.

OFIs have been developed for those conditions assessed as attaining part compliance and are outlined in Section 4.2.3. Where there were observations of importance related to a condition but a part

compliance and OFI were not deemed warranted, these observations are included in the *Authorisation Compliance Workbook – DITT*, comments column, refer to Appendix D, preceded by the text, ‘OBS’.

4.2.3 Opportunities for Improvement

Potential opportunities to support continuous improvement identified by the Independent Monitor through the review and audit process are detailed in Table 4-3, noting these are not mandatory requirements.

Table 4-3: Authorisation – DITT Opportunities for Improvement

| OFI Ref. | Authorisation Condition No. | Opportunities for Improvement |
|---|-------------------------------------|--|
| Mining Management Plan and Reporting | | |
| OFI-21-DE-AUTH-01 | 7.d,e,g [#] | Identify and follow up on any data omissions (i.e. soils, sediments or water transfers in 2021) in the quarterly reports. |
| OFI-21-DE-AUTH-02 | 7.d,e,g | Prepare an annual program/register of Operator deliverables and submissions to assist DITT to manage the acknowledgement of receipt, adequacy review of submissions, and timely request for additional information, if required. |
| Perimeter Run-Off Dams – SPROD, SEPROD, WPROD and EPROD | | |
| OFI-21-DE-AUTH-03 | 45 ^{\$} | Request confirmation from the Operator that EPROD construction is completed and if so, request the construction reports including QA and QC data endorsed by the ICE. |
| Tailings Storage Facility | | |
| OFI-21-DE-AUTH-04 | 46.d, 52.d and 56.a ^{\$} | Monitor construction progress to identify upcoming completion so that the anticipated date of receipt of construction reports is known in advance and to prompt follow-up action if anticipated due date is passed. |
| Schedule D – Environmental Monitoring and Management | | |
| OFI-21-DE-AUTH-05 | Schedule D – 6.a,d,e,f [*] | Amend the Authorisation to accurately reflect the Environmental Management Plan titles approved in the MMP. (DITT advised this task is underway.) |

Note: * 13 November 2020 Authorisation condition number.

\$ 10 August 2020 Authorisation condition number.

The opportunity for improvement for Conditions 7d,e and g is relevant to both the Operator and DITT.

4.2.4 Conclusions

DITT achieved a high level of compliance with the active Authorisation conditions at 95%. The opportunities for improvement include:

- Preparation of an annual program/register of Operator deliverables and submissions to assist DITT to manage the adequacy review of submissions and timely request for additional information, if required

- Follow up on deliverables that have not been received or review documents in order to provide timely feedback so that actions can be implemented in a timely manner by the Operator.

4.3 NT EPA Recommendations – DITT Compliance Audit

4.3.1 Scope and Approach

DITT was assessed against the implementation of the NT EPA recommendations over the audit period using the quantitative audit approach and scoring criteria described in Section 2.2. In all, 117 NT EPA recommendations and sub-parts were considered relevant to DITT, ensuring that the NT EPA recommendations' intent had been transferred to the Authorisation conditions.

The audit of DITT's compliance with the NT EPA recommendations considered the extent to which the intent of the NT EPA recommendations had been adopted in the wording of the Authorisation conditions.

4.3.2 Findings

A summary of findings is shown in Table 4-4.

Table 4-4: Summary of NT EPA Recommendations Implementation Compliance – DITT

| Description | No. |
|---|-----|
| Total number of recommendations (including sub-parts) relevant to DITT to incorporate into the Authorisation | 117 |
| Number of active recommendations (including sub-parts) relevant to DITT to incorporate into the Authorisation | 116 |
| Number of part compliances | 15 |
| Overall compliance score for recommendations adopted into Authorisation | 97% |

Detailed audit findings, supporting evidence, part compliances and scores are contained in *NT EPA Recommendations Compliance Workbook – DITT*. Appendix D also references which Authorisation conditions correspond to the NT EPA Recommendation and sub-part.

There were very few of the 117 NT EPA recommendations that have implementation requirements for DITT. Those that were relevant generally involved the receipt and review of the Operator's monitoring programs, management plans and reports, and the establishment of the Community Reference Group (CRG) and independent panels of experts. The majority of NT EPA Recommendation requirements are implementation tasks for the Operator.

There were four NT EPA recommendations that were given part compliance scores because the timeframe to review or prepare a plan differed (typically longer) or was not included in the corresponding Authorisation condition.

Other NT EPA recommendations achieved part compliance scores due to element(s) of the recommendation not being met in the Authorisation condition. These have been categorised as:

- Timeframes and responsibility for conducting the reviews of operator reports/submissions
- Consultation on management plans and monitoring programs with nominated NT and Commonwealth government agencies
- Making reports available to government agencies and the public
- Specific NT EA recommendation requirements that may or may not be implemented when an authorisation condition is considered in isolation.

The NT EPA recommendations that are currently being progressed by DITT include:

- Establishing the CRG and appointing members
- Establishing the independent panel of experts based on a terms of reference for expert advice on TSF, NOEF and mine closure planning matters.

4.3.3 Opportunities for Improvement

Potential opportunities to support continuous improvement identified by the Independent Monitor through the review and audit process are detailed in Table 4-5, noting these are not mandatory requirements.

Table 4-5: NT EPA Recommendations – DITT Opportunities for Improvement

| OFI Ref. | NT EPA Recommendation No. | Opportunities for Improvement |
|------------------------------------|---------------------------|--|
| Inland Water Environmental Quality | | |
| OFI-21-DE-REC-01 | 8.i | Incorporate into DITT processes a review of the Operator's NOEF management program every three years. |
| OFI-21-DE-REC-02 | 11.i | Incorporate into the TSF independent panel's terms of reference a review of the Operator's TSF management program every three years. |
| OFI-21-DE-REC-03 | 11.ii | Incorporate into the TSF independent panel's terms of reference a review of the TSF seepage monitoring results and appropriateness of the monitoring program every three years. |
| OFI-21-DE-REC-04 | 11. cont. | Incorporate into the TSF independent panel's terms of reference a TSF review report every three years to be made available to the Operator, government agencies, CRG and the public. |

| OFI Ref. | NT EPA Recommendation No. | Opportunities for Improvement |
|--|---------------------------|---|
| Aquatic Ecosystems | | |
| OFI-21-DI-REC-05 | 14.^ | Incorporate into DITT processes a mechanism to confirm that "the results of the ecotoxicological program shall be used to inform trigger criteria in the AMP". |
| OFI-21-DI-REC-06 | 14. cont.^ | Incorporate into DITT processes consultation with other government agencies on the preparation and implementation of the ecotoxicological program, e.g. NT DEPWS and Commonwealth DAWE. |
| OFI-21-DI-REC-07 | 15. cont.^ | Incorporate into DITT processes consultation with other government agencies on the preparation and implementation of the aquatic ecosystem monitoring program, e.g. NT DEPWS and DAWE. |
| OFI-21-DI-REC-08 | 15. cont. | Incorporate into DITT processes a mechanism for the Operator's three-yearly report on the Aquatic Ecosystem Monitoring Program, and the Independent Monitor's audit of this report, to be made publicly available on DITT website. |
| Human Health | | |
| OFI-21-DI-REC-09 | 19. cont.^ | Update a future Authorisation to include reference to the results of the air quality monitoring plan to be audited by the Independent Monitor every three years. |
| Matters of National Environmental Significance | | |
| OFI-21-DI-REC-10 | 21. | Incorporate a requirement into DITT processes to consult other government agencies on the development of non-lethal monitoring program for sawfish monitoring program, including trigger threshold for investigation and management measures, e.g. NT DEPWS and DAWE. |
| Closure and Rehabilitation | | |
| OFI-21-DI-REC-11 | 23.ii | Incorporate a requirement into DITT processes for the independent panel to review the risk of failure of the mine levee wall and the McArthur River diversion channel as part of the closure plan objectives. |
| OFI-21-DI-REC-12 | 23. cont. | Incorporate a requirement into DITT processes for the independent panel to provide a 3-5 yearly review report on the mine closure plan to assess the trajectory of closure options to DITT and the Independent Monitor. To subsequently be made available to the Operator, government agencies, CRG and the public. |
| Adaptive Management | | |
| OFI-21-DI-REC-13 | 27 | Incorporate into DITT processes a mechanism for the Operator's review and synthesis of all monitoring programs and revised monitoring program to be reviewed by the independent panel(s) and the Independent Monitor, and be approved by the relevant regulators, e.g. DITT. |

| OFI Ref. | NT EPA Recommendation No. | Opportunities for Improvement |
|------------------|---------------------------|---|
| General | | |
| OFI-21-DI-REC-14 | Not applicable | Consider the development of a DITT process or register to assist capturing the NT EPA recommendations details that are not explicitly stated in the Authorisation conditions to ensure implementation of the specific requirements is achieved. |

Note: ^ indicates OFI carried over from 2020 NT EPA recommendations compliance audit.

4.3.4 Conclusions

Based on the documentation reviewed, the audit identified that DITT has effectively incorporated the NT EPA recommendations into the Authorisation conditions with an overall compliance score of 97%.

The audit process identified 14 relatively minor opportunities that DITT may adopt as continuous improvement initiatives relating to process improvements to incorporate particular element(s) of some NT EPA recommendations. An action register may assist capturing the NT EPA recommendations details that are not explicitly stated in the Authorisation conditions to ensure implementation of the specific requirement is achieved.

Four of the NT EPA recommendations part compliances were identified in the 2020 AEPAR and remain as OFIs in-progress.

4.4 Regulatory Approach – DITT Review

4.4.1 Scope and Approach

A review of DITT's performance and regulatory approach was conducted by examining the following key regulatory activities:

- DITT assessments and site visits to the mine
- EMR review
- DITT regulatory strategy
- Establishment of the CRG
- MMP and authorisation approval.

Through interviews and assessment of relevant documents and samples of information, the review considered performance indicators (such as timeliness of actions completed, environmental risk profile and adequacy of response, environmental protection outcomes, follow up/close out of actions, achievements, and OFIs). Pre-prepared questions were used to provide structure and consistency around the review of DITT's regulatory activities. These focused the review on key environmental issues, environmental risk management processes, challenges and communication.

4.4.2 Findings

DITT Assessment and Site Visits to the Mine

A site inspection was conducted by DITT officers on 02 December 2020. A site inspection report was produced documenting inspection findings for the key areas visited, including the BBLF, Open Pit, NOEF, Diversion Channel, and Nursery. Current Mine progress was recorded and DITT's report concluded that the Mine continues to operate in accordance with the Authorisation conditions. The key recommendation outlined in DITT's report related to dust generation from a neighbouring (non-MRM) operation at BBLF that was migrating onto MRM leases.

Regular site inspections by DITT are beneficial as they allow a physical observation and assessment of the Mine's condition to verify evidence of progress against the monitoring programs, reporting, Authorisation, AMP and EMR. DITT advised that given their resources, mine site visits, inspections and audits are conducted based on priority. Priority is informed by relative risk considerations across all projects regulated under the MMA with the intention to visit high priority sites annually. Restrictions due to the COVID-19 pandemic were unpredictable and added uncertainty to site visit planning. Where practical, it is DITT's intention to conduct site visits to the Mine twice per year. A more recent DITT site inspection was conducted on 20 May 2021, outside of the audit period.

The Environmental Monitoring Unit (EMU) are part of DITT Mining Operations. The EMU conduct independent environmental field monitoring to confirm the Mine operators' monitoring data is representative and reliable. The Independent Monitor is not aware of any monitoring conducted by the EMU at the Mine during this audit period.

The Technical Working Group (TWG) meetings are held fortnightly between DITT and the Mine's environmental team to provide a regular opportunity to review progress, consider and resolve emerging issues, and plan upcoming activities. Both parties reported that they value the TWG as it supports regular communication and maintains an effective working relationship as well as providing a forum to consider a wide range of project matters. The TWG enables any emerging issues to be addressed in a timely manner rather than waiting for the annual reporting of monitoring results or the submission of the EMR each August.

In response to a notification under Section 29 of the MMA in November 2020, DITT conducted an assessment into a road transport concentrate minor spill incident on the Carpentaria Highway. As a result of increased frequency of minor concentrate spillage incidents from road transport, DITT requested a root cause analysis and examined the lessons learned. The assessment found contributing factors included residual concentrate on the trailer bodies, road conditions, and driver behaviour. Actions taken included trailer repairs and the implementation of speed limits, which has resulted in no further incidents in the following five months.

No enforcement notices were issued by DITT to the Operator during the audit period. This indicates there were no serious environmental incidents or breaches of Authorisation conditions identified that triggered DITT regulatory enforcement action.

Environmental Monitoring Report Review

The EMR describes the environmental and operational performance of the Mine and the BBLF. The EMR was prepared in consideration of DITT's comments on the previous three years' OPRs, and provided details of how DITT's comments had been addressed. The 2019-20 EMR prepared by the

Operator was submitted to DITT on 31 August 2020. DITT's review, response and acceptance of the EMR took a period of eight months.

A renewed approach to the EMR format developed by DITT and the Operator was adopted where the focus was on the content of the EMR report, and not the supporting technical appendices. The key outcomes of each appendices' monitoring program technical report was summarised and included in the EMR executive summary. The summary discussion of each monitoring program also addressed outcomes of expert specialist reviews and recommendations for additional monitoring or management measures. The revised EMR format has improved readability by organising and presenting the key outcomes and recommendations in a concise manner, while retaining all the supporting technical information in the appendices.

DITT and the Operator worked on a new inclusion to the EMR that incorporated a holistic assessment of environmental performance at the Mine. The new section utilises a SPR conceptual site model to combine various monitoring programs' data to determine environmental risk from potential contaminate sources and stressors to a receptor.

Seven sacred sites flagged by the NT Aboriginal Areas Protection Authority (AAPA) as being potentially groundwater-dependent have groundwater data regularly reviewed. DITT and the Operator have worked to include hydrogeological information relevant to these sacred sites added to the EMR 2021 as part of the annual groundwater review report, outside of this audit period.

DITT Regulatory Strategy

DITT, with the support of the Operator, is to establish and operate an independent panel of expert(s) to advise on matters affecting the environmental performance of the NOEF, TSF and mine closure planning. DITT's intention for the independent panel is to provide continuous oversight of key issues culminating in reporting to the Independent Monitor and DAWE at three-yearly intervals.

Establishment of a CRG and Independent Panel(s) of Experts

DITT is responsible for the establishment and operation of a CRG, with the support of the Operator.

The purpose of the CRG is to:

- Communicate the McArthur River Mine's performance to the local and broader NT community
- Advise on the most appropriate method for MRM to report information that is required to be made publicly available
- Provide a structured forum for review and discussion on environmental objectives for adaptive management, operation, care and maintenance, mine closure, and the evaluation and costing of mine closure options
- Provide a forum for discussing economic and social post-mining impacts
- Translate technical information into communication that is readily understood by the community, clearly stating the outcomes to be achieved and the progress in achieving them for both operational and closure matters
- Provide a mechanism to communicate community feedback to the Northern Territory Government and MRM regarding McArthur River Mine.

The CRG will be appointed by the Minister of DITT and will be coordinated by DITT. The CRG's draft terms of reference (version 02, dated 28 May 2021) was endorsed by NT EPA and has been published

on DITT CRG's website. Public advertising for expressions of interest for members to join the CRG closed on 31 October 2021.

The CRG will be chaired by an independent person appointed by government, who is held in high regard in civic duties, has expertise in taking community interests into account, and has experience in the position of Chair. The CRG will comprise members who represent the local community who are directly influenced by the operation of McArthur River Mine, as well as key stakeholders, particularly custodians and Traditional Owners, and the broader Northern Territory community.

Progress to establish the CRG has been slowed as a result of competing demands on DITT staff and the complexities of stakeholder and local community engagement due to COVID-19 restrictions. The CRG is anticipated to be established by mid-2022.

DITT noted that the establishment of the CRG has been prioritised over the establishment of technical panel(s).

DITT, assisted by the Operator, must establish and operate an independent panel(s) of experts to advise on matters affecting the environmental performance of the NOEF, TSF and mine closure planning. Authorisation conditions for independent review of some of the Operator's monitoring programs and reporting are not triggered (and are constrained from commencing) until the establishment of the independent panel(s).

DITT advised that the development of the independent panel terms of reference are currently underway and that consideration is being given to establish a single panel to advise on NOEF and TSF matters. Provided the proposed single panel comprises appropriate expertise and experience to cover both the NOEF and TSF, this would expedite panel establishment and facilitate panel operation efficiencies.

MMP and Authorisation Approach

DITT's approval of the MMP (dated 31 January 2020) provided the opportunity to overhaul the Authorisation, which was encumbered with historic unwieldy and/or obsolete amendment conditions. Significant effort on DITT's part achieved the consolidation of the previous 131 conditions into 100 conditions accompanied by Schedules A to D, and created a simplified and more useable Authorisation document (dated 13 November 2020). The overhauled Authorisation improvements included:

- Removing duplication between the ICE and ITRP tasks
- Combining the overarching independent panel(s) of expert's requirements into one section
- Consolidating monitoring (e.g. water, air, dust, vegetation, terrestrial fauna, etc.) requirements into one section (Schedule D)
- Incorporating whole-of-life mine planning, including care and maintenance and mine closure
- Consolidating TSF requirements into one section and removing cross-referencing.

4.4.3 Opportunities for Improvement

Potential opportunities to support continuous improvement identified by the Independent Monitor through the review process are detailed in Table 4-6, which applies to the regulatory approach, noting these are not mandatory requirements.

Table 4-6: DITT's Regulatory Approach Opportunities for Improvement

| OFI Ref. | Opportunities for Improvement |
|-------------------------------|---|
| OFI-21-DE-REG-01 | Prioritise the establishment of the independent panel of experts for TSF and NOEF to trigger and facilitate independent reviews of the Operator's monitoring program and reporting. |
| OFI-21-DE-REG-02 | Ensure the independent panel(s) terms of reference encompass the appointment of a suitable level expertise and experience if a single independent panel is established to cover both the NOEF and TSF. |
| OFI-21-DE-REG-03 | Create independent panel terms of reference with the flexibility to enable the addition of mine closure expertise to any existing panel, rather than the need to establish a standalone mine closure independent panel. |
| OFI-21-DE-REG-04 [^] | Facilitate an internal DITT review to examine the annual EMR process, tasks and outputs with a view to streamline the activity. As part of this review, examine what is sufficient for regulatory requirements and responding to community expectations, as well as how the annual process could be more efficient. |
| OFI-21-DE-REG-05 [^] | Prepare an internal procedure for the regulation of the Authorisation conditions and NT EPA recommendations to document the processes, timing, due dates, overdue submissions, approvals, decisions, public /community communication and records requirements to assist managing the complex regulatory requirements relating to DITT activities. |
| OFI-21-DE-REG-6 [^] | Further streamline the documentation and approval process to improve efficiencies and focus on implementation of initiatives to improve performance. |
| OFI-21-DE-REG-7 [^] | Improve communication and collaboration with other government agencies (Commonwealth and NT) to align objectives and actions, streamline processes, and improve environmental outcomes. |
| OFI-21-DE-REG-8 [^] | Reduce reliance on key individuals within DITT to ensure consistency and continuity of compliance and performance. |

Note: [^] indicates OFI carried over from 2020 NT EPA recommendations compliance audit.

4.4.4 DITT Successes

The audit and review process identified some noteworthy successes achieved by DITT during the audit period which exceeded the regulatory compliance requirements and have contributed to continuous improvement (refer to Table 4-7: DITT's regulatory activities successes).

Table 4-7: DITT's Regulatory Activities Successes

| No. | DITT Success |
|-----|--|
| 1 | The revised EMR format has improved readability since collating and presenting the monitoring programs' key outcomes and recommendations in the executive summary, while retaining all the supporting technical information in the appendices. |
| 2 | The EMRs now include a holistic assessment of environmental performance utilising a SPR conceptual site model to combine various monitoring programs' data to determine environmental risk. |
| 3 | TWG continues to enable regular communication between DITT and MRM to assist to maintain an effective and valuable working relationship to resolve matters early and prior to becoming issues. |
| 4 | Seven sacred sites flagged by the AAPA as being potentially groundwater-dependent have hydrogeological data regularly reviewed and are included in the annual groundwater review report and have now been added to the EMR in 2021. |
| 5 | Mines Branch is making better use of the environmental systems database (ESDAT) to summarise quarterly mine monitoring data and highlight any critical exceedances. |
| 6 | The continued strong focus on key environmental areas that could be high risk if adequate risk controls were not in place (e.g. high number of conditions on NOEF and TSF), and a practical approach to compliance and monitoring. |
| 7 | The continued improved environmental performance and high levels of regulatory compliance by the Operator can be attributed, at least in part, to the processes and approach developed and adopted by DITT for the Mine. |

4.4.5 Conclusions

A review of DITT's performance in regulatory procedures and regulatory approach was conducted by examining a selection of key regulatory activities that were, for the most part, different from those reviewed in the previous AEPAR in 2020. The review acknowledges the significant technical and administrative task for DITT to regulate the Mine's activities.

DITT achieved two major milestones during the audit period as a result of more than two years of strategic planning and work with the Operator. The first milestone was the overhaul and rationalisation of the Authorisation document which consolidated the approval conditions for the MMP. The second milestone was that the revised EMR format has improved readability by presenting a summary of monitoring program outcomes while retaining all of the supporting technical information in the appendices. In addition, the EMRs now include a holistic assessment of environmental performance utilising a SPR conceptual site model to bring together monitoring data to determine environmental risk.

The review findings identified some opportunities around streamlining activities, especially those recurring regulatory processes (e.g. annual EMR review) that may be made more efficient. The potential benefit of streamlining some of DITT's documentation and approval processes would be efficiency gains. This would enable greater focus on the implementation of initiatives to continuously improve the Mine's environmental performance.

5 Review of River System Health

5.1 Objective

The objective of the review of river system health was to assess relevant freshwater aquatic ecology monitoring programs and management actions developed by the Operator to meet the Authorisation conditions. The review was also to provide an assessment of the monitoring program and general river system health, based on documentation provided by the Operator.

5.2 Scope and Approach

The scope of this review included reviewing the freshwater aquatic ecology-related environmental assessments and monitoring activities undertaken during the audit period by the Operator and subcontractors engaged by the Operator. An assessment was undertaken of the McArthur River health over a large but defined area in the vicinity and downstream of the Mine, covered by the monitoring programs; it does not provide information that covers the larger catchment scale area.

The river health and freshwater aquatic ecology assessment was undertaken by Independent Monitor sub-consultant, Freshwater Ecology Pty Ltd, and included:

- Reviewing the operating legislative requirements of DITT relevant to the freshwater aquatic ecology assessment
- Reviewing monitoring programs and management actions developed to meet the operating requirements of DITT and environmental objectives
- Assessing the Operator's implementation of management and monitoring programs during the audit period including conclusions drawn
- Undertaking a general assessment of the health of the McArthur River system in the vicinity and downstream of the Mine based on the information provided by the Operator.

The review was undertaken with the following limitations:

- Documents dated prior to 2018 were not reviewed as the review focused on the monitoring report documentation provided by the Operator for the audit period in consideration of the legislative requirements, the MMP and Appendices (specifically management plans)
- No site visit and associated interviews were undertaken by Freshwater Ecology staff
- A river health assessment was based on data provided by the Operator only and was undertaken at a high level.

5.3 Findings

5.3.1 Context

The significance of river health is reflected in the overarching environmental management objectives for the Mine as set out in the MMP, which includes:

- Objective 1: Protect the McArthur River's beneficial uses and community values from mining impacts.

- Objective 2: Facilitate development of the ecosystems and their functions along the McArthur River Diversion Channel for terrestrial and aquatic flora and fauna.

Management actions and monitoring programs for freshwater aquatic ecology relevant to these objectives are discussed below, followed by a description of the efficacy of these actions and programs in address of the objectives. A summary discussion of river system health is subsequently provided.

5.3.2 Management Actions

As set out in the MMP, the Operator undertakes various activities as part of the management of potential impacts of the Mine to freshwater aquatic ecology and for protection of river health, including:

- Implementation of design and operational controls
- Application of adaptive management
- Rehabilitation.

Design and Operational Controls

Design and operational controls relevant to the management of impacts to freshwater aquatic ecology and protection of river health include:

- A water management system to prevent contaminated water from entering the river system
- Dust emission controls to prevent contamination of waterways via dust
- Conditions under which good quality water, following storage and treatment, may be released into the surrounding waterways and not impact the environmental values (as detailed in the WDL)
- Detailed design for the NOEF, which includes various quality control checks, including the requirement for an ICE
- Detailed design for the TSF, which includes various quality control checks including the requirement for an ICE and ITRB
- Seepage-capture ponds and sumps to prevent contaminated seepage from entering waterways
- Routine inspections and monitoring of infrastructure.

Adaptive Management

A central component of the Operator's Environmental Management Framework is the AMP, a document that facilitates management and decision-making over time in response to evolving knowledge, environmental performance, and changing circumstances. TARPs are implemented by the Operator as part of the AMP to manage potential adverse environmental conditions, mitigate environmental impacts, inform mitigation options where required, and to assess performance against overarching environmental objectives.

The TARP structure consists of three levels which each have specific triggers, actions and responses. Level 1 is when a trigger value suggests the performance is achieving its environmental objective, and Level 2 is when a performance indicator is above the Level 1 trigger value (indicating that performance is within expected, predicted and/or conditional levels) and the environmental objective is still being met, however further investigation of the trend is warranted. Level 3 is when a performance indicator is above the Level 2 trigger value (indicating that performance is outside expected, predicted and/or

conditioned levels) and further investigation is needed to determine if additional controls are required in order to continue to meet environmental objectives. For Level 1, TARPs monitoring and management continue as per the MMP, whereas for Levels 2 and 3, TARPs additional monitoring and mitigation controls are applied.

TARPs relevant to management of impacts to freshwater aquatic ecology and protection of river health include the address of:

- Presence of freshwater sawfish and migratory species diversity
- Macroinvertebrate species richness/assembly
- Aquatic fauna species diversity and relative abundance
- Metal concentrations in aquatic fauna
- Progress of revegetation along the McArthur River diversion channel.

Ongoing management actions are undertaken by the Operator as part of adaptive management to support achievement of the overarching environmental management objectives. Relevant to the assessment of river health during the audit period is the Operator's removal of potentially-contaminated sediments from a tributary to McArthur River (i.e. Barney Creek channel) within the mineral lease boundary.

Rehabilitation

The Rehabilitation Management Plan (RMP), prepared by the Operator, establishes a rehabilitation management and monitoring system that enables the progress of rehabilitation towards closure objectives. The key rehabilitation activities relevant for freshwater aquatic ecology are:

- Revegetation along the McArthur River and Barney Creek diversion channels
- The introduction of instream woody debris along the McArthur River diversion channel.

Revegetation of the diversion channels commenced in 2007 and has continued since. The key objectives of revegetation are to:

- Increase bank stability
- Provide shading within the river channel
- Provide a source of carbon for freshwater aquatic ecosystems
- Provide a long-term source of instream woody debris.

To date, the focus has been on replanting the upper sections of the diversion channels in accordance with the schedule in the RMP.

Installation of LWD in the diversion channels has been undertaken since 2010, with the key objectives of LWD introduction being to:

- Increase meso and microhabitat diversity within the channel
- Alleviate bank erosion
- Provide a source of carbon for freshwater aquatic ecosystems
- Provide refuge holes for migrating fish.

To supplement the LWD program, small and medium-sized woody debris has also been added to the McArthur River diversion channel. The aim of this is to add additional organic matter to the channel to improve macroinvertebrate assemblages.

5.3.3 Freshwater Ecology Monitoring Programs

The Operator undertakes several freshwater ecology monitoring programs to support assessment of the efficacy of management actions and associated outcomes relevant to the overarching environmental management objectives, including:

- Freshwater macroinvertebrate monitoring
- Freshwater aquatic fauna diversity and abundance
- Freshwater sawfish and barramundi acoustic monitoring
- Metals in freshwater aquatic fauna.

During the reporting period, there were several changes made to the monitoring programs, and future changes are proposed to improve ongoing assessments (refer to Table 5-1).

Table 5-1: Changes to Freshwater Ecology Monitoring Programs

| Monitoring Program | Changes Made 2020 - 2021 | Future Changes Proposed |
|---|---|--|
| Freshwater Macroinvertebrate Monitoring | <ul style="list-style-type: none"> • Removal of off-stream reference sites and increase number of sites within the McArthur River catchment. <p>An additional minor drainage line reference site on Caranbirini Creek was added. Plans to increase the number of downstream reference sites were paused due to COVID-19 travel restrictions in the vicinity of the township of Borroloola.</p> | <ul style="list-style-type: none"> • Continue investigation of family versus genus level. • Establish downstream reference sites with riffle habitat present in future sampling pending the removal of COVID-19 travel restrictions. • Continue and expand LWD placement within the McArthur River diversion channel. |
| Diversity and Abundance of Freshwater Aquatic Fauna | <ul style="list-style-type: none"> • No changes, but due to COVID-19 precautions, there was restricted access at downstream sites in the early dry period (March 2020). | <ul style="list-style-type: none"> • None. |
| Freshwater Sawfish and Barramundi Acoustic Monitoring | <ul style="list-style-type: none"> • None. | <ul style="list-style-type: none"> • Targeted capture and tagging event to supplement the existing opportunistic tagging undertaken during aquatic fauna surveys. |
| Metals in Freshwater Aquatic Fauna | <ul style="list-style-type: none"> • Inclusion of thallium in fish tissue analyses. | <ul style="list-style-type: none"> • None. |

5.3.4 Environmental Management Objectives

For each of the overarching environmental management objectives for the Mine (described below), consideration is given to addressing the objective through the management actions and monitoring programs.

Objective 1. Protect the McArthur River beneficial uses and community values from mining impacts

The current monitoring programs are considered suitable and sufficiently well-designed to assess potential impacts on the McArthur River freshwater ecosystems and beneficial uses. Table 5-2 provides a summary of the applicability of each monitoring program (relevant to this objective) that was undertaken during the audit period and the key conclusions drawn.

Table 5-2: Monitoring Program Outcomes for Protection of the McArthur River Beneficial Uses and Community Values From Mining Impacts

| Monitoring Program | 2020 - 2021 | Key Conclusions |
|---|---|--|
| Freshwater Macroinvertebrate Monitoring | This monitoring program has been developed and refined since 2008 to allow for a quantifiable and site-specific assessment to detect statistically significant differences in freshwater aquatic macroinvertebrate communities resulting from Mine activities. | The Independent Monitor agrees with the conclusions of the Operator's external expert's assessment that it indicates no statistically significant differences in macroinvertebrate assemblages in sites upstream and downstream of mine operations for the monitoring period encompassing 2020 - 2021. |
| Diversity and Abundance of Freshwater Aquatic Fauna | This monitoring program has been developed and refined since 2006 to allow for a quantifiable and site-specific assessment to detect statistically significant differences in freshwater aquatic fauna resulting from Mine activities. | The monitoring program appears to have been implemented in accordance with the approved MMP. Despite the reduction in sites sampled due to COVID-19 restrictions, the Independent Monitor agrees with the conclusions of the Operator's external expert's assessment that there has been no observable change in species diversity and abundance outside the range of natural variance (largely driven by inter-year seasonal flow variation). |
| Metals in Freshwater Aquatic Fauna | This monitoring program has been developed and refined since 2005. Significant improvements to the monitoring program were made in 2009 to allow species specific comparisons between sites. In 2014, larger species (more likely to be consumed by people) were included in the monitoring program. These and other improvements have increased the appropriateness and robustness of the program. | The Independent Monitor agrees with the conclusions of the Operator's external expert's assessment that the data suggests little measurable effect on tissue metal concentrations in the McArthur River and downstream environments. The program is suitably designed to detect any potential metal tissue concentration elevations in the future. Past detection of elevated metal tissue concentrations has informed management actions. |

For each of the monitoring programs, the 2021 EMR assesses compliance against the relevant performance triggers. The performance indicators and trigger values provide clear direction and actions to mitigate potential impacts when and if they occur. Level 1 performance was achieved for all freshwater aquatic ecology monitoring categories relevant to this objective.

The Independent Monitor agrees with the conclusions of the Operator's external expert's assessment that the adaptive management action undertaken to remove potentially-contaminated sediments from a tributary to McArthur River (i.e. Barney Creek channel) appears to have contributed to protecting downstream beneficial uses and environmental values. Results of sediment analysis show reductions in cadmium, arsenic, lead, and zinc concentrations, compared with those recorded in 2018, with cadmium and arsenic no longer in exceedance of the relevant sediment quality guideline value.

Limited numbers of the freshwater mussel, *Velesunio angasi*, were collected due their limited abundance in the environment, and noting COVID-19 travel restrictions would limit the completion of further monitoring. Tissue metal concentrations were highly variable across the study area but consistent with results of previous sampling, very high concentrations of naturally-occurring analytes, including aluminium, manganese, iron and total arsenic, have been consistently recorded in this species throughout the region, including for catchments not affected by the Mine.

Analysis of metals in aquatic fauna during the audit period showed that exceedances of Maximum Permitted Concentrations (Australia New Zealand Food Standards Code, Standard 1.4.1, Schedule 19) in lead tissue concentrations were limited to environmental indicator species at one site on Barney Creek *Nematalosa erebi* (bony bream) and at another site on Barney Creek for two specimens of *Melanotaenia splendida* (eastern rainbowfish). These species of fish are not considered commonly consumed.

Both locations are within the Mine site and mineral lease boundary. The public do not have access to these locations and waterway signage states that public access to these areas is prohibited. Reductions in the tissue metal concentrations since 2018 appear to be attributable to the management actions (described above) taken to remove potentially-contaminated sediments from the Barney Creek channel.

Data collected over the 2020-2021 monitoring program demonstrated that all other fish caught throughout the McArthur River catchment were considered safe to consume. This includes commonly consumed species such as *Lates calcarifer* (barramundi) and *Hephaestus fuliginosus* (sooty grunter). While no fish tissue samples were collected at the downstream sites near Borroloola (due to COVID-19 restrictions), similar results at sites sampled within the previous two years suggest it is likely that fish in downstream areas would also be safe to consume; however, ongoing monitoring of this should continue during the 2021-2022 monitoring period.

Objective 2. Facilitate development of the ecosystems and their functions along the McArthur River diversion channel for terrestrial and aquatic flora and fauna

The current monitoring programs are considered by the Independent Monitor to be suitable and sufficiently well-designed to monitor the development of ecosystems and their functions along the McArthur River diversion channel. The management actions to revegetate the stream banks and to introduce instream LWD are appropriate for facilitating the development of the ecosystems and their functions along the McArthur River diversion channel. While the McArthur River diversion channel appears to offer a lower level of quality aquatic habitat in edge habitats than the natural river channel, there appears to be trajectory of increasing ecosystem diversity and resilience.

Table 5-3 provides a summary of the applicability of each monitoring program (relevant to this objective) that was undertaken during the audit period and the key conclusions drawn.

Table 5-3: Review of Monitoring Program Outcomes for Facilitation of Development of the Ecosystems and Their Functions Along the McArthur River Diversion Channel for Terrestrial and Aquatic Flora and Fauna

| Monitoring Program | 2020 – 2021 | Key Conclusions |
|---|---|--|
| Freshwater Macroinvertebrate Monitoring | This monitoring program has been developed and refined since 2008 to monitor the development of instream habitats in the McArthur River and Barney Creek diversion channels. The level of sampling and sampling sites selected were appropriate for meeting the monitoring objective to assess development of macroinvertebrate assemblages within the diversion channels. | The monitoring program appears to have been implemented in accordance with the approved MMP. The Independent Monitor agrees with the conclusions of the Operator's external expert's assessment, that the results suggest that macroinvertebrate assemblages riffle sites along the McArthur River diversion channel appeared to have resembled those in reference sites within two years of channel operation, and that edge habitats were becoming more similar over time. |
| Diversity and Abundance of Freshwater Aquatic Fauna | Components of this monitoring program have been developed and refined since 2008 to monitor changes in aquatic fauna in the diversion channels, monitor fish passage success through the McArthur River diversion channel, and assess the effectiveness of adding woody debris to the McArthur River diversion channel as a key rehabilitation strategy. | The monitoring program appears to have been implemented in accordance with the approved MMP. The Independent Monitor agrees with the conclusions of the Operator's external expert's assessment that there has been no observable change in species assemblages related to mining activities. Fish assemblages in complex habitat (i.e. where woody debris has been introduced) were comparable with naturally-complex habitat upstream and downstream of the diversion channel. |
| Freshwater Sawfish and Barramundi Acoustic Monitoring | Since 2011, tagging has focused on migratory species, notably barramundi and sawfish. This included dart tags, and for specimens captured at locations whose future movements were likely to inform the objectives of the acoustic monitoring program, the specimens were fitted with acoustic tags. | The recording of a juvenile sawfish at the upstream extent of the McArthur River diversion channel in the 2020-2021 period and individuals recorded in 2017 and 2018 above the diversion channel supports the assertion that fish passage for this species is not impaired. |
| Metals in Freshwater Aquatic Fauna | This monitoring program has been developed and refined since 2005. Significant improvements to the monitoring program were made in 2009 to allow species specific comparisons between sites. In 2014, larger species (more likely to be consumed by people) were included in the monitoring program. These and other improvements have increased the appropriateness and robustness of the program. | The monitoring program appears to have been implemented in accordance with the approved MMP. The Independent Monitor agrees with the conclusions of the Operator's external expert's assessment that Mine operations continue to have little measurable effect on the McArthur River main channel but that several exceedances in the Barney Creek diversion channel require ongoing monitoring/management to reduce the risk of future exceedances. |

For each of the monitoring programs, the EMR 2021 assesses compliance against the relevant performance triggers. The performance indicators and trigger values provide clear direction and actions to mitigate potential impacts when and if they occur. Level 1 performance was achieved for all freshwater aquatic ecology monitoring categories relevant to this objective.

The management action to revegetate the banks of the Barney Creek diversion channels commenced in 2007 and the McArthur River diversion channel in 2009. The revegetation of banks along the diversion channels is likely to provide short-term benefits in the form of bank stabilisation, and long-term benefits through providing organic input, increased shading, and a natural source of instream woody debris recruitment. The Independent Monitor agrees that the development of a functional riparian vegetation community will facilitate the development of the ecosystems along the diversion channels.

The management action to introduce instream woody debris into the diversion channels commenced in 2010. The introduction of instream woody debris provides a short to medium term benefit of providing habitat, increasing mesohabitat and habitat diversity, and providing organic input for aquatic ecosystems. The Independent Monitor agrees with the results of the Operator's external expert's assessment that the introduction of instream woody debris is most likely contributing to increased macroinvertebrate assemblage development and resilience.

5.3.5 River System Health

The Operator has classified the condition of the McArthur River within the Mine area as a slightly to moderately-disturbed ecosystem, in accordance with Australian and New Zealand guidelines for fresh and marine water quality (2018). Slightly to moderately-disturbed systems (95% biodiversity protection) are ecosystems in which aquatic biological diversity may have been slightly adversely affected by human activity; however, biological communities remain in a healthy condition and ecosystem integrity is largely retained.

Overall, the monitoring results obtained from the Operator indicate that the aquatic ecosystems of the McArthur River and its tributaries are in good condition. These creeks are highly-ephemeral and retain little water for much of the year. As described above, analysis of metals in aquatic fauna during the audit period showed that exceedances of Maximum Permitted Concentrations (Australia New Zealand Food Standards Code, Standard 1.4.1, Schedule 19) in lead tissue concentrations were limited to species not commonly consumed, from two sites on Barney Creek, both within the mineral lease boundary where public access is prohibited.

Data collected over the 2020-2021 monitoring program demonstrated that all other fish caught throughout the McArthur River catchment, including commonly consumed species such as barramundi and sooty grunter, were safe to consume. The review of monitoring data to-date indicates there is an extremely low risk to human health from consuming the monitored fish species caught in the McArthur River catchment in the vicinity or immediately downstream of the mineral lease.

Consistent with previous sampling results, concentrations of metal in freshwater mussel tissue were highly variable and commonly included very high concentrations of naturally-occurring analytes, including aluminum, manganese, iron and total arsenic, across the area monitored which includes catchments not affected by the Mine. It is considered unlikely that enough mussels could be collected and consumed by an individual to exceed an intake of metals that would have a detrimental health effect; however, due to the high levels of metals found in the mussels in the region, it is suggested that their consumption be limited.

The McArthur River diversion channel was constructed over the 2008-2009 wet season. While it does not provide the same habitat as naturally-formed river channels, there have been significant and ongoing efforts to reinstate habitat conditions typical of natural river channels, primarily development of the riparian vegetation and the introduction of instream woody debris. The monitoring data collected to-date suggests that these actions have improved and are likely to continue to improve the aquatic habitat along the McArthur River diversion channel.

5.4 Opportunities for Improvement

Potential opportunities to support continuous improvement identified for river system health through the review and audit process are detailed in Table 5-4, noting these are not mandatory requirements.

Table 5-4: River Health System Opportunities for Improvement

| OFI Ref. | Monitoring Program / Management Action | Opportunities for Improvement |
|-----------------|---|---|
| OFI-21-OP-RH-01 | Freshwater Macroinvertebrate Monitoring | Adopt the conclusions of the Operator's external experts that it is preferable to increase the number of reference sites along the McArthur River rather than in adjacent catchments. |
| OFI-21-OP-RH-02 | Freshwater Macroinvertebrate Monitoring | Increase the number of downstream reference sites with riffle microhabitat in future sampling as planned. |
| OFI-21-OP-RH-03 | Diversity and Abundance of Freshwater Aquatic Fauna | Maintain longer term data collection for comparison of annual aquatic fauna program to better understand longer-term trends and influences of inter-year variability in-flow on aquatic fauna community development and resilience in the McArthur River diversion channel. |
| OFI-21-OP-RH-04 | Freshwater Sawfish and Barramundi Acoustic Monitoring | Increase the number of tagged fish to replace the fish for which batteries in the tag are reaching their expiry dates. |
| OFI-21-OP-RH-05 | Aquatic Fauna – Metals [^] | Determine if inclusion of tissue metal concentration sampling at the remote Batten Point (McArthur River estuary) location would be beneficial to the monitoring program and/or enhance the relevance of the monitoring program to the local community. |

Note: [^] indicates OFI carried over from 2020 AEPAR.

5.5 Conclusions

Since the commencement of operations at the Mine in 1995, there have been numerous changes to the mining operations and the Authorisation conditions. Some of the changes have arisen from NT Department interests in the freshwater aquatic ecosystem health and the beneficial uses of the McArthur River. These changes have broadened and strengthened the management and monitoring programs as they have evolved.

The Operator has a broad range of monitoring programs and management actions that have been developed over the mine life to meet the environmental objectives. During the audit period, these were well-implemented and where impacts were noted, they were adequately described and mitigation actions recommended consistent with the TARPs. The review supports the continuation of the current aquatic ecology monitoring programs as these activities are appropriate and effective to achieve the river system health objectives.

Overall, the McArthur River and its tributaries are considered to be in good health, with some exceptions noted in areas immediately adjacent and proximal to the Mine's operational areas. These localised issues are associated with some elevated levels of metals in Barney Creek immediately adjacent to mining activities and within the mineral lease boundary. These will require ongoing monitoring and management.

The management actions undertaken to remove potentially contaminated sediments from Barney Creek channel appears to have contributed to protecting downstream beneficial uses and environmental values. Results of sediment analysis show reductions in metals concentrations compared with those recorded in 2018, with cadmium and arsenic no longer in exceedance of the relevant sediment quality guideline value.

Consistent with previous sampling results, concentrations of metal in freshwater mussel tissue were highly variable and commonly included very high concentrations of naturally-occurring analytes, including aluminum, manganese, iron and total arsenic, across the area monitored which includes catchments not affected by the Mine. It is considered unlikely that enough mussels could be collected and consumed by an individual to exceed an intake of metals that would have a detrimental health effect; however, due to the high levels of metals found in the mussels in the region, it is suggested that their consumption be limited.

Data collected over the 2020-2021 monitoring program demonstrated that fish caught outside of the mineral lease boundary and throughout the McArthur River catchment, including commonly consumed species such as barramundi and sooty grunter, were safe to consume. The review of monitoring data to-date indicates there is an extremely low risk to human health from consuming the monitored fish species caught in the McArthur River catchment in the vicinity or immediately downstream of the mineral lease.

Monitoring of the McArthur River diversion channel suggests that the management actions to vegetate the riparian zone and introduce instream woody debris are facilitating the development of the ecosystems and their functions.

6 Comparative Analysis 2020 and 2021

6.1 Objective

The objective of the comparative analysis between the 2020 and 2021 AEPAR findings is to assess trends in the Authorisation, WDL, NT EPA recommendations and river health sections of the AEPAR.

6.2 Scope and Approach

The scope of this comparative analysis involved: (i) for the Operator, a quantitative comparison between the 2020 and 2021 AEPAR findings relating to the Authorisation and WDL; and (ii) for DITT, a quantitative comparison between the 2020 and 2021 AEPAR findings relating to the Authorisation and NT EPA recommendations. A qualitative review of trends and whether OFIs remained was also undertaken for the approvals. Findings identified for river system health for the current audit were qualitatively compared to those of the 2020 AEPAR.

6.3 Findings

This AEPAR examined 1,055 conditions, requirements and individual elements contained in the Authorisation, WDL and NT EPA recommendations. 524 active requirements were identified. Out of these active requirements 39 part compliances were identified where the Operator or DITT failed to meet a small number of elements of the condition or requirement.

The comparative findings are discussed in the relevant sections below, grouped by Operator, DITT, and river system health.

The overall Operator compliance score has increased by 1% for both Authorisation and WDL. This improvement has been achieved by the Operator's focussed attention on part compliances and corresponding OFIs contained in the previous AEPAR. The marginal increase is an indicator of the Operator's efforts in achieving continuous improvement. The total number of Operator OFIs was 30 in 2020, and 43 OFIs have been raised in this 2021 AEPAR. Five Operator OFIs are carried over from 2020.

The overall compliance score by DITT has decreased by 2% for Authorisation and by 1% for the NT EPA recommendations. Despite the slightly lower score in 2021, DITT has maintained a very high level of compliance. The total number of DITT OFIs was 27 in both the 2020 and 2021 AEPAR. Nine DITT OFIs are carried over from 2020.

Consistent with the findings reported in the 2020 AEPAR, the river system health monitoring indicates:

- No observable change in freshwater aquatic fauna species diversity and abundance outside the range of natural variance
- Aquatic ecosystems of the McArthur River and its tributaries are in good condition
- An extremely low risk to human health from consuming the monitored fish species caught in the McArthur River catchment in the vicinity or immediately downstream of the mineral lease.

6.3.1 Operator

There was a significant overhaul of the Authorisation released on 13 November 2020. There were 78 conditions in the two previous Authorisations that were no longer relevant for the 13 November 2020 Authorisation (i.e. there was no equivalent condition in the 13 November 2020 Authorisation).

The comparison between the 2020 and 2021 Operator Authorisation audit condition numbers and compliance scores are shown in Table 6-1.

Table 6-1: Summary Table for Comparison of 2020 and 2021 Operator Authorisation Findings

| Operator Authorisation | 2020 | 2021 |
|---|------|------|
| Total number of conditions and sub-conditions* | 399 | 516 |
| Number of active conditions and sub-conditions* | 176 | 221 |
| Number of part compliances | 32 | 34 |
| Overall compliance score | 95% | 96% |

Note: *Relevant to the Operator.

The Operator's Authorisation audit has achieved a high level of compliance, which has increased by 1% when compared with 2020.

The Operator's Authorisation audit process identified 21 OFIs in 2020 and 20 OFIs in 2021. Three of the OFIs remain from the 2020 AEPAR. (It is noted there is evidence demonstrating that the two OFIs relating to quarterly data submission and MMP annual reviews (each 31 August) have commenced.)

The comparison between the 2020 and 2021 Operator WDL audit condition numbers and compliance scores are shown in Table 6-2.

Table 6-2: Summary Table for Comparison of 2020 and 2021 Operator WDL Findings

| Operator WDL | 2020 | 2021 |
|--|------|------|
| Total number of conditions and sub-conditions | 200 | 148 |
| Number of active conditions and sub-conditions | 123 | 126 |
| Number of part compliances | 9 | 10 |
| Overall compliance score | 97% | 98% |

The Operator's WDL has achieved a high level of compliance, which has increased by 1% when compared with 2020.

The WDL audit process identified three OFIs in 2020 and eight OFIs in 2021, with the majority being administrative in nature. One of the OFIs (relating to monitoring of flows on the Glyde River) is carried over unactioned from the 2020 AEPAR.

6.3.2 DITT

The comparison between the 2020 and 2021 DITT Authorisation audit condition numbers and compliance scores are shown in Table 6-3. A greater proportion of the DITT Authorisation conditions were not active in the 2021 audit period compared with the 2020 audit period as shown in Table 6-3.

Table 6-3: Summary Table for Comparison of 2020 and 2021 DITT Authorisation Findings

| DITT Authorisation | 2020 | 2021 |
|---|------|------|
| Total number of conditions and sub-conditions* | 203 | 274 |
| Number of active conditions and sub-conditions* | 60 | 61 |
| Number of part compliances* | 5 | 11 |
| Overall compliance score | 97% | 95% |

Note: *Relevant to DITT.

The audit process identified five OFIs in 2020 and five new OFIs in 2021. DITT has attained a high level of compliance with the active Authorisation conditions. The 2% reduction in the 2021 overall compliance score is due to part compliance with minor administrative issues around timing of receipt of submissions related to revised conditions in the 13 Nov 2020 Authorisation.

The total number of 117 NT EPA recommendations was the same between 2020 and 2021 as shown in Table 6-4.

Table 6-4: Summary Table for Comparison of 2020 and 2021 DITT NT EPA Recommendations Findings

| DITT NT EPA Recommendations | 2020 | 2021 |
|---|------|------|
| Total number of recommendations including sub-parts | 117 | 117 |
| Number of relevant recommendations including sub-parts* | 97 | 116 |
| Number of part compliances | 9 | 15 |
| Overall compliance score | 98% | 97% |

Note: * The 2020 number of relevant recommendations considered implementation of the active recommendations while in 2021 the audit considered the number of recommendations requiring incorporation into the Authorisation.

The audit process identified seven OFIs in 2020 and 14 OFIs in 2021. Four of the NT EPA recommendations' part compliances and corresponding OFIs remain in-progress from the 2020 AEPAR.

DITT has attained a high level of compliance at 97% for adopting the intent of the NT EPA recommendations in the wording of the Authorisation conditions, despite a decrease of 1% when compared with 2020.

6.3.3 River System Health

As noted in Section 5, during the current audit period there were restrictions placed on site access due to COVID-19 restrictions. The reduced dataset challenges impacted the direct comparison between the current audit and the 2020 AEPAR. Notwithstanding, findings identified for river system health for the current AEPAR were broadly similar to those of the 2020 AEPAR, with key points as follows:

- Observations of freshwater macroinvertebrate assemblages are consistent with those of the 2020 AEPAR, i.e. macroinvertebrate assemblages riffle sites along the McArthur River diversion channel appear to resemble those in reference sites and edge habitats are becoming more similar over time
- Building on the findings reported in the 2020 AEPAR, the recording of a juvenile sawfish at the upstream extent of the McArthur River diversion channel during the current audit period further supports the assertion that fish passage for this species is not impaired
- With respect to the TARPs relevant to freshwater aquatic ecology monitoring, Level 1 performance was achieved for all categories in the current audit period, whereas for the 2020 AEPAR period Level 1 performance was achieved for all monitoring categories except tissue metal concentration, which was at Level 2 performance
- Consistent with the findings reported in the 2020 AEPAR, the monitoring data collected in the current audit period suggest that efforts to reinstate habitat conditions typical of natural river channels have improved and are likely to continue to improve the aquatic habitat along the McArthur River diversion channel.

7 Status of Opportunities for Improvement

7.1 Operator OFI Status

OFIs for the Operator were identified in the AEPAR for the audit period 01 April 2018 to 30 April 2020, noting the opportunities are not mandatory requirements. These opportunities were identified with respect to:

- Authorisation conditions
- WDL conditions
- Operator commitments.

There were no OFIs in relation to the Operator's compliance with NT EPA recommendations in the 2020 AEPAR and accordingly are not mentioned in the findings below.

The status of the OFIs has been reviewed as part of the 2021 audit. This was undertaken through review of summary information provided by the Operator with reference to the 2020 AEPAR OFIs.

7.1.1 Findings

The status of each of the Operator 2020 AEPAR OFIs is set out in Table 7-1. Of the 27 OFIs that were identified for the Operator:

- 13 have been completed
- 14 are in progress or are ongoing actions.

A review shows that approximately half of all of the Operator OFIs are ongoing or are in-progress.

Table 7-1: Status of Operator Opportunities for Improvement

| OFI Ref. 2020 AEPAR | Operator OFI ⁸ | Document Section / Key Regulatory Activity | Status |
|------------------------|--|---|---------------------------------|
| OFI-20-OP-AUTH-01 | Provide documentation of a review of the MMP on each anniversary (31 August) to demonstrate that the review is considered annually and amended as necessary. (Condition 6) | Mining Management Plan and Reporting | Ongoing |
| OFI-20-OP-AUTH-02 | Submit all quarterly monitoring data inclusive of soil, sediment and internal transfers, to the Department in the required format. (Condition 7.d.e.g.) | Mining Management Plan and Reporting | Complete |
| OFI-20-OP-AUTH-03 | Update procedures for exploration activities to address hazardous material storage and erosion and sediment control. (Condition 11.b) | Exploration | Complete |
| OFI-20-OP-AUTH-04 | Prepare and submit a progressive rehabilitation report as required. (Condition 11.c) | Exploration | Ongoing |
| OFI-20-OP-AUTH-05 | Obtain and document agreement with the Department that the current methodology of alluvial cover is acceptable to recognise waste placement occurs all year round, and to avoid restricting wet season operational activities unnecessarily. # (Condition 17) | Waste Rock Management | Complete (condition removed) |
| OFI-20-OP-AUTH-06 | Improve documentation of ICE supervision during all phases of NOEF construction. (Note: Operator has advised the Independent Monitor that a revised process related to documentation of ICE supervision is now in place. This will be considered during the next audit period.) (Condition 21.a) | Construction of the Central West Northern Overburden Emplacement Facility | In-progress |
| OFI-20-OP-AUTH-07 | Incorporate the existing additional water transfer data and water balance data from water storages not already included or submit a request to the Department to have the requirement reviewed, if appropriate. (Condition 35.g) | Water Management and Storage | Complete |
| OFI-20-OP-AUTH-08 | Create a single master list and inspection schedule of all AMD storages (including at BBLF) to ensure all required inspections are completed and reported and include the master list in the Water Management Plan. (Condition 35.f, 37.a) | Water Management and Storage | Complete |
| OFI-20-OP-AUTH-09 | Prepare an AMD storage structures seepage plan of actions and include this in the Water Management Plan. (Condition 35.g) | Water Management and Storage | In-progress |

⁸ Reference to related Authorisation, WDL condition or commitment is provided where applicable.

| OFI Ref. 2020 AEPAR | Operator OFI ⁸ | Document Section / Key Regulatory Activity | Status |
|------------------------|--|---|--|
| OFI-20-OP-AUTH-10 | Review the dewatering activities and ensure that all bores are metered. (Condition 36) | Water Management and Storage | Complete |
| OFI-20-OP-AUTH-11 | Obtain and document agreement with Department for storage of AMD in any sumps or storages not listed in Condition 37.a and ensure all sumps or storages that store AMD are managed to minimise contaminants entering the receiving environment. # (Condition 37.a) | Water Management and Storage | Complete (refer to OFI-21-OP-Authorisation-12) |
| OFI-20-OP-AUTH-12 | Evaluate the effectiveness of the EMRs as a management tool for the interpretation and reporting of data and results of water transfer or discharge from any water storage structure. (Condition 38,d,viii) | Water Management and Storage | Ongoing |
| OFI-20-OP-AUTH-13 | Implement the Risk Manager's Environmental Obligations Register, which assigns actions and accountabilities. (Note: Operator has advised the Independent Monitor that Environmental Obligations Register is being commissioned in Q2, 2021). (Condition 46.d,56.a) | Tailings Storage Facility | Complete |
| OFI-20-OP-AUTH-14 | Assist the coordination of the ITRB activities and records by the Operator taking responsibility for: <ul style="list-style-type: none"> requesting Department endorsement of meeting frequency preparing meeting schedules, agendas and issuing ITRB meeting minutes retaining evidence of Department endorsement of members (Conditions 47, 48, 49) | Tailings Storage Facility | Ongoing |
| OFI-20-OP-AUTH-15 | Improve ICE reports on future Tailings Storage Facility cell embankment raise work by stating the relevant Authorisation conditions and MMP amendments as design criteria, and that the report is certifying against these listed regulatory requirements. (Condition 52.d) | Tailings Storage Facility | Ongoing |
| OFI-20-OP-AUTH-16 | Prepare and implement a document control or retention procedure/policy. (Condition 62) | Environmental Monitoring | In-progress |
| OFI-20-OP-AUTH-17 | Progress negotiations related to necessary approval requirements with other authorities to enable the construction of the permanent monitoring structures. (Condition 64) | Environmental Monitoring | In-progress |
| OFI-20-OP-AUTH-18 | Submit continuous flow monitoring quarterly in the required template to the Department as required by Condition 7. (Condition 64.c) | Environmental Monitoring | Ongoing |
| OFI-20-OP-AUTH-19 | Optimise use of suitable quality water, potentially target better than class 5 water, for dust suppression in more sensitive locations (e.g. near to waterways). (Condition 69.c) | Environmental Monitoring | Ongoing |

| OFI Ref. 2020 AEPAR | Operator OFI [#] | Document Section / Key Regulatory Activity | Status |
|------------------------|---|---|-------------|
| OFI-20-OP-AUTH-20 | Audit the storage, handling and management of chemicals, toxic substances, gases, dangerous goods and flammable or combustible liquids to demonstrate compliance with Australian Standards and NT legislation. (Condition 70.a) | Environmental Monitoring | Ongoing |
| OFI-20-OP-AUTH-21 | Document the bulk storage tanks maintenance schedule to demonstrate compliance with Australian Standard/s and NT legislation. (Condition 70.b) | Environmental Monitoring | Complete |
| OFI-20-OP-WDL-01 | Consolidate information collected for complaints into one central location by having a single community complaints register, to contain all the required complaint log information listed in 14.1 to 14.10. (WDL 14) | General | Complete |
| OFI-20-OP-WDL-02 | Add a note to the internal Operator Monitoring Schedule for Bing Bong Dredge Spoil Drain to communicate that monitoring frequency is required to be increased to 'weekly' during any future dredging activities. (WDL 25) | Monitoring | Complete |
| OFI-20-OP-WDL-03 | Progress negotiations related to necessary approval requirements with other authorities to enable construction of the permanent monitoring structures, e.g. Glyde River. (WDL 25, 60, 62) | Performance Improvement | In-progress |
| OFI-20-OP-COM-01 | Provide further detail on anticipated timeframes for commitments' actions to demonstrate progress. (Operator Commitment 1) | OFI | Complete |
| OFI-20-OP-COM-02 | Provide further information on 'closed' commitments to confirm that the recommendations were completely addressed or if there are actions still pending. (Operator Commitment 2) | OFI | In-progress |
| OFI-20-OP-COM-03 | Provide additional referencing details to identify the source of each commitment, and to track, update and close out commitments. (Operator Commitment 3) | OFI | Complete |

Note: # The opportunity for improvement is relevant to both the Operator and DITT.

7.2 DITT OFI Status

OFIs for DITT were identified in the AEPAR for the audit period 01 April 2018 to 30 April 2020, noting the opportunities are not mandatory requirements. These opportunities were identified with respect to:

- Authorisation conditions
- NT EPA recommendations
- Performance in regulatory procedures and regulatory approach.

The status of the OFIs has been reviewed as part of the 2021 audit. This was undertaken through review of summary information provided by DITT with reference to the 2020 AEPAR OFIs.

7.2.1 Findings

The status of each DITT 2020 AEPAR OFI is set out in Table 7-2. Of the 27 OFIs that were identified for DITT:

- Seven have been completed
- 15 are in progress or are ongoing actions
- Three are under review by DITT, e.g. to consider need for action or intended approach
- Two are not progressed, i.e. DITT is yet to progress the opportunity.

Review of the status of DITT OFIs shows that over 77% of the opportunities are ongoing, in progress or completed.

Table 7-2: Status of DITT Opportunities for Improvement

| OFI Ref. 2020 AEPAR | Opportunity for Improvement ⁹ | Document Section / Key Regulatory Activity | Status |
|------------------------------------|--|--|--------------------------|
| OFI-20-DE- Authorisation- 01 | Amend the condition to remove the requirement for the Operator to submit water transfer data quarterly given the large amount of data which is provided annually. (Condition 7.g) | Mining Management Plan and Reporting | Under review |
| OFI-20-DE- Authorisation- 02 | Improve the wording of the condition related to the alluvium cover placement being required prior to 01 November each year to recognise waste placement occurs all year round and to avoid restricting wet season operational activities unnecessarily. (Condition 17) | Waste Rock Management | Complete |
| OFI-20-DE- Authorisation- 03 | Confirm details of the meeting frequency of the ITRB. (Condition 48) | Tailings Storage Facility | In progress / ongoing |
| OFI-20-DE- Authorisation- 04 | Confirm that only Electrical Conductivity monitoring is the intent of the condition or specify other parameters required, e.g. pH, flow monitoring, etc. (Condition 64.b) | Environmental Monitoring | Complete |
| OFI-20-DE- Authorisation- 05 | Determine what, if any, environmental assessments and audits of the Operator shall be undertaken by the Department. (Condition 75.a.ii) | Independent Monitoring Assessment Conditions | In progress / ongoing |
| OFI-20-DE- REC-01 | Update Authorisation Condition 118 to clearly reference "... the results of the (ecotoxicological) program shall be used to inform trigger criteria in the AMP". (NT EPA Recommendation 14) | Aquatic Ecosystems | Complete |
| OFI-20-DE- REC-02 | Develop and document a process for including advice on the preparation and implementation of the ecotoxicological program from other agencies, e.g. DEPWS and Commonwealth Department of Agriculture, Water and the Environment. (NT EPA Recommendation 14) | Aquatic Ecosystems | Not progressed |

⁹ Reference to related Authorisation condition or NT EPA Recommendation is provided where applicable.

| OFI Ref. 2020 AEPAR | Opportunity for Improvement ⁹ | Document Section / Key Regulatory Activity | Status |
|------------------------|--|--|-----------------------|
| OFI-20-DE-REC-03 | Develop and document a process for including advice on the preparation and implementation of the aquatic ecosystem monitoring program from other agencies, e.g. DEPWS and Commonwealth Department of Agriculture, Water and the Environment. (NT EPA Recommendation 15.iii) | Aquatic Ecosystems | Not progressed |
| OFI-20-DE-REC-04 | Decide on which website key documents are made available. It will be more efficient to have a single master copy on a website document with links to it from other websites (e.g. Departments, Agencies or Operator). (NT EPA Recommendation 15.iii) | Aquatic Ecosystems | Complete |
| OFI-20-DE-REC-05 | Update future authorisations to include reference to the results of the air quality monitoring plan to be audited by the Independent Monitor every three years or seek agreement in writing between the Department and NT EPA to accept an alternative arrangement. (NT EPA Recommendation 19) | Human Health | Complete |
| OFI-20-DE-REC-06 | Obtain agreement with NT Department of Health that the alternative wording used on waterway signage ('prohibited access') at the mineral lease boundary is acceptable. (NT EPA Recommendation 20.iii) | Human Health | In progress / ongoing |
| OFI-20-DE-REC-07 | Ensure the independently calculated amount and final amount of the security shall be published on the relevant regulator's website, with any variation between the amounts explained. (NT EPA Recommendation 24) | Whole of Environment Considerations | Under review |
| OFI-20-DE-REG-01 | Examine legislation to determine if agreement on a process may allow low risk incidents to be notified and documented in the annual reporting to the Department (i.e. EMR) rather than individually notified under Section 29 procedures. | S29 Incidents | Under review |
| OFI-20-DE-REG-02 | Develop a trend analysis of Section 29 incidents as an indicator of performance of the Mine (improvement or deterioration). | S29 Incidents | In progress / ongoing |
| OFI-20-DE-REG-03 | Include and review of 'TSF Recommendation, Instruction and Action Register' to document satisfactory progress of actions as part of a review procedure for every TSF quarterly report. | Tailings Storage Facility | In progress / ongoing |
| OFI-20-DE-REG-04 | Request a copy of the independent TSF annual audit reports for Department records. | Tailings Storage Facility | Complete |

| OFI Ref. 2020 AEPAR | Opportunity for Improvement ⁹ | Document Section / Key Regulatory Activity | Status |
|------------------------|---|--|-----------------------|
| OFI-20-DE-REG-05 | Seek agreement with the Operator to re-establish the practice of including the 'TSF Recommendations, Instruction and Action Register' in future TSF Quarterly Reports. | Tailings Storage Facility | Complete |
| OFI-20-DE-REG-06 | Train more Department staff in the procedure to upload the quarterly monitoring data received from the Operator. | Quarterly monitoring data requirements | In progress / ongoing |
| OFI-20-DE-REG-07 | Discuss with the Operator the potential opportunities and mechanisms to communicate the trends of monitoring data to the public, e.g. via the Community Reference Group, once it is established. | Environmental Monitoring Report | In progress / ongoing |
| OFI-20-DE-REG-08 | Determine how cumulative data and trend analysis may be obtained, analysed and reported. The EMR has not included a cumulative assessment either across time or for Environmental Aspects. | Environmental Monitoring Report | In progress / ongoing |
| OFI-20-DE-REG-09 | Facilitate an internal Department workshop to examine the annual EMR process, tasks and outputs with view to streamlining the activity. It is prudent to have the EMR but it is worth examining what is sufficient for regulatory requirements and to satisfy community expectations, and how the annual process could be more efficient. | Environmental Monitoring Report | In progress / ongoing |
| OFI-20-DE-REG-10 | Prepare an internal Department procedure for the regulation of the Authorisation conditions and NT EPA recommendations to document the processes, timing, approvals, decisions, public/community communication and record requirements to assist and manage the complex regulatory requirements relating to Department activities. | General | In progress / ongoing |
| OFI-20-DE-REG-11 | Further streamline the documentation and approval process to improve efficiencies and focus on the implementation of initiatives to improve performance. | Regulatory Approach | In progress / ongoing |
| OFI-20-DE-REG-12 | Develop a working agenda/action list for meetings with Operator to capture and track ideas and actions, including delivery timeframes. | Regulatory Approach | In progress / ongoing |
| OFI-20-DE-REG-13 | Increase time on site to verify evidence of progress and outcomes, as well as work with the Operator to resolve issues. | Regulatory Approach | In progress / ongoing |
| OFI-20-DE-REG-14 | Improve communication and collaboration with other government agencies (Commonwealth and NT) to align objectives and actions, streamline processes, and improve environmental outcomes. | Regulatory Approach | In progress / ongoing |

| OFI Ref. 2020 AEPAR | Opportunity for Improvement ⁹ | Document Section / Key Regulatory Activity | Status |
|------------------------|--|--|-----------------------|
| OFI-20-DE-REG-15 | Reduce reliance on key individuals within the Department to ensure consistency and continuity of compliance and performance. | Regulatory Approach | In progress / ongoing |

8 Stakeholder Engagement

8.1 Overarching Scope and Approach

A comprehensive Stakeholder Engagement Plan was prepared to guide community and stakeholder engagement and communications for the Independent Monitor. The Stakeholder Engagement Plan was revised in response to COVID-19 restrictions and updated in 2021. Advisian engaged a subconsultant, CCC, to facilitate community engagement throughout the Independent Monitor process.

The Stakeholder Engagement Plan nominated a phased engagement approach for the Independent Monitor process that aligns with the key Independent Monitor outputs and activities. The Phase 1 initial engagement took place in September 2020 and October 2020 and the Phase 2 engagement for the 2020 APEAR took place in May 2021.

The stakeholder engagement approach and findings are summarised in the following sections.

8.2 Initial Engagement

During initial engagement activities, community interest focused primarily upon four broad issue areas:

- Preference for face-to-face consultations for maintaining ongoing community engagement
- Independent monitor dialogue
- Transparency of information, and provision of clear and simple information by the Independent Monitor with local relevance
- River and fish health.

The stakeholder feedback was used to guide communication content and the stakeholder engagement approach for the engagement on the 2020 AEPAR findings.

8.3 2020 AEPAR Engagement

8.3.1 Scope and Approach

The Independent Monitor engaged with the community in May 2021 to communicate the findings of the 2020 AEPAR. Engagement sessions were held over a two-day period in Borroloola and included face-to-face consultation with community members, where a hard copy of the Annual Report Card (a visual summary report of the full AEPAR) was presented. Further details on the engagement approach are detailed below.

8.3.1.1 *Face-to-Face Consultation*

Feedback from initial engagement indicated that the preferred community engagement method was face-to-face engagement, to allow for community members to ask questions to assist with understanding the findings of the AEPAR.

The Independent Monitor addressed this initial feedback and held face-to-face consultation with community members, both one-on-one and in small group settings. During consultation, CCC

explained the AEPAR findings and provided an opportunity for stakeholders to ask questions in a culturally safe and private setting, allowing stakeholders to confidentially express their opinion and ask questions.

8.3.1.2 *Transparency of Information*

The Annual Report Card was used as a communication tool and provided to community members in Borroloola. The Annual Report Card provided an overview of the key findings of the full AEPAR. This condensed version of the AEPAR had been requested by community members during initial engagement as it had been noted by some community members that the full report was difficult for some people to understand. Presenting the relevant information in a smaller report in plain English and with the visual representation of findings increased accessibility for some community members.

Numerous copies of the Annual Report Card were distributed to community members and at key community congregation points to allow interested local community members access to the AEPAR findings. Additional copies of the Annual Report Card were also left at the MRM's Community Office located in Borroloola.

During engagement, community members were advised that they could be added to the Independent Monitor's stakeholder list if they wished to be directly engaged during future rounds of engagement.

8.3.2 Engagement Limitations

Limitations to stakeholder engagement for communicating the findings of the 2020 AEPAR included community members being unavailable for engagement due to a community Elder illness, or that they resided outside of Borroloola and other personal reasons.

Community members who were not available for the 2020 AEPAR round of community engagement were provided with the contact details of the Independent Monitor consultation team and offered the opportunity to discuss the AEPAR.

8.3.3 2020 AEPAR Engagement Outcomes

Engagement for the 2020 AEPAR focused on:

- General findings of the AEPAR
- Health of the McArthur River, fish and mussels
- Presentation of the Annual Report Card.

General Findings of the AEPAR

Community members were presented with the AEPAR findings and talked through the results. The community members asked few questions regarding the AEPAR findings.

Health of the McArthur River, Fish, and Mussels

During initial engagement, community members communicated that a primary concern was the health of fish in the McArthur River and whether fish were safe to eat, particularly those found in recreational fishing spots frequented by community members.

The AEPAR found that, based on assessments completed, the fish in the McArthur River were safe to eat. Community members were provided with the Annual Report Card and the AEPAR's findings regarding river and fish health, which were further explained during the consultations. No community members mentioned any concerns with the findings relating to the health of the fish during the Independent Monitor consultations.

The AEPAR found that there were elevated levels of metals contained within mussels in the McArthur River, and the types of metals identified are naturally occurring in the region and are not associated with the operations of the Mine. It was expected that this would be a significant discussion point with community members, however during the discussions, there were no further questions related to the metal levels within the mussels.

Presentation of the Annual Report Card

The Annual Report Card provided to community members was a condensed version of the 2020 AEPAR, to allow for easier understanding of the AEPAR results. During consultations, community members provided feedback that the condensed version of the report allowed for increased access to the AEPAR information.

8.3.4 Identified Opportunities for Improvements to Future Engagement

To improve future rounds of engagement, the consultation process could be extended to include surrounding communities and further staged to allow additional time for consideration and discussion of the AEPAR and Annual Report Card.

9 Overall Conclusions

The Independent Monitor has assessed that both the Operator and DITT have achieved a high level of overall compliance with the Authorisation conditions, WDL conditions and with implementation of the NT EPA recommendations. The Operator's level of regulatory compliance has assisted to proactively manage potential environmental risks to enable approved operations while safeguarding environmental values.

The audit period covered 1 May 2020 to 30 April 2021. It is the opinion of the Independent Monitor that during the audit period, the Operator has continued to avoid or minimise potential environmental risks by proactively managing and monitoring environmental issues across a wide range of site activities while maintaining a strategic focus on continuous improvement in environmental performance.

The Operator's high level of compliance with the Authorisation conditions across all key operational activities is a measure of the level of fulfillment of regulatory requirements. The Operator has marginally increased the overall compliance scores by 1% for both the Authorisation and the WDL.

The Operator has a comprehensive Risk Management Plan that contains an appropriate environmental risk management framework and process. The risk process' monitoring and review steps could be strengthened to better demonstrate risk management progress. The Operator has provided examples of actions implemented to manage potential environmental risks, however the anticipated resultant improvement in risk profile is not monitored or reported in the current risk management process.

The review of the DITT's regulatory approach identified some efficiency opportunities around streamlining activities, especially those involving recurring regulatory processes. The review found DITT to have a strong focus on key environmental risks (e.g. high number of conditions on NOEF and TSF) and a practical approach to compliance and monitoring. Furthermore, the Operator's performance and high levels of regulatory compliance can be attributed, at least in part, to the approach adopted by DITT.

A major milestone by DITT during the audit period was the overhaul and rationalisation of the Authorisation conditions to make it a more useable document by removing duplication and consolidation of regulatory requirements. The review found that DITT has effectively incorporated the NT EPA recommendations into the Authorisation conditions. A high level of compliance continued to be attained by DITT, however there was a slight decrease in the overall compliance scores by 2% for the Authorisation and 1% the NT EPA recommendations.

DITT has progressed the CRG terms of reference and the membership expressions of interest for the establishment of the group. The regular site inspections commenced by DITT are beneficial as they allow a physical observation and assessment of the Mine's condition to verify progress against the management plans, monitoring and reporting.

DITT worked with the Operator to revise the annual EMR format to include a holistic assessment of environmental performance utilising a conceptual site model to bring together monitoring data to determine environmental risk.

The review provides a general assessment on overall river system health based on the information provided by the Operator. Consistent with the river system health findings reported in the 2020 AEPAR, the McArthur River and its tributaries overall were considered to be in good health.

Exceedances of metal concentrations were limited to two sites on Barney Creek in areas immediately adjacent to operational areas within the mineral lease boundary, where public access is not permitted and which require ongoing management.

The stakeholder engagement approach to communicating the AEPAR findings included meeting with community members in both one-on-one and in small group settings, and providing stakeholders with a copy of the Annual Report Card, which is a condensed version of the full report to allow for easier reading and understanding.

Each section of the AEPAR describes the findings of the environmental compliance review, identifies opportunities for improvement and provides relevant conclusions. The listed opportunities are considerations aimed at continuous improvement for potentially enhanced environmental compliance, noting these are not mandatory requirements. Noteworthy successes that achieved improved performance beyond regulatory compliance by the Operator or DITT have been identified. The AEPAR did not identify any environmental issues requiring urgent investigation.

During the audit period, a number of Authorisation conditions, WDL conditions and NT EPA recommendations were not applicable as they relate to 'future' requirements triggered by the approval of the OMP, which took effect on 13 November 2020. The compliance performance of the McArthur River Mine against these recently commenced regulatory requirements will be assessed in subsequent AEPARs.

10 Bibliography

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EMR 2020-2021 Appendix B Reconciliation of Commitments and Actions.

EMR 2020-2021 Appendix C 2020-2021 Environmental Monitoring Schedule.

EMR 2020-2021 Appendix D Soil Monitoring Report McArthur River Mine and Bing Bong Loading Facility, May 2020 – April 2021.

EMR 2020-2021 Appendix E Ambient Air Monitoring Report McArthur River Mine and Bing Bong Loading Facility, May 2020 – April 2021.

EMR 2020-2021 Appendix F McArthur River and Barney Creek Revegetation Monitoring 2020

EMR 2020-2021 Appendix G McArthur River Riparian Bird Monitoring, Early Dry Season, May 2020

EMR 2020-2021 Appendix H McArthur River Riparian Bird Monitoring, Late Dry Season, November 2020

EMR 2020-2021 Appendix I McArthur River Purple-crowned Fairy-wren (*Malurus coronatus macgillivrayi*) Translocation Program Progress Report September – November 2020

EMR 2020-2021 Appendix J McArthur River Freshwater Aquatic Macroinvertebrate Assessment 2020

EMR 2020-2021 Appendix K Monitoring of Select Analytes and Lead Isotope Ratios in Fluvial Sediments, Fish, Crustaceans and Molluscs of the McArthur River 2020

EMR 2020-2021 Appendix L Aquatic Fauna Abundance and Diversity of the McArthur River, Northern Territory, Early Dry Season 2020

EMR 2020-2021 Appendix M Report on the Aquatic Fauna of the McArthur River, Northern Territory, Late Dry Season 2020

EMR 2020-2021 Appendix N Acoustic Monitoring of Largetooth Sawfish (*Pristis pristis*) and Barramundi (*Lates calcarifer*) within the McArthur River, Northern Territory, 2020

EMR 2020-2021 Appendix O Annual Seagrass Survey of the Bing Bong Loading Facility, 2020

EMR 2020-2021 Appendix P Annual Marine Monitoring Program of the Bing Bong Loading Facility, November 2020

EMR 2020-2021 Appendix R Surface Water Monitoring Report 2020/21

EMR 2020-2021 Appendix S Environmental Monitoring Report Groundwater 2020/21

EMR 2020-2021 Appendix T 2020 Hydrogeological Drilling and Field Campaign

EMR 2020-2021 Appendix U Concentrations of Select Bioavailable Metals and Lead Isotope Ratios within Ocean Water in the Vicinity of the Bing Bong Loading Facility as Monitored by Diffusive Gradients in Thin Films: 2020 – 2021

EMR 2020-2021 Appendix V Metal and Metalloid Concentrations of Near Shore Sediments of the Bing Bong Loading Facility,

EMR 2020-2021 Appendix W Assessment of Bioavailable Metal Concentrations and Lead Isotope Ratios of Seafloor Sediments in the Bing Bong Loading Facility Transshipment Area, November 2020

MRM undated. Communication Plan Waste Discharge Licence (WDL 174-10)

MRM 2019. MMP Jan 2019 – Appendix A- MMM Amendment Environmental Risk Assessment

MRM 2020. MMP Jan 2020 – Appendix A – MMP Environmental Risk Assessment

MRM 2020. MRM TSF Quarterly Report - March 2020 to May 2020

MRM 2020. MRM TSF Quarterly Report - June 2020 to August 2020

MRM 2021. MRM TSF Quarterly Report - September to November 2020

MRM 2021. MRM TSF Quarterly Report - December 2020 to February 2021

MRM 2020. WDL 174-11 Monitoring Report 1 May 2019 to 30 April 2020

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MRM 2020. Seepage Interception Trench Tailings Storage Facility Domain OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL Manual-Draft (not published on document control as of 24Sep2021) version 1 dated November 2020.

MRM 2020. TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0

MRM 2021. Exploration Management Plan SPC-3100001 May 2021, Version 2.



Appendix A
Authorisation Compliance Workbook -
Operator

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

| | | | | | | | | | | | | |
|---|---|---|-------------|----------------------------|--|--------------------------------------|---------------------------------------|------------------------|-------|------------------|----------|----------|
| Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEFF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|-------------|----------------------------|--|--------------------------------------|---------------------------------------|------------------------|-------|------------------|----------|----------|

| SCHEDULE A | | | | | | | | | | | | | |
|--------------------------------------|---|-------------------------|---|--|--|--|--|--|--|---|-------------------------|--|---|
| Definitions | | | | | | | | | | | | | |
| 1 | 1 | 1 - subsections changed | In this document, unless the contrary intention appears: | | | | | | | | - | Note that sub-conditions 1.a to 1.z are not listed as they are all definitions and are unable to be audited for compliance. | |
| Interpretation | | | | | | | | | | | | | |
| 2 | 2 | 2 - subsections changed | In this document, unless the contrary intention appears: | | | | | | | | - | Note that sub-conditions 2.a to 2.h are not listed as they are all interpretations and are unable to be audited for compliance. | |
| General | | | | | | | | | | | | | |
| 3 | 3 | 3 | Subject to any Conditions contained in the Act and this document,[4] the Operator must comply with the commitments and activities contained in the MMP including the implementation of all systems referred to in the MMP.[5] | | | | | | | 4 | Full Compliance | 2020-2021 Reconciliation of Commitments and Actions Environmental Monitoring Report – Appendix B. Ground Disturbance Permit_FRM-2600196. | Assessed by evaluation of all other conditions. EMR does include coverage of commitments in Appendix B 2020-2021 Reconciliation of Commitments and Actions. |
| 4 | 4 | 4 | The Operator may only conduct mining activities identified in the MMP within the Mine subject to any Conditions contained in the Act, this document and the Conditions commitments and systems contained in the MMP. | | | | | | | 4 | Full Compliance | PRO-2200033 Permit to Clear Procedure and Forms MINING MANAGEMENT PLAN - APPENDIX D January 2020. Sighted Ground Disturbance Permit 10Apr21 to 10May21. EMR 2020 - 2021. | Assessed by evaluation of all other conditions. The Operator advised that PRO-2200033 Permit to Clear Procedure and Forms are followed. The Operator advised that Ground Disturbance Permits to clear obtained within the reporting period are checked against the MMP for consistency. Operational update is provided in the EMR report and the EMR consistently references the January 2020 MMP. The Independent Monitor confirmed that the Permit to Clear requires authorisation from specific authorised positions, which include environmental specialists. The Independent Monitor confirmed that the Permit to Clear includes "Proved [sic] the section or page number of the MMP which contains the description of work to which the clearing permit application relates." and "Once you have obtained the necessary information from the MMP tick this box to verify that the clearing is authorised under the MMP to the best of your knowledge. " The EMR also provides a summary of major operational activities that occurred during the reporting period and the Independent Monitor did not identify any inconsistent with the MMP. |
| | | 5 | The mine site is to be developed and operated in accordance with relevant legislation e.g. Environment Protection and Biodiversity Conservation Act 1999, Northern Territory Aboriginal Sacred Sites Act 1984, Territory Parks and Wildlife Conservation Act 1976 and Heritage Act 2011. | | | | | | | 4 | Full Compliance | PRO-2200033 Permit to Clear Procedure and Forms MINING MANAGEMENT PLAN - APPENDIX D January 2020 Sighted Ground Disturbance Permit 10/4/21 to 10/5/21. EMR 2020 - 2021 Cultural Heritage Management Stakeholder Engagement Report 14Feb2021. EMR 2020 - 2021 Appendix I - Purple-crowned Fairy-wren Translocation Report. EMR 2020 -2021 states in section 1.3 "Reporting in this EMR covers the period of 1 May 2020 to 30 April 2021 [...]. The Mine operated in accordance with VOA 0059 dated 15 August 2019, 10 August 2020, and 13 November 2020, and the following approval documents over the reporting period: • EPBC Act Approval 2014/7210 (dated 12 June 2019), and subsequent variation (dated 18 December 2020). • EPBC Act Approval 2003/954 (dated 20 February 2009). • Waste Discharge Licence (WDL) 174-11 (dated 28 April 2019)." EMR 2020 - 2021 executive summary states "The Mine and BBLF operate in accordance with Variation of Authorisation 0059 and the January 2020 Mining Management Plan (MMP) and its approved amendments." | MMPs take the various legislation into account so operating in accordance with the MMP (checks via clearing permits) covered the legislation. OMP was referred under the EPBC Act and approved June 2019. The independent Monitor confirmed that the Permit to Clear includes "Proved [sic] the section or page number of the MMP which contains the description of work to which the clearing permit application relates." and "Once you have obtained the necessary information from the MMP tick this box to verify that the clearing is authorised under the MMP to the best of your knowledge. " The EMR 2020 - 2021 includes the outcome of the monitoring programs that are undertaken over the audit period and supports commitments to the mine being in accordance with relevant legislation. |
| Mining management plan and reporting | | | | | | | | | | | | | |
| 6 | 6 | 6 | The Operator must on 31 August 2021 and on each anniversary of that date (or such other date as nominated by the Operator and approved by the Minister), review the approved MMP and if necessary, amend the MMP. [6] | | | | | | | 3 | Part Compliance (High) | EMR 2019-2020, 31Aug20 EMR 2020-2021, 31Aug21. Section 2.3.2 Waste Characterisation and Identification of EMR 2019-2020 (dated 31Aug2020) states compliance with the MMP. The Operator advised "MRM submitted the January 2020 MMP to DITT on 31 January 2020, which was approved on 13 November 2020. As the January 2020 MMP covered approximately four year of operations, there was little benefit in completing an annual review on 31 August as per Condition 6." Although outside the audit period, the Executive Summary of the EMR August 2021 says "In consideration of the results presented in this EMR, the MMP has been reviewed and it was determined that no updates are currently required in order for MRM's key environmental management objectives to continue to be achieved." There was no evidence for review of the approved MMP on 31 August 2020, which was the relevant date in the audit period. | While the due date of 31Aug21 is after the audit period, previous Authorisations that were relevant in the audit period had this condition requiring the review on 31Aug annually. Operator advised that as part of the Ground Disturbance Permit checks the MMP is reviewed. As part of annual budget review informal review of MMP and budget allows for any MMP amendments. OBS: The EMR 2020 - 2021 includes the text that the approved MMP has been reviewed. However, a reference to review of the approved MMP was not included in the EMR 2019 - 2020. OFI: Continue to review the approved MMP annually on 31 August and include a reference to that in the EMR. If the EMR is not submitted on 31 August, the Operator should correspond with the Minister confirming the annual review of the approved MMP has occurred. |
| 7 | 7 | 7 | The Operator must submit quarterly all environmental monitoring data [7] which has been collected since the previous data submission. The data submission must be provided in the approved form (being an MS Excel template that can be provided on request) and include laboratory and field data for the following: | | | | | | | | Refer to sub conditions | | |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEFF)
Waste (general, mine rock, tailings)
Community (local Indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEFF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|-----------------------|---|---|---|-------------|----------------------------|--|--------------------------------------|---------------------------------------|------------------------|-------|------------------|---|--|
| 7.a | 7.a | 7.a | surface water; | | 1 | | | 1 | | | | 1 | 4 | Full Compliance | <p>Email submission Operator to DITT (MRM DPIR Data Q1 2020)</p> <p>Email submission Operator to DITT (MRM DPIR Data Q2 2020)</p> <p>Email submission Operator to DITT (MRM DITT Data Q3 2020)</p> <p>Email submission Operator to DITT (2102002 MRM Environmental Monitoring Data Q4 2020)</p> <p>Email submission Operator to DITT (MRM Quarterly Data - Q1 2021)</p> <p>Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020)</p> <p>Email receipt DITT to Operator (DITT Receipt of Data Q3 2020)</p> <p>Email receipt DITT to Operator Re: MRM Quarterly Data - Q1 2021</p> <p>2004 - 2006 DPIR Data</p> <p>2007 - 2009 DPIR Data</p> <p>2010 - 2012 DPIR Data</p> <p>2101 - 2103 DITT Data</p> <p>Email from MRM to DITT 10/11/2020 "No sampling could be completed during Q3 2020 at off-site surface water monitoring locations SW08, SW27, SW28 and SW32 due to COVID-19 travel restrictions."</p> <p>Email from MRM to DITT 10/11/2020 "Total metals, cations, and anions were not reported for a number of sampling events in late July / early August 2020 owing to laboratory issues during that period."</p> <p>Email submission MRM to DITT (MRM DPIR Data Q2 2020) Continuous EC data has been provided from the 2019/2020 wet season. Continuous EC data is not available for SW04, SW12, and SW10 due to equipment failures during the wet season.</p> | OBS: In the 2007 - 2009 DPIR Data spreadsheet a number of dust depositional gauge sampling locations have the sample matrix as water when it should be dust. |
| 7.b | 7.b | 7.b | groundwater; | | | | 1 | | | | | 1 | 4 | Full Compliance | <p>Email submission Operator to DITT (MRM DPIR Data Q1 2020).</p> <p>Email submission Operator to DITT (MRM DPIR Data Q2 2020).</p> <p>Email submission Operator to DITT (MRM DITT Data Q3 2020).</p> <p>Email submission Operator to DITT (2102002 MRM Environmental Monitoring Data Q4 2020).</p> <p>Email submission Operator to DITT (MRM Quarterly Data - Q1 2021).</p> <p>Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020).</p> <p>Email receipt DITT to Operator (DITT Receipt of Data Q3 2020).</p> <p>2004 - 2006 DPIR Data.</p> <p>2007 - 2009 DPIR Data.</p> <p>2010 - 2012 DPIR Data.</p> <p>2101 - 2103 DITT Data.</p> <p>Level measurement data tab for 2010 - 2012 DPIR Data showed groundwater results and groundwater bores are also included in the analysis data - filtered tab.</p> | |
| 7.c | 7.c | 7.c | dust | 1 | | | | | | | | 1 | 4 | Full Compliance | <p>Email submission Operator to DITT (MRM DPIR Data Q1 2020).</p> <p>Email submission Operator to DITT (MRM DPIR Data Q2 2020).</p> <p>Email submission Operator to DITT (MRM DITT Data Q3 2020).</p> <p>Email submission Operator to DITT (2102002 MRM Environmental Monitoring Data Q4 2020).</p> <p>Email submission Operator to DITT (MRM Quarterly Data - Q1 2021).</p> <p>Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020).</p> <p>Email receipt DITT to Operator (DITT Receipt of Data Q3 2020).</p> <p>2004 - 2006 DPIR Data.</p> <p>2007 - 2009 DPIR Data.</p> <p>2010 - 2012 DPIR Data.</p> <p>2101 - 2103 DITT Data.</p> <p>2010 - 2012 DPIR Data Dust monitoring for BBDDG8.</p> <p>Spot checks for comparisons between the monitoring undertaken and reported in these submissions were undertaken and no January data for DDG27 or DDG47 and HVAS01 added weekly from 19Feb21 in 2101 - 2103 DPIR is consistent with the EMR 2020 - 2021 Appendix E - Ambient Air Monitoring Report May 2020 – April 2021. Duplicates and blanks are included.</p> | OBS: In the 2007 - 2009 DPIR Data spreadsheet a number of dust depositional gauge sampling locations have the sample matrix as water when it should be dust. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
Waste (general, mine rock, tailings)
Community (local Indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|------------------------|---|---|
| 7.d | 7.d | 7.d | soil; | | | | | | | | | 1 | 3 | Part Compliance (High) | Sighted email of Q1 submission noting that soils and sediment are only sampled annually and will following in Q2 submission. Email submission Operator to DITT (MRM DPIR Data Q1 2020). Email submission Operator to DITT (MRM DPIR Data Q2 2020). Bing Bong Dredge Spoil Saline Impact Assessment 2020 Rev 0. EMR 2020 - 2021 Appendix D - Soil Monitoring Report May 2020 – April 2021. Soils sampling occurred in the audit period and did not appear to be submitted in any quarterly submissions. The Operator advised DITT "Sediment and soil sampling occurs once per annum and is scheduled to occur in the coming weeks. MRM will provide this data to the Department in the next quarterly submission." However, the soil data do not appear to be submitted in the Q2 data submission. Bing Bong Dredge Spoil Saline Impact Assessment 2020 Rev 0 included soils samples from 23rd and 24th of May 2020 that do not appear to be submitted. This sampling is required by the WDL every three years as part of the Bing Bong Vegetation Monitoring and was in the monitoring schedule included in the Water Management Plan and in the EMR. EMR 2020 - 2021 Appendix D - Soil Monitoring Report May 2020 – April 2021 states "Soil samples collected in October 2020 were analysed and a summary of the long-term data records is also presented to identify any trends in the short and long term data." | EMR 2020 - 2021 Table 34 states "The Soil Monitoring Program will be discontinued. Soil sampling will be undertaken on a case-by-case basis." OFI: Submit all quarterly monitoring data inclusive of soil sampling to the Department in the required format. |
| 7.e | 7.e | 7.e | sediments; | | 1 | 1 | | 1 | | | | 1 | 3 | Part Compliance (High) | Sighted email of Q1 submission noting that soils and sediment are only sampled annually and will follow in Q2 submission. Email submission Operator to DITT (MRM DPIR Data Q1 2020). Email submission Operator to DITT (MRM DPIR Data Q2 2020). Email submission Operator to DITT (MRM DITT Data Q2). An improvement has occurred in that sediment samples for May 2021 have been submitted (outside the audit period). However, there is no evidence of sediment samples being submitted in the audit period. | Sediment samples are collected on an annual basis, and results are submitted to the DITT once per year. The Operator advised the DITT "Sediment and soil sampling occurs once per annum and is scheduled to occur in the coming weeks. MRM will provide this data to the DITT in the next quarterly submission." No OFI has been included as the requirement to include annual sediment results in the relevant quarterly data submissions has been addressed since quarter two in 2021. |
| 7.f | 7.f | 7.f | gas; and | 1 | | | | | | | | 1 | 4 | Full Compliance | Email submission Operator to DITT (MRM DPIR Data Q1 2020). Email submission Operator to DITT (MRM DPIR Data Q2 2020). Email submission Operator to DITT (MRM DITT Data Q3 2020). Email submission Operator to DITT (2102002 MRM Environmental Monitoring Data Q4 2020). Email submission Operator to DITT (MRM Quarterly Data - Q1 2021). Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020). Email receipt DITT to Operator (DITT Receipt of Data Q3 2020). 2004 - 2006 DPIR Data. 2007 - 2009 DPIR Data. 2010 - 2012 DPIR Data. 2101 - 2103 DITT Data. Two SO2 monitoring locations were included in each of the four submissions. There is no June data submitted. The DITT was advised via email submission Operator to DITT (MRM DPIR Data Q2 2020) "Due to equipment faults experienced with SO2VAN01, data is not available from 13 May – 18 May 2020. SO2Village equipment was sent off-site for maintenance during May 2020, SO2Village was offline for part of Q2 2020. SO2Village equipment is expected to be back online during Q3 2020." The EMR 2020-2021 "The SO2Village monitor was offline from 15 March 2020 to 23 July 2020, due to an instrument fault followed by the equipment being taken offline for calibration." | |
| 7.g | 7.g | 7.g | water transfers and discharges (including dates, times and volumes).[8] | | 1 | | | | | | | 1 | 3 | Part Compliance (High) | Email submission Operator to DITT (MRM Quarterly Data - Q1 2021) Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020) Email receipt DITT to Operator (DITT Receipt of Data Q3 2020) 2101 - 2103 DITT Data The recommendation in the 2020 AEPAR for the Operator to submit water transfer data quarterly has been implemented in the submission of the last quarter of the audit period. However, the condition is only considered a part compliance due to the data not being transferred for the first three quarters. Water discharge is included in the spreadsheets where discharges occurred (2010 - 2012 DPIR Data and 2101 - 2103 DITT Data). Provision of water discharge data is compliant. | No OFI has been included as the requirement to include water transfers in the quarterly data submissions has been addressed since quarter one in 2021. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
Waste (general, mine rock, tailings)
Community (local Indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | | | | |
|--------------------------|-------------------|--|--|--|--|--|--|--|--|---|-----|-------------------------|--|--|--|
| | 8 | From the date of authorisation of the Overburden Management Project, the Operator must provide an "as built" construction report, for the structures that the approved MMP specifies require "as built" construction reports, at the completion of each structure approved as per the MMP, within 30 days upon construction being finalised. | | | | | | | | 1 | N/A | Not Applicable | The Operator advised "Jan 2020 MMP Appendix G 'NOEF Management Plan' section 10.1 outlines the requirements of the NOEF design and as-built reporting. Specifically: "At the completion of the works, an as-built report will be produced that compiles all the relevant proof that the construction was as per design, or where differences were present, how they were managed and why the design objectives will still be met by the final works. The as-built reports are also required by the Authorisation." This section does not include a specific list of structures that require an as-built report, however the requirement is related to the specific NOEF LOM Stages. These are listed in Section 4.2.3.3 of the Jan 2020 MMP, and include: - West - Central West - North West - North East - Central East - South East - Mine Infrastructure Area (not for waste rock emplacement). Note that as none of these stages have been completed, there is no requirement for an as-constructed report to be provided to the Department." | Future item. Advised by the Operator that no stages of NOEF were completed in the audit period and are not expected to be completed for years to come (including installation of the approved cover system) therefore no as-constructed reports are available. In the interim, ICE sign off sheets provided. MMP states when an "as built" construction report is required. | |
| | 9 | The Operator must submit on or before 31 August 2021 and on each anniversary of that date (or such other date as nominated by the Operator and approved by the Minister), an EMR for the previous year in the reporting period as agreed with the Department. | | | | | | | | 1 | 4 | Full Compliance | Sighted email from Operator to Regulator of EMR 2019-2020 submitted 31 August 2021. | EMR for 2020-2021 was submitted 31 August 2021. | |
| Security and levy | | | | | | | | | | | | | | | |
| | 10 - previously 8 | The Operator must provide to the Minister a security of \$400,003,226 in the form of cash or an unconditional bank guarantee prior to undertaking any mining activities authorised by this Variation of Authorisations 0059-01 and 0059-02. [9] | | | | | | | | | 4 | Full Compliance | Letter from DPIR to Operator dated 10Aug20 Re: Variation of Authorisation 0059 and Mining Management Plan Approval (10Aug2020_Security Reassessment). Letter from DPIR to Operator dated 15Aug19 Re: Variation of Authorisation 0059-01 and 0059-02 and Security Request (15Aug2019_Security.) Letter DITT to Operator subject Re: Variation of Authorisation 0059, Unplanned Closure Plan Approval and Security Request dated 18Jun2021. The previous Authorisations required the following: 15Aug2019: \$519,728,466 and 10Aug2020: \$519,669,461. Letter from DPIR to Operator dated 15Aug19 stated "In accordance with Condition 8 of the Schedule, the security for the McArthur River Mine has been reviewed in relation to activities proposed in the January 2019 Amendment, and I advise that an additional security of \$33,045,183 is required. Due to the staged approvals provided for this MMP Amendment, DPIR currently holds \$33,045,183 in credit. This credit will be claimed as part of meeting the security requirements of the MMA, equating to total security held for the McArthur River Mine at \$519,728,466. As such no further security is required and you may commence activities approved under the MMP amendment." The Independent Monitor confirms this as compliance. Letter from DPIR to Operator dated 10Aug20 stated "In accordance with condition 8 of the schedule the security for McArthur River Mine has been reassessed and it has been determined that the security amount required to be held against the project has reduced by \$59,005." The Independent Monitor confirms this as compliance. | Letter DITT to Operator dated 18Jun2021, while outside the audit period, states "As such, you are required to either: (a) provide the additional security amount of \$5,113,442; or (b) provide a replacement bank guarantee for the total amount of \$405,116,668." This is sufficient to support that the security had been in place. | |
| | 11 | The security provided for under Condition 10 will be reassessed, and may be revised, following the submission, assessment and approval of an: | | | | | | | | | | Refer to sub conditions | | | |
| | 11.a | independent third party assessment of the security by a qualified person approved by the Minister (also refer Condition 40); | | | | | | | | | 4 | Full Compliance | Letter from Operator to DITT dated 3Feb2020 RE: INDEPENDENT THIRD-PARTY ASSESSMENT OF MCARTHUR RIVER MINE SECURITY (outside the audit period) Letter from DITT to Operator 11Feb2020 Re: Independent Third-party Assessment of McArthur River Mine Security (outside the audit period) Email from Operator to DITT dated 10Jul20 MRM Security - Independent Third-Party Assessment (20200710 MRM-DPIR Security - Independent Third-Party Assessment) Enclosure 4 - Phronis Independent Security Audit Report 2021 Email from DITT to Operator dated 10Jul20 MRM Security - Independent Third-Party Assessment (20200710 DPIR receipt - MRM Security - Independent Third-Party Assessment). | The letter from DITT to Operator 11Feb2020 Re: Independent Third-party Assessment of McArthur River Mine Security shows that the independent third party was approved by DITT before the audit period. Email from Operator to DITT dated 10Jul20 MRM Security - Independent Third-Party Assessment stating "In summary, Phronis Consulting concludes that "The Audit indicates the MRM Security Calculation to be in alignment with the Unplanned Closure Plan, the Quantities and Costs per UOM to be reasonable and the total estimated cost of \$444,448,029.29 to be sound". Independent Monitor confirms this is in the Phronis Independent Security Audit Report 2021. The email from the DITT to the Operator dated 10Aug20 stated "DPIR acknowledges receipt of documents in relation to the independent third-party assessment of the MRM security." The 13Nov20 Authorisation revised the security as included in condition 10. | |
| | 11.b | amended MMP; | | | | | | | | | 4 | Full Compliance | No MMP amendments were submitted in the audit period. However January 2020 MMP was approved as Authorisation 0059 13Nov20. | | |
| | 11.c | amendment to the Unplanned Closure Plan. | | | | | | | | | 4 | Full Compliance | Email from Operator to DITT dated 16Apr21 MRM 2021 Unplanned Closure Plan and Independent Security Assessment. Enclosure 1 - MRM Unplanned Closure Plan 2021_FINAL_April. Enclosure 2 - MRM Security Calculation_2021_210416_Final. Enclosure 4 - Phronis Independent Security Audit Report 2021. | Unplanned Closure Plan submitted annually to the DITT by the Operator with revised security included. Independent Monitor confirmed email evidence of submission via email 16Apr21 stated "In accordance with Condition 11 of Variation of Authorisation 0059, dated 13 November 2020, please find the attached cover letter requesting a revision to McArthur River Mining Pty Ltd's (MRM) security held by the DITT of Industry, Tourism and Trade (DITT)". Although outside the audit period, the increase in security is included in a new Authorisation version issued after the end of the audit period. | |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|--|---|
| | | 12 | The revised security amount to be provided under Condition 10 is to be provided prior to creating the new disturbance, covered under the revised security as per written notification from the Department. For the avoidance of doubt, the Operator must provide the revised security amount in the form of cash or an unconditional bank guarantee to the Minister. | | | | | | | | | | N/A | Not Applicable | | As the security only decreased in the audit period, this condition is not applicable. |
| | | 13 - previously 10 | Each financial year, upon receipt of a written notice by the Minister as to the levy payable for that financial year, the Operator must pay a levy to the Mining Remediation Fund of an amount calculated in accordance with the Act and as stated by the Minister in the notice. [10] | | | | | | | | | | 4 | Full Compliance | Invoice reminder notice dated 21Sep20 with due date 30Sep20 Amount: \$5,197,283.00 Transaction Receipt - Processing date: 26/10/2020 Total amount: \$5,197,283.00. Internal Operator email to obtain the levy and evidence of payment (RE MRM levy payments). Processing date: 26Oct20 Total amount: \$5,197,283.00. Independent Monitor confirmed evidence of written notice of levy to be paid of \$5,197,283.00 due on 30Sep20 and remittance for the same amount on 26Oct20. | OBS: Correct Mining Remediation Fund levy amount was paid, however it was paid after the due date stated on the levy notice. |
| Overburden Management Project | | | | | | | | | | | | | | | | |
| | | 113 | From the date of this approval, new areas of the NOEF foundation development (i.e. areas at base level) that do not currently contain PAF wastes must include an engineered low permeability liner of 0.5m thickness and maximum saturated hydraulic conductivity of 1 x 10-9 metres per second above which future PAF wastes are to be stored. | | | | | | | 1 | | | 4 | Full Compliance | Letter from ICE to Operator dated 23Apr20 subject NOEF Central East Foundation Investigation - ICE Review. EMR 2020 - 2021. Figures showing survey data on 21Nov20 and from 28Nov20. ICE Review of NOEF Central East Foundation Investigation 23 April 2020 is from before the audit period but "The report describes investigations that have been carried out by MRM to further assess the hydraulic properties of the foundation below existing developed areas of NOEF Central East". The report also states "The report findings are endorsed and GHD considers that the investigation provides sufficient evidence that the existing stockpile foundation meets the design intent and satisfies (and likely exceeds) the minimum 0.5 m thick, minimum 1x10-9 m/s CCL specification". Section 2.5.2 of the EMR states "The CE stage was constructed as per the OMP EIS methodology and consistent with the approved MMP, including the development of: • a minimum 0.5 m thick low permeability liner with a maximum saturated hydraulic conductivity of 1 x 10-9 metres per second" and "The testing showed that 100% of the CCL lots constructed were in conformance with the required permeability specification and zero failures were observed". Table 8 of the EMR 2020-2021 NOEF Central East Stage Compacted Clay Liner Testing has the minimum required number of tests for permeability was 17 and that 17 were conducted. | This condition is only relevant from 20Aug2020 until 13Nov2020. Note: very similar to condition 20 of 13Nov20 Authorisation however, only relevant to until the 13Nov20 Authorisation commenced. Foundation works was only completed in the NOEF Central East (CE) stage in the relevant part of the audit period (i.e., before 13Nov20). This is supported by the EMR 2020-2021. Construction of the CE Stage foundation was undertaken between 1 April and 12 November 2020. The Operator advised "Survey data as at the 14th November 2020 shows that non-benign material was being placed in NE Alpha during the period 1 April - 12 Nov2020, however only on areas with an engineered low permeability liner. Weekly survey data from the 21st November still shows only tipping on top of the engineered low permeability liner, while survey from the 28th November, shows tipping from areas of the engineered liner over in-situ foundation clays. The survey data has been provided, as well as an interpretation." |
| | | Explanatory note: | The following conditions were introduced in the previous variation, dated 15 August 2019 to reflect the intent of the thirty recommendations made by the NT EPA in the making of their Assessment Report 86 published July 2018. The NT EPA articulated an overarching environmental objective to be achieved during operation of the Mine: to ensure the health of McArthur River is protected along its whole length at all times from mine related impacts. The Minister accepted the recommendations as overarching conditions for the life of the project and have been retained to achieve transparency. | | | | | | | | | | | | | Explanatory note and therefore not audited. |
| | | 14 - previously 107 | The Operator must ensure activities related to the McArthur River Overburden Management Project are implemented in accordance with: | | | | | | | | | | | Refer to sub conditions | | |
| | | 14.a | all environmental commitments and safeguards identified in the final Environmental Impact Statement for the McArthur River Mine Overburden Management Project (draft Environmental Impact Statement, Supplement to the draft Environmental Impact Statement and additional information); | | | | | | | | | | 3 | Part Compliance (High) | 2020-2021 Reconciliation of Commitments and Actions Environmental Monitoring Report – Appendix B. In total 230 commitments are identified in the EMR. Of these, 161 commitments appear to be ongoing (i.e., relating to ongoing committed activity at the Mine), six commitments appear to be complete (i.e., no further action required), and 63 commitments appear to be not currently relevant (e.g., commitments relating to specific actions during closure stage). Of the 161 ongoing commitments, the 2020/2021 EMR update provided by the Operator indicates that nine commitments may be incompletely addressed. These relate to the following activities : •Geochemical investigations have not been undertaken for the WOE and BBLF •Groundwater quality monitoring has not been undertaken adjacent to Djirrinmini waterhole; however, proposed groundwater quality monitoring has been included in the draft 2021/2022 monitoring schedule •While a gauging station was installed on the Glyde River it is not operational due to several site-specific challenges and there have been delays to installation of a gauging station at an alternate site •The Fire Management Plan requires update to address management of specific fauna as described in the OMP EIS, noting this update is planned for 2022 •Vegetation trials on the southern levee wall were not undertaken due to delays in approval of the MMP; however, trials are now intended to be completed on the NOEF in late 2021 •A Gouldian Finch Monitoring Program is yet to be developed •Dust management measures are yet to be added to site inductions to brief employees and contractors on air quality management requirements. •The Operator intends to continue to operate internal corporate Health Safety Environment and Community Audits for the Mine rather than internal and external audits. | 2020-2021 Reconciliation of Commitments and Actions Environmental Monitoring Report – Appendix B includes the OMP EIS Commitment Description, Jan 2020 MMP Update and 2020/21 EMR Update. Source documents for the commitments of OMP Supplementary EIS and OMP Draft EIS are included. Although the EMR is prepared after the audit period, the detail included is evidence for this condition. It is notable that the reporting against commitments in the 2020-2021 EMR has improved on previous years, with the inclusion of information regarding the source of the commitment, applicable project phase, timeline and frequency providing enhanced detail for the commitments in comparison with information previously provided. OFIs are not included here as they are provided in the Commitments - Operator Review section in the AEPAR. |
| | | 14.b | recommendations in the NT EPA Assessment Report 86 where they are approved under an MMP; | | | | | | | | | | N/A | Not Applicable | NT EPA recommendations workbook The NT EPA recommendations audit of DITT identified that the majority of the NT EPA recommendations have been transferred directly and all of the recommendations, to varying extents, are included in Conditions of the Authorisation. | Given the NT EPA recommendations audit of the Department identified that all NT EPA recommendations are included as conditions in the Authorisation, audit of this condition is covered under other relevant Authorisation conditions. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEFF)
Waste (general, mine rock, tailings)
Community (local Indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEFF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|---|---|---|-------------|----------------------------|--|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|----------|---|
| | | 14.c | if there is any inconsistency between the above documents, the most recent authorisation shall prevail to the extent of any inconsistency. | | | | | | | | | | N/A | Not Applicable | | The Independent Monitor is not aware of any inconsistency. |
| | | 15 - previously 108 | The Operator must provide written notice to the Minister and NT EPA if it alters or proposes to alter the McArthur River Mine Overburden Management Project and/or commitments, safeguards or mitigation measures in the Environmental Impact Statement in such a manner that the environmental significance of the action may have changed, in accordance with clause 14A of the Environmental Assessment Administrative Procedures 1984. | | | | | | | | | | N/A | Not Applicable | | Operator advised none have occurred. |
| | | 16 - previously 109 | Within 18 months of the date of authorisation of the Overburden Management Project, unless otherwise agreed in writing by the Department, the Operator must submit a plan to the Department for review, that: | | | | | | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020 |
| | | 16.a | Enables measurement of total loads of lead and zinc and is consistent with requirements of Condition 27; | | 1 | | | 1 | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020 |
| | | 16.b | Quantifies and ensures annual loads of lead and zinc discharged to the McArthur River in future years (July to June) do not exceed the loads discharged in 2017-2018 (as per Condition 68(e)) taking into account seasonal variations in rainfall, and subject to future annual load calculations; | | 1 | | | 1 | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020 |
| | | 16.c | addresses recommendations and outcomes arising from audits of loads by the Independent Monitor; | | 1 | | | 1 | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020 |
| | | 16.d | include sufficient detail to inform the development of monitoring and management measures (including but not limited to early warning alerts and intervention levels), as part of the site wide AMP (Condition 45); | | 1 | | | 1 | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020 |
| | | 16.e | once approved by the Department, be implemented by the Operator by the Operator. | | | | | | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020 |
| | | 17 - previously 110, there are changes | Within 18 months date of authorisation of authorisation of the Overburden Management Project, the Operator must: | | | | | | | | | | | Refer to sub conditions | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.a | submit a plan to the Department for review, that shall include: | | 1 | | | 1 | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.a.i | site-specific trigger values determined in accordance with Australian and New Zealand Guidelines for Fresh and Marine Water Quality, 2018 framework, incorporating ANZECC (2000) guidelines, at appropriate monitoring locations, in accordance with Condition 27; | | 1 | | | 1 | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.a.ii | a commitment that creeks on the mine site to show long-term improving trends in water quality within 20 years after cessation of mining; | | 1 | | | 1 | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.a.iii | methodology to calculate contaminant loads and contaminant concentrations entering creeks and the McArthur River using system modelling that must: | | 1 | | | 1 | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.a.iii.a | use suitable site-specific data collected as part of Condition 26; | | 1 | | | 1 | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.a.iii.b | be subject to review by the relevant independent panel; | | 1 | | | 1 | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.a.iii.c | detail specific assumptions to be tested including but are not limited to: | | 1 | | | 1 | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.a.iii.c.i | groundwater flow paths; | | | | | 1 | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.a.iii.c.ii | attenuation of metals from mine-derived wastes; | | 1 | | | 1 | | 1 | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.b | once approved by the Department, implement the plan; | | 1 | | | 1 | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.c | incorporate the relevant findings from the plan into the AMP. | | 1 | | | 1 | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 18 - previously included in 111 | The Operator must provide a written response to the Department, if an independent technical panel's, required under Condition 21, review of the models and modelling outputs, and the data collection programs that informed the model development at Condition 17(a)(iii) address recommendations for improvements. All relevant outputs must be used to inform and update the AMP. | | 1 | | | 1 | | | | | N/A | Not Applicable | | Future item. Panels do not exist yet. In the process of assisting the DITT with setting up the panels as of July 2021. |
| | | 19 - previously 112, changed | Every three (3) years from the date of authorisation of the Overburden Management Project, an independent environmental audit of the Quality Assurance (QA) and Quality Control (QC) procedures and waste rock identification and handling performance must be undertaken and: | | | | | | | 1 | | | N/A | Not Applicable | | Future item. Only 3 years from 13Nov2020. |
| | | 19.a | the results of the audit be provided within six (6) weeks to the Department and to the relevant independent panel; | | | | | | | 1 | | | N/A | Not Applicable | | Future item. Only 3 years from 13Nov2020. |
| | | 19.b | the Operator must provide a written response to the satisfaction of the Department where findings from the audit and review by the relevant panel includes matters that need to be addressed or areas for improvement. | | | | | | | 1 | | | N/A | Not Applicable | | Future item. Only 3 years from 13Nov2020. |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
 Surface Water (River, Creek, Artificial dams)
 Marine Waters (Bing Bong, marine sediments)
 Groundwater
 Aquatic fauna (fish river)
 Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
 Waste (general, mine rock, tailings)
 Community (local Indigenous & public)
 Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|------------------|--|---|
| | | 20 - previously 113 for OMP, 25.a.ii for CENOE, changed | From date of authorisation of the Overburden Management Project, new areas of the NOEF foundation development (i.e. areas at base level) that do not currently contain PAF wastes must include a low permeability liner of 0.5m thickness and maximum saturated hydraulic conductivity of 1 x 10-9 metres per second above which future PAF, NAF and benign materials are to be stored. | | | | | | | 1 | | | 4 | Full Compliance | MRM Inspection and Test Plan (ITP) Week 14 Apr. 11 – Apr. 17, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNHC Week 15). MRM Inspection and Test Plan (ITP) Week 16 Apr. 16 – Apr. 24, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNHC Week 16). Letter from ICE to Operator dated 23Apr20 subject NOEF Central East Foundation Investigation - ICE Review. EMR 2020-2021. ICE NOEF Construction Progress Report May 2020 dated July 2020. ICE Peer Review of NOEF Monthly Construction Progress Reports (September 2020 dated December 2020, January 2021 dated August 2021, February 2021 dated September 2021, March 2021 dated October 2021, April 2021 dated November 2021). MRM Inspection and Test Plans (ITPs) (ITP_CEB1_B001_MSNHC Week 15 and ITP_CEB1_B001_MSNHC Week 16) include reference to NOEF Design and Construction Guidelines but do not look to specify "low permeability liner of 0.5m thickness and maximum saturated hydraulic conductivity of 1 x 10-9 metres per second". Section 2.5.2 of the EMR states "The CE stage was constructed as per the OMP EIS methodology and consistent with the approved MMP, including the development of: • a minimum 0.5 m thick low permeability liner with a maximum saturated hydraulic conductivity of 1 x 10-9 metres per second" and "The testing showed that 100% of the CCL lots constructed were in conformance with the required permeability specification and zero failures were observed". Table 8 of the EMR 2020-2021 NOEF Central East Stage Compacted Clay Liner Testing has the minimum required number of tests for permeability was 17 and that 17 were conducted. NOEF Construction Progress Report May 2020 section 2.3.1 "The Central East Alpha and Bravo Stage expansion will feature a sloping low permeability foundation, designed to enhance the movement of infiltration through the NOEF, to seepage extraction points, on the eastern perimeter" | The Operator advised "During the audit period, foundation works was only completed in the NOEF Central East (CE) stage." This is supported by the EMR 2020-2021. Independent Certifying Engineer (ICE) Review of NOEF Central East Foundation Investigation 23 April 2020 is from before the audit period but "The report describes investigations that have been carried out by MRM to further assess the hydraulic properties of the foundation below existing developed areas of NOEF Central East". The report also states "The report findings are endorsed and GHD considers that the investigation provides sufficient evidence that the existing stockpile foundation meets the design intent and satisfies (and likely exceeds) the minimum 0.5 m thick, minimum 1x10-9 m/s CCL specification". While related to the CCL layer along Cell 2A's northern batter toe, the following from ICE Peer Review of NOEF Monthly Construction Progress Reports April 2021 is indicative of the ICE ensuring low permeability of the liners, "2021_NCR_CEB_02 was issued on 23 April for Lot 2A. The CCL layer was too thin along Cell 2A's northern batter toe, in some places it was found to be as low as 300 mm. MRM requested to leave the layer, as the CCL layer is likely to have a lower permeability that 1 x 10-9 m/s, with historical results indicating a likely permeability in the range of one or two orders of magnitude lower than the Specification. Additionally, beneath the CCL through the batter toe area exists 1 – 2 m of in-situ clay, with historical permeability testing of in-situ clays saw 100% with permeability lower than the requisite 1 x 10-9 m/s." OBS: Consider including permeability acceptance criteria in the ITPs and Peer Review of NOEF Monthly Construction Progress Reports. |
| | | 21 - previously 114 | The Operator must provide funding and assist the Department to establish and operate an independent panel(s) of experts to advise on matters affecting the environmental performance of the NOEF, TSF and mine closure planning. | | | | | | | 1 | | | 4 | Full Compliance | Sighted submission of Terms of Reference to DITT for review dated 6 July 2021 (outside audit period). Email Operator to DAWE - MRM Independent Panels - Terms of Reference (DAWE) 6Jul21 Email Operator to DITT - MRM Independent Panels - Terms of Reference (DITT) 6Jul21 | Operator advised that during the audit period there was no request from the DITT for funding or assistance. Operator submitted Terms of Reference to the DITT. |
| | | 22 - previously 115 | Within 12 months of date of authorisation of the Overburden Management Project, the Operator must submit a report to the Department for review, detailing the results of relevant studies undertaken to inform the requirements for implementation (including timelines) of a NOEF groundwater seepage interception and recovery system that: | | | | 1 | | | | | | N/A | Not Applicable | | Future item. Twelve months from 13Nov2020. |
| | | 22.a | controls seepage to the Barney Creek diversion channel and the McArthur River; | | 1 | | 1 | 1 | | | | | 1 | N/A | Not Applicable | Future item. Twelve months from 13Nov2020. |
| | | 22.b | achieves a recovering trend in the Barney Creek diversion channel and the old McArthur River channel (at SW06) water quality within 20 years of cessation of mining; | | 1 | | 1 | 1 | | | | | 1 | N/A | Not Applicable | Future item. Twelve months from 13Nov2020. |
| | | 22.c | facilitates achieving requirements of Conditions 16 and 17. | | 1 | | 1 | 1 | | | | | 1 | N/A | Not Applicable | Future item. Twelve months from 13Nov2020. |
| | | 23 | Within 24 months of date of authorisation of the Overburden Management Project, the Operator must submit a NOEF geosynthetic liner cover system plan to the Department for review. The plan must: | | | | | | | 1 | | | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. 2.5 Overburden Emplacement. 2.5.1 Emplacement Areas. The following activities were undertaken during the reporting period: • NOEF West stage: Continued construction of the MS-NAF Halo and advection barriers on the top and southwest faces; conducted the Geosynthetic Liner Constructability Trial on the western face. | |
| | | 23.a | outline a process (including timelines) to test and evaluate (i.e. criteria) the constructability and effectiveness of geosynthetic liner cover options including a geosynthetic liner /compacted clay layer combination; | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| | | 23.b | include implementation of trials on rehabilitated stages of the NOEF; | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| | | 23.c | identify relevant performance parameters must be monitored, including but not limited to: | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| | | 23.c.i | slope stability during extreme events; | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| | | 23.c.ii | cover performance as a result of heat effects; | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| | | 23.c.iii | tolerance of the geosynthetic liner to expected differential settlement; | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| | | 23.c.iv | veracity of cover longevity predictions; | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| | | 23.c.v | likely long-term maintenance requirements. | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| | | 23.d | Include reporting of trial results and monitoring outcomes: | | | | | | | 1 | | | 1 | N/A | Refer to sub conditions | Future item. Twenty-four months from 13Nov2020. |
| | | 23.d.i | within three years from the submission of the plan; | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| | | 23.d.ii | every three years thereafter, to the relevant independent panel and the Community Reference Group for review, and shall be audited by the Independent Monitor. The Operator must provide a written response to the Department, if review from the relevant panels and Community Reference Group require matters to be addressed; | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| | | 23.d.iii | must be used to inform the AMP and closure planning for the mine. | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| | | 23.e | The NOEF geosynthetic liner cover system plan, once approved by the Department, must be implemented by the Operator. | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. The plan has not been submitted to the DITT so is not approved. |

Authorisation Compliance Workbook - Operator

15 Aug 2019 10 Aug 2020 13 Nov 2020
 Authorisation Authorisation Authorisation
 Condition No. Condition No. Condition No.

| Condition/Requirement | | | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments | |
|-----------------------|------------------------------|--|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|------------------|-------------------------|--|---|
| | 24 - previously 117, changed | Within five (5) years of the date of authorisation of the Overburden Management Project, the Operator must submit a strategy to the Department that details the long-term disposal management of tailings into the mine pit void, submerged under a suitable depth of pit water. The plan must: | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Five years from 13Nov2020. | |
| | 24.a | include strategies on the tailings reprocessing and assessment of residual chemical contaminants that may likely impact on meeting the requirements of Condition 16; | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Five years from 13Nov2020. | |
| | 24.b | be reviewed by the relevant independent panel. | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Five years from 13Nov2020. | |
| | 25 | Once approved by the Department, the strategy developed in accordance with Condition 24 must be used to develop a plan five (5) years prior to cessation of mining, for approval by the Department. Any requirement to vary the approved disposal strategy or plan must be: | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Condition triggered by condition 24, which is not until required until five years from 13Nov2020. | |
| | 25.a | applied for in writing to the Minister; | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Condition triggered by condition 24, which is not until required until five years from 13Nov2020. | |
| | 25.b | based on leading practice and site conditions; | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Condition triggered by condition 24, which is not until required until five years from 13Nov2020. | |
| | 25.c | supported by the relevant independent panel; | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Condition triggered by condition 24, which is not until required until five years from 13Nov2020. | |
| | 25.d | notified to the NT EPA in accordance with Condition 15. | | | | | | | 1 | | | 1 | N/A | Not Applicable | Future item. Condition triggered by condition 24, which is not until required until five years from 13Nov2020. | |
| | 26 - previously 118, changed | Within 12 months of date of authorisation of the Overburden Management Project, the Operator must review and synthesise all available and relevant information to submit a revised water monitoring plan (surface water and groundwater) to the Department for review, ensuring the plan is capable of identifying and quantifying impacts of mining activities on the environmental values and beneficial uses of the McArthur River. | | 1 | | | 1 | | | | | | N/A | Not Applicable | Future item. Within 12 months from 13Nov2020. Resubmitted a Water Management Plan to DITT on 23 June 2021 that addressed some of these conditions. This revision is required as part of WDL and was issued to DITT for information. | |
| | 27 - previously 118, changed | The plan required under Condition 26 must: | | | | | | | | | | | | Refer to sub conditions | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. | |
| | 27.a | allow for assessment of compliance with Condition 16 and include sufficient detail to inform/develop/update the AMP; | | 1 | | | 1 | | | | | | | Refer to sub conditions | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. | |
| | 27.b | at a minimum: | | | | | | | | | | | | Refer to sub conditions | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. | |
| | 27.b.i | quantify loads of lead and zinc entering the McArthur River each year; | | 1 | | | 1 | | | | | | | Refer to sub conditions | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. | |
| | 27.b.ii | quantify impacts to water quality and trends in groundwater to determine that objectives and targets are being met, including the effectiveness of source control to reduce loads to as low as is reasonably practicable; | | | | 1 | | | | | | | | Refer to sub conditions | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. | |
| | 27.b.iii | develop appropriate future trigger values for waterways on the mine site and the McArthur River in accordance with the ANZECC Guidelines. In the interim, the trigger values in the most current WDL shall be used; | | 1 | | | 1 | | | | | | | Refer to sub conditions | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. | |
| | 27.c | be prepared in consultation with the NT EPA; | | 1 | | | 1 | | | | | | | Refer to sub conditions | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. | |
| | 27.d | be prepared in consultation with the relevant independent panel; | | 1 | | | 1 | | | | | | | Refer to sub conditions | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. | |
| | 27.e | once approved by the Department, be implemented by the Operator; | | 1 | | | 1 | | | | | | | Refer to sub conditions | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. | |
| | 27.f | be subject to consultation with the relevant independent panel in the event that the plans requires updating (e.g.to maintain the currency of the monitoring network); | | 1 | | | 1 | | | | | | | Refer to sub conditions | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. | |
| | 27.g | ensure results of the program: | | | | | | | | | | | | Refer to sub conditions | | |
| | 27.g.i | are reported annually to the Department; | | 1 | | | 1 | | | | | | | Refer to sub conditions | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. | |
| | 27.g.ii | are audited by the Independent Monitor every three years; | | 1 | | | 1 | | | | | | | Refer to sub conditions | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. | |
| | 27.g.iii | be published on the Operator's website. | | 1 | | | 1 | | | | | | | Refer to sub conditions | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. | |
| | 28 - previously 119, changed | Within 18 months of date of authorisation of the Overburden Management Project, the Operator must submit a research and investigation program to the Department for review that establishes the concentration of mine-derived contaminants at which chronic and acute impacts to biota of relevance to the McArthur River system occur using recognised and accepted eco-toxicological testing, and: | | 1 | | | 1 | | | | | | | N/A | Not Applicable | Future item. 18 months from 13Nov2020. Will use the Ecotox results to feed into this requirement. |
| | 28.a | the results of this program must be integrated with other relevant programs monitoring programs and management plans; | | 1 | | | 1 | | | | | | | N/A | Not Applicable | Future item. 18 months from 13Nov2020. Will use the Ecotox results to feed into this requirement. |
| | 28.b | the plan once approved by the Department must be implemented by the Operator. | | 1 | | | 1 | | | | | | | N/A | Not Applicable | Future item. 18 months from 13Nov2020. Will use the Ecotox results to feed into this requirement. |
| | 29 - previously 120, changed | Within 18 months of date of authorisation of the Overburden Management Project, the Operator must submit an aquatic ecosystem monitoring program to the Department for review that provides improved understanding of aquatic ecosystems in the McArthur River from changing water flows, levels and quality, including available dry season habitat. The program must: | | 1 | | | 1 | | | | | | | N/A | Not Applicable | Future item. Within 18 months from 13 Nov2020. Aquatic report issued to Commonwealth June 2021 and will be used as a basis for this condition. |
| | 29.a | assess impacts of the mine on water levels in refuge pools/waterholes, upstream and downstream of the mine, including in the McArthur River diversion channel; | | 1 | | | 1 | | | | | | | N/A | Not Applicable | Future item. Within 18 months from 13 Nov2020. Aquatic report issued to Commonwealth June 2021 and will be used as a basis for this condition. |
| | 29.b | assess impacts of the mine on water quality in refuge pools/waterholes in the dry season; | | 1 | | | 1 | | | | | | | N/A | Not Applicable | Future item. Within 18 months from 13 Nov2020. Aquatic report issued to Commonwealth June 2021 and will be used as a basis for this condition. |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
 Surface Water (River, Creek, Artificial dams)
 Marine Waters (Bing Bong, marine sediments)
 Groundwater
 Aquatic fauna (fish river)
 Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
 Waste (general, mine rock, tailings)
 Community (local Indigenous & public)
 Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | |
|--|------------------------------|--|---|---|--|--|--|---|-----|----------------|--|---|
| | 29.c | assess impacts of the mine on the health of aquatic biota in the McArthur River using non-lethal sampling methods; | | 1 | | | | 1 | N/A | Not Applicable | Future item. Within 18 months from 13 Nov2020. | |
| | 29.d | be designed to be integrated with requirements of the AMP consistent with Condition 45; | | 1 | | | | 1 | N/A | Not Applicable | Future item. Within 18 months from 13 Nov2020. | |
| | 29.e | once approved by the Department, be implemented by the Operator. | | 1 | | | | 1 | N/A | Not Applicable | Future item. Has not been submitted to the DITT for approval so has not been approved. | |
| | 30 - previously 121 | At all times, the Operator must conduct works consistent with the Northern Territory Aboriginal Sacred Sites Act 1989 and valid AAPA certificate. All conditions of the AAPA certificate must be complied with (including but not limited to NOEF height restrictions), and evidence produced to demonstrate compliance, when requested by the Minister. | | | | | | 1 | 1 | 4 | Full Compliance | PRO-2200033 Permit to Clear Procedure and Forms MINING MANAGEMENT PLAN - APPENDIX D January 2020. Sighted Ground Disturbance Permit 10/4/21 to 10/5/21. EMR 2020-2021. MRM NOEF Compliance - Compliance report highlighting the construction height restrictions of the NOEF in relation to the Barramundi Dreaming. Sighted map of different access areas showing blue AAPA certificate exists for works. Orange and red areas not approved. Ground disturbance permit reviews activity against AAPA certificates. Requires community team sign off. Sighted the section that included an APPA certificate number. AAPA certificate includes GIS layer. Community team are responsible for AAPA certificate signoff. All loaders, etc are GPS capable and can see where to work within the bounds. Ground Disturbance permit includes a sign off for completion. Surveyors measure the height of the NOEF to ensure it is not above the height of Barramundi Dreaming annually (MRM NOEF Compliance - Compliance report highlighting the construction height restrictions of the NOEF in relation to the Barramundi Dreaming). MRM NOEF Compliance - Compliance report highlighting the construction height restrictions of the NOEF in relation to the Barramundi Dreaming states "Maximum RL of NOEF is 112.5541m, which is 3,501 below RL max of Barramundi Dreaming (116.0551m). Measurements were taken on 24/04/2021 using high precision GPS methods." EMR Executive Summary says "Several sacred sites, designated by the Aboriginal Areas Protection Authority (AAPA), under the Northern Territory Aboriginal Sacred Sites Act 1989, have been registered and recorded around the Mine. Seven sacred sites have been identified by the AAPA as being potentially groundwater-dependent. The seven sacred sites have been reviewed for potential groundwater impact over the reporting period. MRM and external expert review have concluded that no sacred sites were impacted by mine influenced drawdown or mine-derived seepage over the reporting period. Ongoing monitoring and evaluation are in place." EMR 2020-2021 section 2.5.2 "No disturbance has occurred in the area of the MRM4 Cultural Site. The MRM4 Cultural Site has an exclusion fence constructed around it, ranging from approximately 5 m to 85 m offset from the actual site,". |
| | 31 - previously 122 | The Operator must not disturb or encroach within 5m of archaeological site MRM4, until a design of the NOEF is agreed in writing by the Department. Consultation between the Operator and Minister for Arts, Culture and Heritage must be undertaken prior to seeking endorsement of the design. | | | | | | 1 | 1 | 4 | Full Compliance | EMR 2020-2021. The Operator advised that ground disturbance permit checks are undertaken against MRM4. EMR 2020-2021 shows where the NOEF has been developed (and therefore that it is not near MRM4) and Plate 2 "MRM4 Area Fence and Signage" shows the Cultural Heritage Site MRM4 site that says Do not Enter and Plates 3 and 4 show that the MRM4 Area is not disturbed. Section 2.5.2 of the EMR 2020 - 2021 states "No disturbance has occurred in the area of the MRM4 Cultural Site. The MRM4 Cultural Site has an exclusion fence constructed around it, ranging from approximately 5 m to 85 m offset from the actual site, with appropriate signage as per Plate 2." |
| | 32 - previously 123 | Within six months of date of authorisation of the Overburden Management Project, the Operator must provide a report to the Minister, and AAPA or the Minister for Arts, Culture and Heritage (where relevant) that demonstrates the consultation process undertaken or provide a plan to the Minister that details consultation activities and timeliness to identify and engage with appropriate custodians and traditional owners with an interest in land that would be or maybe affected by the Overburden Management Project. | | | | | | 1 | 1 | N/A | Not Applicable | Cultural Heritage Management Stakeholder Engagement Report 14Feb2021. Future item. Not required until 6 months from 13Nov2020, which is outside the audit period. |
| | 33 - previously 124, changed | Within 12 months of date of authorisation of the Overburden Management Project, the Operator must develop or revise and submit to the Department for review an existing air quality plan that monitors sulfur dioxide emissions at an appropriate location between the NOEF and sensitive receptors determined in consultation with NT EPA. | 1 | | | | | 1 | 1 | N/A | Not Applicable | Email Operator to DITT dated 20Feb20 subject MRM Air Quality Management Plan - January 2020 MMP submission. Email NT EPA to Operator dated 17Jul20 RE Proposed sulphur dioxide monitoring location (Recommendation 19). Letter NT EPA to Operator dated 17Jul20 Re: Proposed sulfur dioxide monitoring location (Recommendation 19 of Assessment Report 86). Future item. Within 12 months from 13 Nov2020. Email from Operator to DITT dated 20Feb20. "Please note, in accordance with our Variation of Authorisation Condition 123, MRM will engage with the NT EPA to ensure that the revised location of the SO2 monitor is appropriate for assessing potential impacts to sensitive receptors. Confirmation and evidence of consultation will be provided to DPIR once agreement with the NT EPA has been reached, on or prior to the date outlined in Condition 123." Note condition 33 of the 13Nov20 version of the authorisation was condition 123 in the 15Aug20 version of the authorisation. Letter NT EPA to Operator dated 17Jul20 Re: Proposed sulfur dioxide monitoring location (Recommendation 19 of Assessment Report 86) advises that "In conclusion, I consider that the proposed monitoring location appears to be consistent with the nature and intent of Recommendation 19 of Assessment Report 86, provided that it meets the requirements of AS/NZS 3580.1.1:2016: Methods for sampling and analysis of ambient air – Part 1.1: Guide to siting air monitoring equipment and other relevant Australian Standards. Monitoring of sulfur dioxide concentration must be undertaken in accordance with AS/NZS 3580.4.1-2008." Condition 33 does not require approval from DITT, only submission. OBS: In order to remove ambiguity around compliance, the Operator may consider requesting DITT confirm that the AQMP meets conditions 33 and 34 of the Authorisation. OBS: In order to remove ambiguity around compliance, the Operator may consider requesting DITT confirm that the AQMP meets conditions 33 and 34 of the Authorisation. |
| | 34 - previously 124, changed | The air quality monitoring plan required under Condition 33 must include: | | | | | | | | | Refer to sub conditions | OBS: In order to remove ambiguity around compliance, the Operator may consider requesting DITT confirm that the AQMP meets conditions 33 and 34 of the Authorisation. |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

| | | | | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEFF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments | |
|--|--|------------------------------|--|---|---|---|-------------|----------------------------|--|--------------------------------------|---------------------------------------|------------------------|-------|------------------|----------|-------------------------|---|
| | | 34.a | objectives, locations, frequency of monitoring, trigger values and reporting commitments to manage and protect any potential air quality risk to human health outside of the mineral lease; | | | | | | | | | | 1 | 1 | N/A | Not Applicable | Email Operator to DITT dated 20Feb20 subject MRM Air Quality Management Plan - January 2020 MMP submission. Air Quality Management Plan 31 January 2020, AQMP Rev.0. Future item. Plan in condition 33 not required until 12 months from 13 Nov2020. The Independent Monitor confirms objectives in section 1.6, locations on Figure 4 and frequency is discussed in sections 4.1, 4.2 and 4.3. Section 1.2 of the AQMP states this AQMP excludes: "Operational Trigger Action Response Plans (TARPs). This detail can be found in the Adaptive Management Plan (MRM, 2020a)." The AQMP does not include trigger values or reporting requirements, other than stating who is responsible for external reporting in section 1.4 and section 4.1 related to Sulphur Dioxide Monitoring stating "Validated raw data is provided to the NT DPIR each quarter. Analysis is undertaken and reported annually." and section 4.2 related to depositional dust monitoring and section 4.3 related to high volume air sampler monitoring state "Analysis of monitoring data will be undertaken and reported annually, [...]" |
| | | 34.b | evidence of consultation with the NT EPA to be provided at the time of the plan submission; | | | | | | | | | | 1 | 1 | N/A | Not Applicable | Email Operator to DITT dated 20Feb20 subject MRM Air Quality Management Plan - January 2020 MMP submission. Email NT EPA to Operator dated 17Jul20 RE Proposed sulphur dioxide monitoring location (Recommendation 19). Letter NT EPA to Operator dated 17Jul20 Re: Proposed sulfur dioxide monitoring location (Recommendation 19 of Assessment Report 86). Future item. Plan in condition 33 not required until 12 months from 13 Nov2020. Evidence that the Operator proposed to undertake consultation with the NT EPA was provided in the plan at the time of submission. The Independent Monitor has seen evidence of consultation subsequent to submission of the plan and is aware that the Department has received the letter NT EPA to Operator dated 17Jul20 Re: Proposed sulfur dioxide monitoring location. |
| | | 34.c | once approved by the Department, be implemented by the Operator. | | | | | | | | | | 1 | 1 | N/A | Not Applicable | Future item. Plan in condition 33 not required until 12 months from 13 Nov2020. However, implementation of the AQMP is assessed under Schedule D condition 6.c. |
| | | 35 - previously 124, changed | The results of the air quality plan for each reporting frequency must be: | | | | | | | | | | | | | Refer to sub conditions | |
| | | 35.a | made available on the Operator's website. Initial monitoring results to be reported within 6 months of the plan being accepted by the Department or an alternative timeframe as agreed in writing with the Department; | | | | | | | | | | 1 | 1 | N/A | Not Applicable | Sighted real time data on Operator's website 21Sep21. Future item outside of the audit period. Due on 13May21. DITT advised "The air quality plan in question is the one submitted as part of the MMP on January 2020, and included in the AMP, and approved by Minister Manison on 13 November 2020". Real time data is available to the public online (October 2021). |
| | | 35.b | incorporated where relevant in the AMP. | | | | | | | | | | 1 | 1 | N/A | Not Applicable | EMR 2020 - 2021 Appendix E Ambient Air Monitoring Report May 2020 – April 2021 Future item. The reporting frequency is the audit period so incorporation of results of the audit period into the AMP falls outside the audit period. There is also no timeframe specified for incorporation into the AMP. DITT advised "The air quality plan in question is the one submitted as part of the MMP on January 2020, and included in the AMP, and approved by Minister Manison on 13 November 2020". |
| | | 36 - previously 125, changed | Within 24 months of date of authorisation of the Overburden Management Project, the Operator must submit a monitoring and management plan to the Department for review that manages risks of metal toxicity from human consumption of aquatic fauna obtained from the McArthur River. The plan must: | | 1 | | | 1 | | | | | 1 | 1 | N/A | Not Applicable | Future item. Within 24 months from 13 Nov2020. |
| | | 36.a | determine if aquatic fauna obtained from any reach of the McArthur River, that may be impacted by the mine's operations, is safe to eat; | | 1 | | | 1 | | | | | 1 | 1 | N/A | Not Applicable | Future item. Within 24 months from 13 Nov2020. |
| | | 36.b | include demonstrated evidence of consultation with NT EPA; | | 1 | | | 1 | | | | | 1 | 1 | N/A | Not Applicable | Future item. Within 24 months from 13 Nov2020. |
| | | 36.c | detail public reporting of the monitoring results, including at appropriate locations in the Borrooloola region; | | 1 | | | 1 | | | | | 1 | 1 | N/A | Not Applicable | Future item. Within 24 months from 13 Nov2020. |
| | | 36.d | include provisions for implementation and maintenance of signage at waterways at the MRM site in accordance with the requirements of Condition 62 until the risk of contamination from consumption of this aquatic fauna is demonstrated to be acceptable by the Department; | | 1 | | | 1 | | | | | 1 | 1 | N/A | Not Applicable | Future item. Within 24 months from 13 Nov2020. |
| | | 36.e | once approved by the Department, be implemented by the Operator. | | 1 | | | 1 | | | | | 1 | 1 | N/A | Not Applicable | Future item as the report is not approved by the DITT. |
| | | 37 - previously 126, changed | Within 24 months of date of authorisation of the Overburden Management Project, the Operator must submit a plan to the Department for review that outlines monitoring program for management of Largemouth Sawfish. The plan must: | | | | | | | | | | | | N/A | Not Applicable | Future item. Within 24 months from 13 Nov2020. |
| | | 37.a | include a sampling strategy for Largemouth Sawfish that is non-lethal; | | | | | 1 | | | | | 1 | 1 | N/A | Not Applicable | Future item. Within 24 months from 13 Nov2020. |
| | | 37.b | include details of parameters and criteria, from which the results could be used to define specific (measurable and time-bound) performance indicators to abate a significant decline in Largemouth Sawfish movement; | | | | | 1 | | | | | 1 | 1 | N/A | Not Applicable | Future item. Within 24 months from 13 Nov2020. |
| | | 37.c | include trigger levels for investigation and implementation of management measures; | | | | | 1 | | | | | 1 | 1 | N/A | Not Applicable | Future item. Within 24 months from 13 Nov2020. |
| | | 37.d | once approved by the Department, be implemented by the Operator. | | | | | 1 | | | | | 1 | 1 | N/A | Not Applicable | Future item as the report is not approved by the DITT. |
| | | 38 - previously 127, changed | Within six months following the establishment of the required panels and groups in accordance with Condition 21, the Operator must: | | | | | | | | | | | | | Refer to sub conditions | Future item. Panels and groups not set up. |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments | |
|---|---|---|--|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|------------------|-------------------------|--|---|
| | | 38.a | develop environmental objectives for a Care and Maintenance Plan in consultation with the relevant Independent Panels, CRG, custodians and traditional owners; | | | | | | | | | 1 | 1 | N/A | Not Applicable | Future item. Panels and groups not set up. | |
| | | 38.b | submit this to the Department for review. | | | | | | | | | | 1 | N/A | Not Applicable | Future item. Panels and groups not set up. | |
| | | 39 - previously 127, changed | Within five years of date of authorisation of the Overburden Management Project, the environmental objectives arising from Condition 38 must be used to develop a Care and Maintenance Plan in consultation with the Department. | | | | | 1 | | | | | 1 | N/A | Not Applicable | Future item. Within five years from 13 Nov2020. | |
| | | 40 - previously 128, changed | The Operator must facilitate an independent third-party assessment of the security for rehabilitation of disturbances resulting from authorised activities in the approved MMP that is consistent with requirements under Conditions 10, 11 and 12, to the satisfaction of the Department, and every 3 years thereafter if the security has been re-calculated or adjusted. | | | | | | | | | | | 4 | Full Compliance | Email from Operator to DITT dated 10Jul20 MRM Security - Independent Third-Party Assessment (20200710 MRM-DPIR Security - Independent Third-Party Assessment). Enclosure 4 - Phronis Independent Security Audit Report 2021. Email from DITT to Operator dated 10Jul20 MRM Security - Independent Third-Party Assessment (20200710 DPIR receipt - MRM Security - Independent Third-Party Assessment). Internal memo dated 18 June 2021 Re: Vary Authorisation 0059 McArthur River Mining Pty Ltd - McArthur River Mine (outside audit period but assessment of the plan that was submitted in the audit period). | Email from Operator to DPIR dated 10Jul20 MRM Security - Independent Third-Party Assessment stating "In summary, Phronis Consulting concludes that "The Audit indicates the MRM Security Calculation to be in alignment with the Unplanned Closure Plan, the Quantities and Costs per UOM to be reasonable and the total estimated cost of \$444,448,029.29 to be sound". Independent Monitor confirms this is in the Phronis Independent Security Audit Report 2021. The email from DPIR to the Operator dated 10Aug20 stated "DPIR acknowledges receipt of documents in relation to the independent third-party assessment of the MRM security." |
| | | 41 - previously 128, changed | The Operator, consistent with Condition 40, must: | | | | | | | | | | | | Refer to sub conditions | | |
| | | 41.a | commission a qualified person to review the security amount whose appointment is accepted by the Minister; | | | | | | | | | | 1 | 4 | Full Compliance | Letter from Operator to Department dated 3Feb2020 RE: INDEPENDENT THIRD-PARTY ASSESSMENT OF MCARTHUR RIVER MINE SECURITY (outside the audit period) Letter from Department to Operator 11Feb2020 Re: Independent Third-party Assessment of McArthur River Mine Security (outside the audit period) | Letter dated 11Feb2020 from the DPIR approved the independent third-party auditor. |
| | | 41.b | ensure that the security is reviewed and delivered to the Department within six months of acceptance of the qualified person. | | | | | | | | | | 1 | 4 | Full Compliance | Email from DITT to Operator dated 10Jul20 DPIR receipt - MRM Security - Independent Third-Party Assessment. Email from Operator to DITT dated 10Jul20 MRM-DPIR Security - Independent Third-Party Assessment. Email Operator to DITT subject MRM 2021 Unplanned Closure Plan and Independent Security Assessment dated 16Apr2021 Enclosure 1 - MRM Unplanned Closure Plan 2021_FINAL_April Enclosure 2 - MRM Security Calculation_2021_210416_Final Enclosure 4 - Phronis Independent Security Audit Report 2021 DITT acknowledged receipt of the independent third-party review of the security amount on 10Jul20, which is within six months of the acceptance of the qualified person on 11Feb20. The 16Apr2021 submission of the security included a third party review that was not required by a condition of the Authorisation and therefore there is no compliance issue associated with it not being undertaken within six months of acceptance of the qualified person. | |
| | | 42 - previously 129, changed | For every approved MMP and MMP amendment, the Operator must provide a revised copy of the approved document that removes commercially sensitive information, includes an overview and environmental section, and is suitable for publication on the Department's website, or provide written approval to make the complete documents publicly accessible. | | | | | | | | | 1 | 1 | 4 | Full Compliance | Email from Operator to Department dated 7Jul20 Re MRM - 2020 Mining Management Plan - Public Version. Email from Operator to Department dated 24Jun20 Re MRM 2020 Mining Management Plan - Public Version. | Independent Monitor confirmed that the January 2020 MMP with commercially sensitive information removed is on the Department's website (checked 22Sep21). Emails provided between Operator and Department show that the January 2020 MMP including an overview and environmental section, with commercially sensitive information removed, was provided to the Department. |
| | | 43 - previously 130 | The Operator must assist, as required, the Department to establish and operate a Community Reference Group (CRG). | | | | | | | | 1 | | | 4 | Full Compliance | Email from Operator to Department dated 31Mar20 Re MRM Community Reference Group - Establishment and Terms of Reference. | The email stated "As discussed at our previous Technical Working Group meeting please find attached for your consideration a draft process for the establishment of the MRM Community Reference Group (CRG) required by NT EPA Recommendation 26 and VOA Condition 129. The attached includes a draft terms of reference for use by DPIR and the CRG, which has been based on the NSW Community Consultative Committee Guideline and with consideration of the ICMM's Handling and Resolving Local-level Concerns and Grievances." |
| | | 44 - previously 131 | Within 18 months of date of authorisation of the Overburden Management Project, the Operator must undertake a synthesis of all environmental monitoring programs (Condition 26) that assess impacts of mining activities on the environmental values and beneficial uses of the McArthur River, in accordance with NT EPA's overarching environmental outcome. The revised monitoring programs must: | | 1 | | | 1 | | | | | | N/A | Not Applicable | Future item. Within 18 months from 13 Nov2020. | |
| | | 44.a | use outputs generated for review and synthesis of water monitoring programs, as part of addressing Condition 26; | | 1 | | | 1 | | | | | 1 | N/A | Not Applicable | Future item. Within 18 months from 13 Nov2020. | |
| | | 44.b | demonstrate how all monitoring data collected under various monitoring programs and management plans were considered and synthesised (e.g. conceptual site models, trend analysis); | | 1 | | | 1 | | | | | 1 | N/A | Not Applicable | Future item. Within 18 months from 13 Nov2020. | |
| | | 44.c | be incorporated in the AMP. | | 1 | | | 1 | | | | | 1 | N/A | Not Applicable | Future item. Within 18 months from 13 Nov2020. | |
| | | 45 - previously 132, changed | Within 18 months of date of authorisation of the Overburden Management Project, the Operator must submit an AMP to the Department: | | | | | | | | | | | N/A | Not Applicable | Future item. Within 18 months from 13 Nov2020. | |
| | | 45.a | The AMP must include the following key elements: | | | | | | | | | | | | Refer to sub conditions | AMP submitted to DEPWS March 2021 and provided to DITT out of courtesy. | |
| | | 45.a.i | clear, measurable environmental objectives for all significant environmental risks and potential impacts; | | | | | | | | | | 1 | N/A | Not Applicable | Future item. Within 18 months from 13 Nov2020. | |
| | | 45.a.ii | measurable performance indicators to show that objectives are on target to be met; | | | | | | | | | | 1 | N/A | Not Applicable | Future item. Within 18 months from 13 Nov2020. | |
| | | 45.a.iii | pre-determined triggers to warn of potential for performance indicators to be exceeded, as informed by monitoring; | | | | | | | | | | 1 | N/A | Not Applicable | Future item. Within 18 months from 13 Nov2020. | |
| | | 45.a.iv | realistic and achievable contingency interventions to maintain performance indicators if triggers are consistently exceeded; | | | | | | | | | | 1 | N/A | Not Applicable | Future item. Within 18 months from 13 Nov2020. | |
| | | 45.a.v | clearly defined management measures/actions that are capable of being implemented in a timely way to meet performance indicators and environmental objectives; | | | | | | | | | | 1 | N/A | Not Applicable | Future item. Within 18 months from 13 Nov2020. | |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
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13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
Waste (general, mine rock, tailings)
Community (local Indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | | | | |
|---|--|---|--|--|--|--|--|--|--|--|---|-----|-------------------------|--|---|
| | | 45.a.vi | monitoring in accordance with relevant Recommendations in NT EPA Assessment Report 86 to determine whether management measures are effective and to inform the need for adjustments to management measures or need for alternatives; | | | | | | | | 1 | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 45.a.vii | a continual feedback system to inform appropriate actions to be initiated when triggered and environmental objectives are always being met; | | | | | | | | 1 | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 45.a.viii | continual development of new management actions as required based on knowledge gained from experience at the site and elsewhere across industry. | | | | | | | | 1 | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 45.b | The AMP must be reviewed by the Independent Monitor or an appropriately qualified, independent third party, and updated with inputs from the CRG (once established under Condition 43); | | | | | | | | 1 | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 45.c | all review findings and CRG input requirements are to be provided to the Department for approval. | | | | | | | | 1 | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 46 - previously 133, changed | Unless agreed otherwise in writing by the Department, the AMP must: | | | | | | | | | | Refer to sub conditions | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.a | clearly set out the required management objectives and performance indicators; | | | | | | | | 1 | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.b | provide clarity on the triggers for changes to management actions, and responsibility and evidentiary basis for decision-making; | | | | | | | | 1 | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.c | establish the timeframe for initiation of certain actions if triggers are exceeded, including decisions to discontinue an activity and clarify responsibility and evidentiary basis for decision-making; | | | | | | | | 1 | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.d | establish a process for adjusting triggers that includes the regulator; | | | | | | | | 1 | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.e | establish transparent monitoring, reporting and review requirements; | | | | | | | | 1 | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.f | establish processes to achieve transparency and stakeholder engagement in AMP design and implementation that includes NT EPA, DAWE and CRG; | | | | | | | | 1 | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.g | set out the mechanism for periodic review by Independent Monitor, which must not exceed a frequency of every three years; | | | | | | | | 1 | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.h | be provided to the Department for re-approval in the event that any material changes are made to the AMP. | | | | | | | | 1 | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 47 - previously 134 | The Operator must provide written notice to the Minister and to the NT EPA (under clause 14A of the Environmental Assessment Administrative Procedures 1984) where trends indicate performance indicators and environmental objectives will not, or are unlikely to be, met by implementing the AMP. | | | | | | | | 1 | N/A | Not Applicable | | EMR will include trend analysis. But this condition is related to AMP that is not triggered. |
| Independent oversight Appointment of ICE | | | | | | | | | | | | | | | |
| | | 48 - previously 21 for CWNOEF Alpha and Bravo and 24 for Charlie changed, 46 for TSF changed, partially 27 for CENOEF | The Operator must appoint an Independent Certifying Engineer (ICE) to: | | | | | | | | | | Refer to sub conditions | | <p>The Operator advised that the following activities were undertaken during the reporting period</p> <ul style="list-style-type: none"> • NOEF West stage: Continued construction of the MS-NAF Halo and advection barriers on the top and southwest faces; conducted the Geosynthetic Liner Constructability Trial on the western face. • NOEF Central West (CW) stage: Continued construction of the MS-NAF Halo and advection barriers on the top face and stockpiling of materials on CW Alpha and Bravo; continued construction of CW Charlie stage as per OMP EIS methodology. • NOEF Central East (CE) stage: Construction of the Foundation, Base, Core and Halo zones and PAF(RE) Cell in as per OMP EIS methodology. ITP examples for CE included in the folder: • NOEF Northeast (NE) stage: Commenced clearing and topsoil stripping of the NE Alpha stage. • NOEF Southeast (SE) stage: Stockpiling of benign materials for later use as advection barrier layers in the NOEF construction: completed construction of Phase 1 of the PAF(RE) Trial Cell." <p>OBS: There is a DITT opportunity to tidy up wording of the ICE condition to specify where or for what construction activities condition 48 is required (e.g. NOEF, TSF, other).</p> |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
Waste (general, mine rock, tailings)
Community (local indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

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|--|------|--|--|--|--|--|--|--|--|---|----------------------------|---|---|
| | 48.a | warrant and accept both the design and construction works, without limitation on responsibility; | | | | | | | | 2 | Part Compliance (moderate) | <p>Central East Alpha/Bravo – Subgrade, Basal CCL and Benign Rock Fill ITP signed off by the ICE- Completed July 2020 (CEA 3D ITP). ICE NOEF Construction Progress Report May 2020 dated July 2020. ICE Peer Review of NOEF Monthly Construction Progress Reports (July 2020 dated September 2020, September 2020 dated December 2020, November 2020 dated January 2021, January 2021 dated August 2021, February 2021 dated September 2021, March 2021 dated October 2021, April 2021 dated November 2021). NOEF Independent Certifying Engineer Role Proposal for Services McArthur River Mining Pty Ltd 18 June 2021 (3219254-PRO-O_NOEF ICE Proposal) (after audit period). MRM Tailings Storage Facility Quarterly Report September to November 2020</p> <p>The Peer Review of NOEF Monthly Construction Progress Reports listed above state in Section 1 "The regulator (Department of Primary Industry and Resources, or DIPR) requires MRM to have an appropriately qualified independent engineer to be involved in the design and construction process. GHD have therefore been engaged by MRM to provide Engineering Services and Certification for the various projects associated with the NOEF."</p> <p>No evidence was provided to demonstrate that the ICE warrants and accepts both the design and construction works for the TSF or specifically without limitation on responsibility for the NOEF in the audit period.</p> | <p>The Operator advised the Independent Monitor that the ICE are not willing to accept liability for all the works without limitation. The NOEF ICE Role Proposal 18 June 2021 (after audit period) states "– We explicitly note that the description of the ICE described in Clause 48(a) of the Northern Territory Government's Variation of Authorisation (VOA, dated 13 November 2020) – which says "ICE to warrant and accept both the design and construction works, without limitation on responsibility" – does not apply to our agreed scope with MRM. As per previous correspondence and discussions with MRM, it would be impractical and cost-prohibitive for us to attempt to comply with VOA Clause 48(a)." The proposal further states Table 5 "a) the Contractor does not accept any liability for work or services performed by other parties prior to its appointment as Independent Certifying Engineer;".</p> <p>TSF quarterly reports prepared by the Operator do refer to activities undertaken by the ICE but are not sufficient for evidence for this condition. Similarly evidence included against condition 77 includes progress reports prepared by the Operator and ITPs signed off by the Resident Engineer/Field Engineer but were not performed by the ICE.</p> <p>OFI: Obtain confirmation regarding the ICE's agreement to warrant and accept both the design and construction works, without limitation on responsibility. Otherwise, the Operator should obtain approval of the ICE's limitation on responsibility position with DITT.</p> <p>OFI: Include the following statement in the monthly ICE reports: "The Independent Certifying Engineer warrants and accepts both the design and construction works, without limitation on responsibility" or an agreed level of limitation related to works by other parties prior to its appointment as ICE.</p> <p>OFI: Retain evidence that the ICE warrants and accepts both the design and construction works for more than the NOEF (e.g. TSF or other construction on site), without limitation on responsibility.</p> |
| | 48.b | be present during all phases of construction where required in the approved MMP (including at hold points) and oversee and certify the works that they meet design specifications; | | | | | | | | 3 | Part Compliance (High) | <p>Central East Alpha/Bravo – Subgrade, Basal CCL and Benign Rock Fill ITP signed off by the ICE- Completed July 2020 (CEA 3D ITP). ICE NOEF Construction Progress Report May 2020 dated July 2020. ICE Peer Review of NOEF Monthly Construction Progress Reports (July 2020 dated September 2020, September 2020 dated December 2020, November 2020 dated January 2021, January 2021 dated August 2021, February 2021 dated September 2021, March 2021 dated October 2021, April 2021 dated November 2021). NOEF ICE Scope of Works 2020 Proposal.</p> <p>The ICE has prepared reports during NOEF phases of construction and have advised that works are in accordance with the specifications and design intent based on the NOEF monthly construction progress reports and have raised some items identified below (Section 5.2 of the Peer Review of NOEF Monthly Construction Progress Report March 2021 dated October 2021): *Overall design questions, design surfaces, or as-constructed surfaces are missing for the following ITPs *Missing information, including signatures, update specifications or additional measurements were found in the following ITPs *Measurements above the required maximum of 7.5 m for a core lift or 2 m for a PAF RE cell, or more than 0.5 m from the design surface were found in the following ITPs:.</p> <p>The Peer Review of NOEF Monthly Construction Progress Reports listed above state in Section 1 "The regulator (Department of Primary Industry and Resources, or DIPR) requires MRM to have an appropriately qualified independent engineer to be involved in the design and construction process. GHD have therefore been engaged by MRM to provide Engineering Services and Certification for the various projects associated with the NOEF."</p> <p>No evidence of ICE supervision of construction other than for the NOEF (e.g. TSF) was provided.</p> | <p>July and September 2020 Reports Section 5 "GHD's site presence, routine inspections of works and presence during witness and hold points, has allowed for an assessment of the performance of the project team and the extent to which the specification requirements are being met, for the construction activities." and Section 6 "Based on the daily site inspections and observations, investigations and geotechnical testing results, it is the opinion of GHD that the Central East expansion is being constructed in accordance with the specifications and design intent." The November 2020 and March 2021 reports have similar paragraphs to Section 5. The July 2020 Report also stated in section 3 "GHD's site engineer maintained a part time site presence for the duration of the reporting period, allowing for routine inspections of the construction works and verification of required witness and hold points."</p> <p>September 2020 Report section 5.2 "All works completed in this reporting period are within the design intent. The CW Charlie Flood Proofing works are being constructed as the design and specification for the BGM installation is being finalised by MRM. The works are to be confirmed against the final design and specification."</p> <p>The Operator advised "The TSF project receives ICE sign-off as a whole for the final construction report when completed, but no reports have been finalised at this stage." Examples of foundation hold point release forms, layer checklists, construction progress report and weekly construction reports were provided by the Operator. The Operator advised that they will be addressed to the ICE for final sign off when complete.</p> <p>OFI: Retain evidence that the ICE is present during all phases of construction where required in the approved MMP (including at hold points) and oversees and certifies that the works meet design specifications for more than the NOEF (e.g. TSF or other construction on site). The ICE should prepare reviews of the TSF and any other construction to demonstrate progressive compliance.</p> <p>OFI: Progressively implement actions raised by the ICE throughout construction to address issues to allow close out of Inspection and Test Plans (ITP).</p> |
| | 48.c | approve re-commencement of construction at defined hold points; | | | | | | | | 3 | Part Compliance (High) | <p>ICE NOEF Construction Progress Report May 2020 dated July 2020. ICE Peer Review of NOEF Monthly Construction Progress Reports (July 2020 dated September 2020, September 2020 dated December 2020, November 2020 dated January 2021, January 2021 dated August 2021, February 2021 dated September 2021, March 2021 dated October 2021, April 2021 dated November 2021). ITP for CWB MS NAF Temporary Halo Cover (Cap) V1 Part 4 week 18 ICE signed 29Sep20 (ITP_CWB_101_MS NAF Cap Part 4 B_W18). (relevant to the first two days of the audit) CEB_2B_ITP_CCL signed and CEB_2C_ITP_CCL signed (ITP examples for Central East Bravo Foundation Cell 2B and 2C prepared date 24Feb21 and signatures in March and April 2021) No overall ICE signoff and Placement of Benign Material hold point not signed by ICE. CEA_3D ITP - Complete (ITP example for Central East Alpha/Bravo Foundation Cell 3D Floor prepared date 24Jun20 and signatures in July 2020).</p> <p>Some NOEF ITPs were not signed as approved by the ICE at the top of the form and had some hold points unsigned by the ICE as mentioned above. Others were generally for before the audit period and signed off 6 months after the date of the activity (e.g. ITP for works week 18, 25 April to 2 May that the ICE signed 29Sep20).</p> <p>No evidence of ICE supervision of construction other than for the NOEF (e.g. TSF) was provided.</p> | <p>July report Section 4.1 "GHD's site engineer maintained a part-time site presence for the duration of the reporting period, allowing for routine inspections of the construction works and verification of required witness and hold points."</p> <p>OFI: Confirm that the ICE is approving recommencement of construction at defined hold points and include a statement that the ICE "approved re-commencement of construction at defined hold points" for the NOEF, TSF and any other construction in relevant monthly ICE reports.</p> <p>OBS: NOEF ITPs for March to May 2020 were only signed off in September 2020.</p> |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
Waste (general, mine rock, tailings)
Community (local Indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|--|--|
| | | 48.d | approve any material changes to the design during construction; | | | | | | | 1 | | 1 | 4 | Full Compliance | ICE NOEF Construction Progress Report May 2020 dated July 2020. ICE Peer Review of NOEF Monthly Construction Progress Reports (July 2020 dated September 2020, September 2020 dated December 2020, November 2020 dated January 2021, January 2021 dated August 2021, February 2021 dated September 2021, March 2021 dated October 2021, April 2021 dated November 2021). Monthly construction reports include a section on "Design/Specification Changes and Non-conformance". Specifically the July report included: * "CCL Layer for Central East Alpha lot 3E batter was placed thicker than design tolerance of 500 mm (-0 to +200 mm)." * "The additional drainage line that was installed through cells 7E and 7H was the result of discussions between MRM and GHD after it was noted that the underdrain only extended to cell 7D." There were no material changes to the TSF design during construction in the audit period. | EMR 2020 -2021 section 2.7.2 related to the TSF "In line with the January 2020 MMP, the following construction activities occurred over the reporting period: • Completion of Cell 2 Stage 6 – 2 m upstream raise to RL 10,061. • Completion of Cell 1 Stage 5 – 3 m upstream raise to RL 10,059. • Completion of the Surprise Creek Seepage Interception Trench. Construction works were completed consistent with the approved designs, the TSF Raising - General Specification for Design and Construction (Appendix I of the January 2020 MMP), and the overall Life of Mine philosophy." |
| | | 48.e | verify any monitoring equipment/structure installed or to be installed as part of the construction as specified in the relevant detailed designs remains functional at the conclusion of the construction works; | | | | | | | 1 | | 1 | N/A | Not Applicable | | Future item. The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available." OBS: Include reference to this requirement in the ICE construction reports, namely verification that any monitoring equipment/structure installed or to be installed as part of the construction as specified in the relevant detailed designs remains functional at the conclusion of the construction works. |
| | | 48.e.i | in the event such equipment becomes non-functional, then replacement or an ICE approved alternative must be implemented by the Operator; | | | | | | | 1 | | 1 | N/A | Not Applicable | | Future item. The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available." |
| | | 48.f | agree in writing, if the Operator wish to appoint an Operator's project manager/resident engineer as an onsite representative, and agree in writing that this does not diminish the ICE's responsibility or liability for the project; | | | | | | | 1 | | 1 | N/A | Not Applicable | | The Operator advised the Independent Monitor that they did not wish to appoint an Operator's project manager/resident engineer as an onsite representative in the audit period. |
| | | 48.g | on completion of construction, provide a certified "as-constructed" construction report detailing: | | | | | | | 1 | | 1 | N/A | Not Applicable | | Future item. The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available." |
| | | 48.g.i | all the works undertaken; | | | | | | | 1 | | 1 | N/A | Not Applicable | | Future item. The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available." |
| | | 48.g.ii | evidence of: | | | | | | | | | | | Refer to sub conditions | | |
| | | 48.g.ii.a | hold-point sign-offs; | | | | | | | 1 | | 1 | N/A | Not Applicable | | Future item. The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available." |
| | | 48.g.ii.b | testing carried out (including but not limited to field tests, laboratory tests and statistical tests); | | | | | | | 1 | | 1 | N/A | Not Applicable | | Future item. The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available." |
| | | 48.g.ii.c | acceptance criteria applied and compliance of the test results with the acceptance criteria; | | | | | | | 1 | | 1 | N/A | Not Applicable | | Future item. The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available." |
| | | 48.g.ii.d | where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised. | | | | | | | 1 | | 1 | N/A | Not Applicable | | Future item. The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available." |
| | | 49 | The Operator must ensure that the ICE holds appropriate public and professional indemnity insurance to cover the scope of works associated with the scope of work certified. | | | | | | | | | | 3 | Part Compliance (High) | GHD Certificate of Placement – Public and Products Liability (GHD Pty Ltd (PPL)_AUD05m). GHD Certificate of Placement – Professional Indemnity (GHD Pty Ltd_AUD05m). NOEF ICE Role Proposal for Services 18 June 2021 (after audit period) GHD Certificate of Placement – Public and Products Liability from: 4.00pm 31 May 2020 to: 4.00pm 31 May 2021 - \$5,000,000 each and every occurrence – Public Liability and \$5,000,000 each and every occurrence in the aggregate – Products Liability. GHD Certificate of Placement – Professional Indemnity AUD 5,000,000 any one claim and in the aggregate 1 December 2019 at 4.00pm to 1 December 2020 at 4.00pm. No evidence was provided to demonstrate Professional Indemnity insurance from 1Dec20 to 30Apr20 | The Operator advised "GHD maintains Public and Professional Indemnity insurances that are consistent with the levels stipulated in the MRM-GHD Umbrella Agreement UMB010– Consultancy Services. The Umbrella Agreement is included at the end of the NOEF ICE Proposal provided for Condition 48." This contract is dated 18Jun21 and therefore is for after the audit period. No OFI has been prepared as there is evidence from the NOEF ICE Role Proposal for Services 18 June 2021 that appropriate public and professional indemnity insurance is required under the contract clause 12.1 (b). |
| Independent Tailings Review Board | | | | | | | | | | | | | | Refer to sub conditions | | No action but included for context of the subconditions. |
| | | 50 - previously 47, 48 and 49, 50 | The Operator must: | | | | | | | | | | | | | |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEFF)
Waste (general, mine rock, tailings)
Community (local indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEFF) | Waste (general, mine rock, tailings) | Community (local indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|---|---|---|-------------|----------------------------|--|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|--|--|
| | | 50.a | convene an advisory board (Independent Tailings Review Board or ITRB); | | | | | | | 1 | | | 4 | Full Compliance | Sighted meeting minutes 8 April 2021. 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5. 20.10.02 ITRB Document Comment Tracking Register - Pbox Bleed Water. 21.01.22 ITRB Meeting Minutes. 21.03.20 ITRB Document Comment Tracking Register - TSF Cell 2 Stage 7. 21.04.08 ITRB Site Meeting Minutes. Evidence of meeting minutes and document tracking register from throughout the audit period was reviewed by the Independent Monitor demonstrating that the ITRB exists and Dr. Tamie Weaver, Prof. David Williams and Dr. Bruce Brown were the ITRB. | |
| | | 50.b | ensure the ITRB: | | | | | | | | | | | Refer to sub conditions | | |
| | | 50.b.i | membership includes independent geotechnical, tailings, and groundwater specialists; | | | | | | | 1 | | | 4 | Full Compliance | Curriculum vitae for ITRB members Dr. Tamie Weaver and Prof. David Williams Letter Operator to Department subject RE: MRM ITRB - Appointment of New Tailings Independent review board (ITRB) member. Curriculum vitae for ITRB members Dr. Tamie Weaver and Prof. David Williams show their experience to meet this condition. Dr. Bruce Brown's relevant experience that meets this condition is included in the letter Operator to Department subject RE: MRM ITRB - Appointment of New Tailings Independent review board (ITRB) member. | |
| | | 50.b.ii | meets regularly to advise on operation of the TSF and any future modifications to its design; | | | | | | | 1 | | | 4 | Full Compliance | 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5. 20.10.02 ITRB Document Comment Tracking Register - Pbox Bleed Water. 21.01.22 ITRB Meeting Minutes. 21.03.20 ITRB Document Comment Tracking Register - TSF Cell 2 Stage 7. 21.04.08 ITRB Site Meeting Minutes. | Evidence of meeting minutes and document tracking registers from throughout the audit period were reviewed by the IM. 21.04.08 ITRB Site Meeting Minutes included "For future auditing requirements, document ITRB site visits and meetings, responsibilities, and how they are being met." |
| | | 50.b.iii | is required to meet within 90 days from commencement of construction to allow sufficient time for review of subsequent modification to the TSF; | | | | | | | 1 | | | 4 | Full Compliance | 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5 21.03.20 ITRB Document Comment Tracking Register - TSF Cell 2 Stage 7 MRM Tailings Storage Facility Quarterly Report DECEMBER 2020 TO FEBRUARY 2020 section 2 states "Cell 1, Stage 5 construction to 10059 m, which commenced on 12 August 2021. The embankment raise was completed in November 2020, with the buttress and toe-berm completed in December 2020." Note: reference to 12Aug2021 should be 12Aug2020. This demonstrates that the ITRB did meet (document tracking date 2Jul2020) within 90 days of construction commencement (12Aug20). As the TSF Cell 2 Stage 7 ITRB is dated 20Mar2021, within 90 days falls after the audit period and therefore the Operator is compliant. | |
| | | 50.c | provide details of the members of the ITRB panel and meeting frequency to the Department for endorsement by the Department; | | | | | | | 1 | | 1 | 4 | Full Compliance | Email Operator to Department 30Oct2017 MRM DPIR Meeting with ITRB. The ITRB members are Dr. Tamie Weaver, Prof. David Williams and Dr. Bruce Brown, which is consistent with the individuals listed in the Email Operator to Department 30Oct2017 MRM DPIR Meeting with ITRB. The Department advised the Independent Monitor in the 2020 audit that they had endorsed the members of the ITRB and there have been no changes in the audit period. | |
| | | 50.d | together with the ICE, provide a written response to the satisfaction of the Department, in the event that future review of the designs by independent experts require additional matters to be addressed; | | | | | | | 1 | | 1 | N/A | Not Applicable | | Not applicable as review of the designs by independent experts has not occurred. |
| | | 50.e | ensure ITRB endorses any future modifications to the TSF in writing, with all ITRB review comments appropriately addressed for both construction and future use of the structure. This includes, but is not limited to: | | | | | | | 1 | | 1 | 4 | Full Compliance | 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5. 20.10.02 ITRB Document Comment Tracking Register - Pbox Bleed Water. 21.01.22 ITRB Meeting Minutes. 21.03.20 ITRB Document Comment Tracking Register - TSF Cell 2 Stage 7. 21.04.08 ITRB Site Meeting Minutes. 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5 "GHD's Draft Detailed Design Report for the McArthur River Mining Pty Ltd (MRM) TSF Cell 1 Stage 5 Raise to RL 10059 is endorsed by the ITRB as more than adequate." 21.03.20 ITRB Document Comment Tracking Register - TSF Cell 2 Stage 7 "GHD's Detailed Design Report Revision B Draft for the McArthur River Mining Pty Ltd (MRM) Cell 2 TSF Stage 7 Raise to RL 10063 m is endorsed by the ITRB as being more than adequate." | OBS: 21.03.20 ITRB Document Comment Tracking Register - TSF Cell 2 Stage 7 was only signed by one ITRB member (out of 3 members), typically all members signed the Document Comment Tracking Register. |
| | | 50.e.i | Studies and/or trials to inform future construction and/or operation of the structure; | | | | | | | 1 | | 1 | N/A | Not Applicable | | The Operator advised the Independent Monitor that there have been no studies or trials in the audit period to inform future construction and/or operation of the TSF. |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|---|--|
| | | 50.e.ii | The TSF Operations, Maintenance and Surveillance (OMS) manual, including the Trigger, Action and Response Plan (TARP) is updated regularly to accommodate any relevant changes to the structure that may impact on its stability and performance. | | | | | | | 1 | | 1 | 3 | Part Compliance (High) | <p>TSF Operations, Maintenance and Surveillance (OMS) manual version 5 dated 31 July 2020 (Revision following re-commissioning Cell 1, changeover to MRM prepared document). 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5.</p> <p>TSF Operations, Maintenance and Surveillance (OMS) manual Section 2.2.5 states "The ITRB shall meet and review annually as a minimum, and must consider when there is a change to the Consequence Category assessment, modifications to the design or operations of the structure or issues of concern noted in the annual dam safety inspections." This 31 July 2020 OMS appears to have been updated for the Cell 1 Stage 4 Raise based on page 1 of the document, "Revision following Cell 1 Stage 4 Raise to RL 10,056 m". Therefore it did not appear to have been updated based on the ITRB comments on the Cell 1 Stage 5 raise.</p> <p>In 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5 the ITRB in item 25 required OMS update and response from Operator included that OMS would be updated. Item 7 also noted the requirement to update and review the OMS before commissioning.</p> <p>MRM Tailings Storage Facility Quarterly Report December 2020 – February 2021 states in section 2 "Cell 1, Stage 5 construction to 10059 m, which commenced on 12 August 2020. The embankment raise was completed in November 2020, with the buttress and toe-berm completed in December 2020."</p> <p>The Independent Monitor was not provided with evidence that the ITRB's comments related to the OMS from 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5 had been addressed in the OMS before commissioning and therefore as a subcondition to 50.e this is only part compliant.</p> | OFI: Ensure the Independent Tailings Review Board (ITRB) review comments on the TSF Operations, Maintenance and Surveillance (OMS) manual are incorporated into the OMS before new construction commissioning. |
| Waste Rock Management | | | | | | | | | | | | | | | | |
| 16 | 16 | | From the commencement of this variation to Authorisation Non-benign Waste is to be permanently placed: | | | | | | | | | | | Refer to sub conditions | | Included for context for old sub conditions |
| 16.b | 16.b | | on a compacted clay liner (CCL) or engineered low permeability material that slopes towards a Perimeter Runoff Dam (PROD) or a storage structure, as defined in 37(a); | | 1 | | | | | 1 | | | 4 | Full Compliance | <p>NOEF Central East Lot 4F Floor ITP signed 23Jun20 and 24Jun20 (CE_Alpha ITP Lot 4F Floor_Finished). NOEF Central East CEA 2D Floor ITP signed 29Jul20 and 30Jul20 (CEA 2D ITP - complete). Letter from ICE to Operator dated 23Apr20 subject NOEF Central East Foundation Investigation - ICE Review. EMR 2020 - 2021.</p> <p>NOEF Construction Progress Report April 2020 dated June 2020 (although the April 2020 report was before the audit period this is considered evidence given it is dated June 2020).</p> <p>NOEF Construction Progress Report April 2020 dated June 2020 "The Central East Alpha and Bravo Stage expansion will feature a sloping low permeability foundation designed to enhance the movement of infiltration through the NOEF to seepage extraction points on the eastern perimeter."</p> <p>ICE signoff sheets for all basal clay liners reviewed. Central East Alpha/Bravo – Subgrade, Basal CCL and Benign Rock Fill (CE_Alpha ITP Lot 4F Floor_Finished) signed off in June 2020 included "The CCL layer shall: [...] Minimum thickness of 500 mm, and shall be compacted in maximum horizontal layers of 300 mm (after compaction) and to at least 98% of SMDD or HILF." and related to CCL Placement "Minimum of 500 mm (-0 mm/ +100 mm) thickness and self-shedding profile achieved" and included permeability testing. Central East Alpha/Bravo – Subgrade, Basal CCL and Benign Rock Fill (CEA 2D ITP - complete) signed off July 2020 was similar to the NOEF Central East Lot 4F Floor ITP.</p> <p>Section 2.5.2 of the EMR states "The CE stage was constructed as per the OMP EIS methodology and consistent with the approved MMP, including the development of: <ul style="list-style-type: none"> a minimum 0.5 m thick low permeability liner with a maximum saturated hydraulic conductivity of 1 x 10⁻⁹ metres per second" and "The testing showed that 100% of the CCL lots constructed were in conformance with the required permeability specification and zero failures were observed". Table 8 of the EMR 2020-2021 NOEF Central East Stage Compacted Clay Liner Testing has the minimum required number of tests for permeability was 17 and that 17 were conducted. </p> | <p>This condition is only relevant until 13Nov2020. Specifically needs to be "engineered" fill for this timeframe.</p> <p>ICE Review of NOEF Central East Foundation Investigation 23 April 2020 is from before the audit period but "The report describes investigations that have been carried out by MRM to further assess the hydraulic properties of the foundation below existing developed areas of NOEF Central East". The report also states "The report findings are endorsed and GHD considers that the investigation provides sufficient evidence that the existing stockpile foundation meets the design intent and satisfies (and likely exceeds) the minimum 0.5 m thick, minimum 1x10⁻⁹ m/s CCL specification".</p> <p>RFI to condition 113 about "engineered" liner.</p> |
| 16.c | 16.c | | and encapsulated in a minimum of a 600mm thick CCL, or engineered low permeability material, upon construction being finalised; and | 1 | | | | | | 1 | | | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. The condition is not applicable because construction was not finalised before 13Nov2020. |
| 16.d | 16.d | | the encapsulation CCL or engineered low permeability material must be covered by benign material to protect it from erosion and desiccation. | 1 | | | | | | 1 | | | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. The condition is not applicable because construction was not finalised before 13Nov2020. |
| 17 | 17 | | PAF (HC) and PAF (RE) waste rock cells, if not finalised, will have interim alluvium covers placed prior to the 1st November each year. | | | | | | | 1 | | | N/A | Not Applicable | | <p>Condition not included in 13Nov2020 authorisation. Considered superseded by the current Authorisation. This condition is only relevant until 13Nov2020.</p> <p>This condition has been removed from the 13Nov2020 Authorisation, which is recognition from DITT that it was impractical and that the requirement was not necessary to mitigate potential environmental risk.</p> |
| 18 | 18 | | The Operator must only place PAF (HC) and PAF (RE) Waste Rock at the following locations: | | | | | | | | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020. |
| 18.a | 18.a | | NOEF West A, B, C and D; | | | | | | | 1 | | | N/A | Not Applicable | <p>EMR 2020 - 2021.</p> <p>EMR 2020 - 2021 Section 2.5.1 states "Smaller amounts of waste were emplaced on West A, B, C and D and CW Alpha/Bravo (as planned) as a cover to protect the PAF cell from erosion and construct the drainage appropriately." The EMR 2020 - 2021 table 6 showed that the waste was not PAF (HC) and PAF (RE) Waste Rock so this sub-condition is N/A.</p> | This condition is only relevant until 13Nov2020. |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|--|--|
| 18.b | 18.b | | Central West NOEF (CWNOEF) Alpha and Bravo stages, but only after the Western Perimeter Runoff Dam (WPROD) has been designed, constructed and commissioned in accordance with all requirements of the Minister; | | | | | | | 1 | | | 4 | Full Compliance | EMR 2020 - 2021. WPROD was completed in July 2017 (before the audit period commenced) and Independent Monitor sighted a completion report dated 14Jul2017. Operator advised waste was placed in Central West NOEF (CWNOEF) Alpha and Bravo stages. EMR 2020 - 2021 Section 2.5.1 states "Smaller amounts of waste were emplaced on West A, B, C and D and CW Alpha/Bravo (as planned) as a cover to protect the PAF cell from erosion and construct the drainage appropriately. " | This condition is only relevant until 13Nov2020. |
| 18.c | 18.c | | Central West NOEF (CWNOEF) Charlie stage, only after approval under the EPBC Act; and | | | | | | | 1 | | | 4 | Full Compliance | EMR 2020 - 2021. There was EPBC Act approval so this location was acceptable. Note which approval number - RFI. EMR 2020 - 2021 in Table 6 shows waste was placed in Central West NOEF during the audit period. EMR 2020 - 2021 Section 2.5.1 states "During the reporting period, the majority of the overburden was placed in the CW Charlie and Central East stages of the NOEF (as planned). Smaller amounts of waste were emplaced on West A, B, C and D and CW Alpha/Bravo (as planned) as a cover to protect the PAF cell from erosion and construct the drainage appropriately. " | This condition is only relevant until 13Nov2020. It was difficult to distinguish between the placement of waste at Alpha and Bravo stages or Charlie stages as they were listed together in Table 6 of the EMR 2020-2021. The latest Authorisation approved 13Nov2020 no longer contains this condition as all areas are approved. |
| 18.d | 18.d | | Central East NOEF (CENOE) Alpha and Bravo, but only after: | | | | | | | 1 | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020 and is covered by the subconditions. |
| 18.d.i | 18.d.i | | approval under the EPBC Act; | | | | | | | 1 | | | 4 | Full Compliance | EPBC 2014-7210 | This condition is only relevant until 13Nov2020. There was EPBC Act approval so this location was acceptable (EPBC 2014-7210). EMR 2020 - 2021 in Table 6 shows waste was placed in Central East NOEF during the audit period. EMR 2020 - 2021 Section 2.5.1 states "During the reporting period, the majority of the overburden was placed in the CW Charlie and Central East stages of the NOEF (as planned). " |
| 18.d.ii | 18.d.ii | | the completion of construction in accordance with Conditions 25 and 27; and | | | | | | | 1 | | | 4 | Full Compliance | Refer conditions 25 and 27. | This condition is only relevant until 13Nov2020. The Operator advised "the placement of waste in the CENOE is considered part of the construction of the entire stage. The requirement of Condition 18dii is that construction of the CENOE stage, including the emplacement of PAF (HC) and PAF (RE) waste rock, is completed in accordance with the design concepts within the January 2019 MMP Amendment (Condition 25)." |
| 18.d.iii | 18.d.iii | | commissioning of the Eastern Perimeter Runoff Dam (EPROD) in accordance with Conditions 43, 44 and 45. | | 1 | | | | | | | | 3 | Part Compliance (High) | EMR 2020 - 2021. Email Department to Operator subject MRM - Commissioning of EPROD dated 20Mar 2020. The Operator advised "Stage 1 Commissioning of EPROD was conducted between March 2020 and June 2020. Approval was then provided by the ICE for subsequent filling of the dam above the Stage 1 commissioning level, and with low pH water. Lack of available suitable water has resulted in Stage 2 Commissioning (i.e. controlled filling to Full Supply Level (FSL)) not being completed yet. Note: EPROD has not been used to capture water from the CENOE stage yet, and won't be for the coming wet season either. Water from the CENOE stage has been and will continue to be in the near term, directed into the CE Alpha/CE Bravo sumps, from where it is pumped to alternative PRODs. Waste placement commenced in CENOE in June 2020 in accordance with the MMP and concept designs / ITPs approved and endorsed by the ICE. Once the stage has been completed, the Construction Report will be drafted and endorsed by the ICE." The EMR 2020 - 2021 Section 4.1.1 says the following related to EPROD "The dam was subsequently emptied to complete full commissioning between 17 August and 23 October 2020. The dam underwent a period of controlled filling as part of the commissioning process from 23 October to 20 December 2020. The dam has been exclusively operated as a turkey's nest (no reporting catchment) and used to store and manage PbOx impacted water." No evidence that the EPROD construction report required in condition 45 has been submitted to the Department | This condition is only relevant until 13Nov2020. Email Department to Operator subject MRM - Commissioning of EPROD dated 20Mar 2020 from Department to Operator stated "Looking at the Authorisation relating to EPROD, Condition 45 requires the ICE to certify the construction reports and data and submission of these information to this Department prior to commencement of EPROD for operational purposes. Given that ICE has identified the pit can be dewatered and the water used as part of the commissioning tests, it is accepted that the intent of Condition 45 of the Authorisation for operational use EPROD will be achieved." and "I therefore formally advise that the use of EPROD for operational purposes is approved and is subject to being carried out in accordance with the submitted endorsement letter from the ICE and accompanying Commissioning Plan." The does not mean that condition 45 was met, only that EPROD could be used for operational purposes (i.e. as constructed reports were still required). As condition 45 was not completed, condition 18 is considered part-compliant. Condition 18.d.iii is no longer included in the 13Nov2020 Authorisation and therefore no OFI is created. The requirement to be in accordance with condition 45 (Construction reports including QA and QC data endorsed by the Independent Certifying Engineer (ICE) must be provided to the Department prior to commencement of operation within 30 days of construction being completed) has not occurred. Condition 45 has been removed from 13Nov20 but is covered by condition75k. The intent is that condition 75k should be stand alone rather than depending on a dewatering event. |
| | 51 - previously 16 | | From the date of authorisation Non-benign Waste is to be permanently placed consistent with the approved MMP: | | | | | | | | | | | Refer to sub conditions | | |
| | 51.a - previously 16.a | | above the 100 year ARI flood level, unless flood mitigation measures are provided consistent with the approved MMP and relevant Detailed Designs submitted to the Department in accordance with the conditions of this variation of Authorisation, with the exception of PAF(RE); | | 1 | | 1 | | | 1 | | | 4 | Full Compliance | CE Stage PAF_RE Cell - Section A_V2 The CE Stage PAF_RE Cell - Section A_V2 is a plan and cross section of the CE Stage showing the lowest point of PAF(RE) at approximately 10,048 m RL and the 1:100 ARI flood level of approximately 10039.5 m RL. Demonstrating that PAF(RE) is above the 1:100 year ARI flood level . | The Operator advised "the ITP will be updated to have the ICE confirm construction requirements relating to the 1:100 ARI flood level are met." |

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|--|--|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|------------------|---|---|
| | | 51.b - previously 16.a changed | on a compacted clay liner (CCL) or low permeability material that satisfies the design objective in Condition 20 that slopes towards a Perimeter Runoff Dam (PROD) or an appropriately lined storage structure, as defined in Condition 58(a); | | 1 | | 1 | | | 1 | | | 4 | Full Compliance | <p>EMR 2020 - 2021 DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) CEB_2B_ITP_CCL signed and CEB_2C_ITP_CCL signed (ITP examples for Central East Bravo Foundation Cell 2B and 2C prepared date 24Feb21 and signatures in March and April 2021) No overall ICE signoff and Placement of Benign Material hold point not signed by ICE. CEA_3D ITP - Complete (ITP example for Central East Alpha/Bravo Foundation Cell 3D Floor prepared date 24Jun20 and signatures in July 2020)</p> <p>Section 2.5.2 of the EMR states "The CE stage was constructed as per the OMP EIS methodology and consistent with the approved MMP, including the development of: • a minimum 0.5 m thick low permeability liner with a maximum saturated hydraulic conductivity of 1 x 10⁻⁹ metres per second, shaped such that water reaching the liner will flow towards dedicated seepage extraction locations" and "The testing showed that 100% of the CCL lots constructed were in conformance with the required permeability specification and zero failures were observed". Table 8 of the EMR 2020-2021 NOEF Central East Stage Compacted Clay Liner Testing has the minimum required number of tests for permeability was 17 and that 17 were conducted.</p> <p>DITT Site Inspection Report dated 3Feb2021 stated "The drone footage additionally indicated the CE stage, overall, is being heavily worked for future waste rock placement, with basal wedge layer construction in progress to direct runoff towards the Eastern Perimeter Runoff Dam (EPROD)".</p> <p>A number of ITPs for CEA and CEB were provided from the audit period and demonstrated ICE signoff of construction of the CCL that stated a requirement for permeability testing and minimum of 500 mm thickness. There were some non-conformances in April 2021 noted related to CCL thickness.</p> | OBS: Some ITPs were not signed as approved by the ICE at the top of the form and had some hold points unsigned by the ICE, however those requirements are not specific to this Authorisation condition. |
| | | 51.c - previously 20.a.i for CWNOEF Alpha and Bravo and 23.a.i for Charlie | PAF is emplaced in lift heights that minimises particle size segregation and creation of chimney structures, and must not exceed 7.5m taking into construction tolerances; | | 1 | | 1 | | | 1 | | | 4 | Full Compliance | <p>EMR 2020 - 2021. Peer Review of NOEF Monthly Construction Progress Reports: *November 2020 dated January 2021. *July 2020 dated September 2020. *April 2021 dated November 2021. EMR 2020 - 2021.</p> <p>Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059)</p> <p>Section 2.5.2 of the EMR states "the CE stage was constructed as per the OMP EIS methodology and consistent with the approved MMP, including the development of: [...] • 'Wedge' geometry on top of the Base zone, constructed from non-benign material in up to 7.5 m lifts, with alluvium advection barriers between each lift, and sloped to assist surface water runoff to EPROD; • the Core zone constructed from non-benign waste in up to 7.5 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF material;"</p> <p>Peer Review of NOEF Monthly Construction Progress Report July 2020 Section 3.2.1 Central West Charlie Core Lift 3 "The haulage and dumping of PAF HC material to form a 7.5 m lift on top of core lift 2 to form core lift 3 continued throughout the month." and Section 3.2.2 Central West Charlie Core Lift 4 "The haulage and dumping of PAF HC material to form a 7.5 m lift on top of core lift 3 to form core lift 4 was completed in the last three weeks of the month."</p> | Note the previous variation of authorisation versions did not include construction tolerances. DITT Site Inspection Report dated 3Feb2021 stated "Construction of the NOEF, comprising waste placement continued in the Central West NOEF stage during the inspection (Plate 16). Adam Hatfield described the approved PAF waste placement techniques at NOEF that comprised placement of PAF (RE) in 2 m rises, while all other material was placed in 7 m rises. All rises were separated by a 100 mm advection barrier. This placement method is consistent with the Authorisation." Peer Review of NOEF Monthly Construction Progress Report November 2020 Section 3.2.2 Central West Charlie Core Lift 5 "The hauling and dumping of PAF-HC material to form a 7.5 m lift on top of core lift 4 to form core lift 5 continued throughout the month." NOEF Monthly Construction Progress Report April 2021 states "– Measurements above the required maximum of 7.5 m for a core lift or 2 m for a PAF RE cell, or more than 0.5 m from the design surface were found in the following ITPs: - ITP_CWC1_C007_PAFHC Week 17". NOEF Monthly Construction Progress Report March 2021 states "Measurements above the required maximum of 7.5 m for a core lift or 2 m for a PAF RE cell, or more than 0.5 m from the design surface were found in the following ITPs: o ITP_CWC1_C006_PAFHC Week 9 o ITP_CWC1_C006_PAFHC Week 10 o ITP_CWC1_C007_PAFHC Week 10 o ITP_CWC1_C007_PAFHC Week 11 OBS: Identified occurrences of measurements above the required maximum of 7.5m for a PAF lift height. The relevant ITPs remain open and so these exceedances will be reassessed in next AEPAR. |
| | | 51.d - previously 23.a.ii for Charlie changed | PAF(RE) is emplaced in dedicated cells in lift heights that minimises particle size segregation and creation of chimney structures, but must not exceed 2m taking into construction tolerances; | | 1 | | 1 | | | 1 | | | 4 | Full Compliance | <p>DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) EMR 2020 - 2021. Peer Review of NOEF Monthly Construction Progress Reports April 2021 dated November 2021.</p> <p>Section 2.5.2 of the EMR states "the CE stage was constructed as per the OMP EIS methodology and consistent with the approved MMP, including the development of: [...] • the PAF(RE) Cell, constructed in up to 2 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF(RE) waste."</p> <p>Peer Review of NOEF Monthly Construction Progress Reports April 2021 dated November 2021 states "– Measurements above the required maximum of 7.5 m for a core lift or 2 m for a PAF RE cell, or more than 0.5 m from the design surface were found in the following ITPs: - ITP_CWC1_C007_PAFHC Week 17".</p> | Note the previous variation of authorisation versions did not include construction tolerances. DITT Site Inspection Report dated 3Feb2021 stated "Construction of the NOEF, comprising waste placement continued in the Central West NOEF stage during the inspection (Plate 16). Adam Hatfield described the approved PAF waste placement techniques at NOEF that comprised placement of PAF (RE) in 2 m rises, while all other material was placed in 7 m rises. All rises were separated by a 100 mm advection barrier. This placement method is consistent with the Authorisation." OBS: Identified occurrences of measurements above the required maximum of 7.5m for a PAF lift height. The relevant ITPs remain open and so these exceedances will be reassessed in next AEPAR. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
Waste (general, mine rock, tailings)
Community (local indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|--|--|
| | | 51.e - previously 20.a.ii for CWNOEF Alpha and Bravo and 23.a.iii for Charlie | advection barriers of appropriate thickness and moisture condition are emplaced at suitable intervals that disrupt the formation of oxygen convection cycles; | 1 | | | | | | 1 | | | 4 | Full Compliance | McArthur River Mining Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020, dated September 2020 (July 2020 NOEF Construction_GHD Progress Report). DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) MRM Inspection and Test Plan (ITP) Week 14 Apr. 11 – Apr. 17, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNNHC Week 15). MRM Inspection and Test Plan (ITP) Week 16 Apr. 16 – Apr. 24, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNNHC Week 16). Section 3.2.1 of the McArthur River Mining Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 states "The haulage and dumping of PAF HC material to form a 7.5 m lift on top of core lift 2 to form core lift 3 continued throughout the month. Works included ongoing dumping at the tip head and paddock dumping at the top of the lift, shaping of batters and placement of alluvial to form an advection barrier." However, it does not mention PAF placement. | DITT Site Inspection Report dated 3Feb2021 stated "Construction of the NOEF, comprising waste placement continued in the Central West NOEF stage during the inspection (Plate 16). Adam Hatfield described the approved PAF waste placement techniques at NOEF that comprised placement of PAF (RE) in 2 m rises, while all other material was placed in 7 m rises. All rises were separated by a 100 mm advection barrier. This placement method is consistent with the Authorisation." OBS: Identified occurrences of measurements above the required maximum of 7.5m for a PAF lift height. The relevant ITPs remain open and so these exceedances will be reassessed in next AEPAR. |
| | | 51.f - previously 20.a.iii for CWNOEF Alpha and Bravo | the ICE verifies the suitability of the PAF placement methodology with respect to particle size segregation and advection barriers; | | | | 1 | | | 1 | | | 4 | Full Compliance | McArthur River Mining Pty Ltd Peer Review of NOEF Monthly Construction Progress Report. July 2020 dated September 2020 (July 2020 NOEF Construction_GHD Progress Report). MRM Inspection and Test Plan (ITP) Week 14 Apr. 11 – Apr. 17, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNNHC Week 15). MRM Inspection and Test Plan (ITP) Week 16 Apr. 16 – Apr. 24, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNNHC Week 16). Section 1.1.2 of the McArthur River Mining Pty Ltd Peer Review of NOEF Monthly Construction Progress Reports for July 2020 and November 2020 state "GHD's role included witnessing construction processes including surface preparation, material selection, batter emplacement and advection barrier placement." MRM Inspection and Test Plan (ITP) Week 14 Apr. 11 – Apr. 17, 2021 with ICE signoff 24Jun21 has line 4 for Advection Barrier Placement and it is a witness point visual inspection by the ICE for the top and requires "Haul and dump alluvial material to work area. Material to meet >60% passing 2.0 mm (sand) with the size of largest particle 0.2 m (cobble) – visual assessment only" and "Spread on top surfaces to 0.1 m +/- 0.05 m thick. Spread on batters to 0.5 m +/- 0.2 m thick. Track roll by doze". However, it does not mention PAF placement. | |
| | | 51.g | construction of the NOEF stages, as defined in Conditions 53 and 54 is undertaken in accordance with a valid AAPA certificate; | | | | | | | | 1 | | 4 | Full Compliance | EMR 2020 - 2021. PRO-2200033 Permit to Clear Procedure and Forms. Sighted Ground Disturbance Permit 10/4/21 to 10/5/21 (for NOEF). EMR 2020 - 2021 "No disturbance has occurred in the area of the MRM4 Cultural Site. The MRM4 Cultural Site has an exclusion fence constructed around it, ranging from approximately 5 m to 85 m offset from the actual site, with appropriate signage as per Plate 2. Prior to any disturbance occurring within the fenced off MRM4 area, the following is required: • An AAPA Certificate obtained for the required disturbance (including undertaking any activities set out as conditions of the AAPA Certificate). • Submission to and approval by the MRM Environment and Community Departments of the required Dig and/or Clearing Permit." | |
| | | 51.h | design of the NOEF is flexible to accommodate changes, if required, to comply with archaeological site MRM4 matters under Condition 31; | | | | | | | | 1 | | 4 | Full Compliance | The NOEF is already designed to leave the MRM4 area undisturbed, if approval is not granted. An example of the design accommodating MRM4 is that there is an optional levy in between the NOEF and MRM4 in plans in case approval is not obtained to expand into the MRM4 area. Figure 14 of the January 2020 MMP shows the potential location of this optional levy. | |
| | | 51.i | in the event that future review of the designs or as-built structure by independent experts require additional matters to be addressed, the Operator together with the ICE must provide a written response to the satisfaction of the Department; | | | | | | | | | 1 | N/A | Not Applicable | | This is not applicable as no future review of the designs or as-built structure by independent experts has occurred. |
| | | 51.j | at mine closure, non-benign waste rock is encapsulated and fully contained within an engineered cover system consistent with the Overburden Management Project, or an alternative cover system endorsed by the relevant independent technical panels to the satisfaction of the Department. | | | | | | 1 | 1 | | | N/A | Not Applicable | | Future item. The mine remains operational. |
| Construction of CWNOEF | | | | | | | | | | | | | | | | |
| | | | ALPHA AND BRAVO STAGES | | | | | | | | | | | | | |
| 19 | 19 | | The Operator must construct, operate and maintain the CWNOEF Alpha and Bravo Stages in accordance with: | | | | | | | | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020. |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|---|--|
| 19.a | 19.a | | The version of the document entitled Northern Overburden Emplacement Facility (Central West Phase) Design, Construction & Operations Manual which has been approved by the Minister from time to time, subject to any conditions imposed or changes required by the Minister[9]. | | | | | | | 1 | | | 4 | Full Compliance | EMR 2020 -2021. NOEF Construction Progress Report May 2020 dated July 2020. Peer Review of NOEF Monthly Construction Progress Reports: *July 2020 dated September 2020. *September 2020 dated December 2020. *November 2020 dated January 2021. ITP CWB Hot Spot Remediation - Alluvial Week 18 25/04/2020 –02/05/2020 (relevant first two days of the audit period). This condition applies to CWNOEF Alpha and Bravo Stages. The EMR 2020 - 2021 states "• NOEF Central West (CW) stage: Continued construction of the MS-NAF Halo and advection barriers on the top face and stockpiling of materials on CW Alpha and Bravo;". The construction progress reports for May, June, July, August, September, October and November 2020 don't include CW Alpha and Bravo. The Operator advised "There were some minor works completed in CW Alpha/Bravo Stage in the period 1 Apr - 13 Nov 2020, mainly Halo construction/shaping and placement of temporary stockpiles." | This condition is only relevant until 13Nov2020. Note [9]: At the date of this document [sic Authorisation approval 15Aug2019], version 2.1 of the manual had been approved subject to the changes set out in the Operator's submission to the former Department of Mines and Energy dated 05Feb2016 (identified as MDOC2016/00840 in the Department's document management system). There is no reference to the Northern Overburden Emplacement Facility (Central West Phase) Design, Construction & Operations Manual in the EMR 2020 -2021. MRM Peer Review of NOEF Monthly Construction Progress Report August 2020 and MRM Peer Review of NOEF Monthly Construction Progress Report October 2020 both dated December 2020 include reference to "Relevant construction documentation includes the following: * NOEF Management Plan – Design, Construction and Operations (January 2020) * NOEF Design & Construction Guidelines, 2020 Edition V01 (January 2020)" |
| 19.b | 19.b | | Concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12. Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ICE must provide a written response that justifies the existing design or proposes an alternate design to the satisfaction of the department. | | | | | | | 1 | | | 4 | Full Compliance | NOEF Construction Progress Report May 2020 dated July 2020. Peer Review of NOEF Monthly Construction Progress Reports: *July 2020 dated September 2020. *September 2020 dated December 2020. *November 2020 dated January 2021. ITP CWB Hot Spot Remediation - Alluvial Week 18 25/04/2020 –02/05/2020 (relevant first two days of the audit period). Waste was placed at CWNOEF during the audit period as shown in table 6 of the EMR 2020 - 2021. The EMR 2020 - 2021 states "• NOEF Central West (CW) stage: Continued construction of the MS-NAF Halo and advection barriers on the top face and stockpiling of materials on CW Alpha and Bravo;". The construction progress reports for May, June, July, August, September, October and November 2020 don't include CW Alpha and Bravo. The Operator advised "There were some minor works completed in CW Alpha/Bravo Stage in the period 1 Apr - 13 Nov 2020, mainly Halo construction/shaping and placement of temporary stockpiles." | This condition is only relevant until 13Nov2020. Operator is not aware of any independent experts requiring additional matters to be addressed. |
| 20 | 20 | | During construction of the CWNOEF Alpha and Bravo stages, | | | | | | | | | | | Refer to sub conditions | | |
| 20.b | 20.b | | the Operator must provide construction reports to the Minister upon request including the following: | | | | | | | 1 | | 1 | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. No requests during the audit period. |
| 20.b.i | 20.b.i | | QA and QC results and reporting for CCLs; and | | | | | | | 1 | | 1 | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. |
| 20.b.ii | 20.b.ii | | results and reporting of testing undertaken to waste rock placement; | | | | | | | 1 | | 1 | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. |
| 20.b.iii | 20.b.iii | | results and reporting of testing undertaken to confirm alluvial materials placed at the CWNOEF would not generate AMD if exposed to water and were geotechnically suitable for the location they were placed. | | | | | | | 1 | | 1 | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. |
| CHARLIE STAGE | | | | | | | | | | | | | | | | |
| 22 | 22 | | The Operator is authorised to complete works to prepare and construct CWNOEF Charlie stage in accordance with: | | | | | | | | | | | Refer to sub conditions | | |
| 22.a | 22.a | | the 2013-2015 MMP amendment entitled Mining Management Plan Amendment: North Overburden Emplacement Facility – Central West Charlie Stage Foundation and additional information provided to the Department, as defined in condition 1(j)(ii)(10). The Operator must ensure: | | | | | | | 1 | | | 4 | Full Compliance | CWC ICE Review Letter 20Aug2019 (outside audit period). Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020. Peer Review of NOEF Monthly Construction Progress Report September 2020 dated December 2020. EMR 2020 - 2021. Peer Review of NOEF Monthly Construction Progress Report September 2020 section 3.2.1 related to Central West Charlie "Ongoing surveying of the surfaces to check for compliance to the design criteria was completed." Peer Review of NOEF Monthly Construction Progress Report July 2020 section 3.2.1 related to Central West Charlie "Ongoing surveying of the surfaces and batters to check for compliance to the design was completed." EMR 2020 - 2021 section 2.5.1 states "NOEF Central West (CW) stage: Continued construction of the MS-NAF Halo and advection barriers on the top face and stockpiling of materials on CW Alpha and Bravo; continued construction of CW Charlie stage as per OMP EIS methodology." | This condition is only relevant until 13Nov2020. Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 states "The design is consistent with the latest approvals that include the OMP EIS NOEF concepts." Outside the audit period. EMR 2020 - 2021 section 2.5.2 states "The CW Charlie stage was constructed as per the OMP EIS methodology, including: • Completion of the 'Wedge' geometry on top of the Base zone, constructed from non-benign material in up to 7.5 m lifts, with alluvium advection barriers between each lift, and sloped to assist surface water runoff to WPROD; • Development of the Core and Halo zones constructed from non-benign waste in up to 7.5 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF material; and • Completion of the PAF(RE) Cell, constructed in up to 2 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF(RE) waste." |

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
Waste (general, mine rock, tailings)
Community (local indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | | | | | | |
|----------|----------|--|---|--|--|--|--|--|--|--|--|--|--|---|------------------------|--|--|
| 22.a.i | 22.a.i | | including allowances for survey accuracy/tolerances, the post construction CCL thickness is not less than 500mm; | | | | | | | | | | | 4 | Full Compliance | Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020 Peer Review of NOEF Monthly Construction Progress Report September 2020 dated December 2020 Peer Review of NOEF Monthly Construction Progress Report September 2020 section 3.2.1 related to Central West Charlie "Ongoing surveying of the surfaces to check for compliance to the design criteria was completed." Peer Review of NOEF Monthly Construction Progress Report July 2020 section 3.2.1 related to Central West Charlie "Ongoing surveying of the surfaces and batters to check for compliance to the design was completed." | This condition is only relevant until 13Nov2020. |
| 22.a.ii | 22.a.ii | | the acceptance criteria for all tests, including those outlined in the condition 1.J(ii)(10), that are to be undertaken as part of the construction must be provided to the Department prior to commencement of the construction; | | | | | | | | | | | 3 | Part Compliance (High) | NOEF Construction Progress Report May 2020 dated July 2020. Peer Review of NOEF Monthly Construction Progress Reports: *July 2020 dated September 2020. *September 2020 dated December 2020. *November 2020 dated January 2021. *January 2021 dated August 2021. *February 2021 dated September 2021. *March 2021 dated October 2021. *April 2021 dated November 2021. CWC ICE Review Letter 20Aug2019 (before audit period). Department to Operator email subject FW: MRM Central West Charlie Stage - Detailed Design Report dated 21 August 2019 (before audit period but demonstrates example of DITT receipt). The acceptance criteria for all Compacted Clay Liner tests are included in the "Compacted Clay Liners (CCL's)" Section of the relevant stage Construction Specification/Design Report. The relevant stage reports for the reporting period have been provided: Central West Operations Manual Rev2.1 (Section 9.5). CW Charlie 2018 Design Report V4 (Section 6.3). CW Charlie Complete Works Report V2 (Appendix 1 CW Charlie Complete Works Construction Specification - Section 6.3). Section 6.3 of Appendix 1 - CW Charlie Complete Works Construction Specification from the CW Charlie Complete Works Report V2 checked and compliant for CCL. Additional acceptance criteria for subgrade in Section 6.2, protective rockfill layers in Section 6.4, Structural Fill in Section 6.5, etc. NOEF Monthly Construction Progress Reports prepared by the ICE state that for CW Charlie Flood Proofing works no quality documentation or test results have been submitted for review to date. | This condition is only relevant until 13Nov2020. These design reports were provided to the Department, with the ICE endorsement letters, prior to the commencement of construction (before the audit period). NOEF Monthly Construction Progress Reports April to November state "The CW Charlie Flood Proofing works are progressing well and appear to be at an acceptable quality, however no quality documentation or test results have been submitted for review to date. All installation documentation will require review and appropriate checks against the design once complete." The January, February report state there was no work on the flood levee due to the wet season. The March and April 2021 reports do not mention the flood levee. While this condition is no longer in the 13Nov20 Authorisation, the OFI is relevant to condition 48 and therefore is included in this audit. OFI: Provide evidence that test results for construction of Central West Charlie Flood Proofing works were in accordance with the relevant acceptance criteria. |
| 22.a.iii | 22.a.iii | | waste rock used for construction of the CWNOEF Charlie stage foundation, as outlined in the condition 1.J(ii)(10), meets the geochemical criteria for classification as benign; | | | | | | | | | | | 4 | Full Compliance | NOEF Construction Progress Report May 2020 dated July 2020. Peer Review of NOEF Monthly Construction Progress Reports: *July 2020 dated September 2020. *September 2020 dated December 2020. *November 2020 dated January 2021. *January 2021 dated August 2021. *February 2021 dated September 2021. *March 2021 dated October 2021. *April 2021 dated November 2021. CWC ICE Review Letter 20Aug2019 (before audit period). EMR 2020-2021. Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20 August 2019 states "The design report covers works associated with the placement of non-benign materials in the stage". Table 3 of EMR 2020-2021 includes OVERBURDEN EMPLACEMENT FACILITY WASTE SAMPLING FREQUENCIES. The number of samples undertaken did not appear to meet the standard quantity listed. However, Section 2.3.2 states "MRM operated in accordance with the January 2020 MMP following its authorisation on 10 August 2020 and 13 November 2020. The January 2020 MMP describes the MRM waste rock classification criteria." NOEF Monthly construction progress reports state "The MRM Operations Team is currently undertaking the emplacement of the overburden at the NOEF. The works include transportation and emplacement of specified materials in the correct locations, as per the design plans, and the construction of batters, wedges and advection barriers as required. The onsite laboratory also completed geochemical analysis of selected samples in order to compare to site specification requirements for material classification." | This condition is only relevant until 13Nov2020. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
Waste (general, mine rock, tailings)
Community (local indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

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|----------|----------|--|--|--|---|--|--|--|--|--|--|--|--|--|--|--|
| 22.a.iv | 22.a.iv | | results and reporting of testing undertaken to confirm alluvial materials placed at the CWNOEF would not generate AMD if exposed to water and were geotechnically suitable for the location they were placed; and | | | | | | | | | | | | NOEF Construction Progress Report May 2020 dated July 2020. Peer Review of NOEF Monthly Construction Progress Reports: *July 2020 dated September 2020. *September 2020 dated December 2020. *November 2020 dated January 2021. *January 2021 dated August 2021. * February 2021 dated September 2021. *March 2021 dated October 2021. *April 2021 dated November 2021. EMR 2020-2021. Table 3 of EMR 2020-2021 includes OVERBURDEN EMPLACEMENT FACILITY WASTE SAMPLING FREQUENCIES. The number of samples undertaken did not appear to meet the standard quantity listed. However, Section 2.3.2 states "MRM operated in accordance with the January 2020 MMP following its authorisation on 10 August 2020 and 13 November 2020. The January 2020 MMP describes the MRM waste rock classification criteria." NOEF Monthly construction progress reports state "The MRM Operations Team is currently undertaking the emplacement of the overburden at the NOEF. The works include transportation and emplacement of specified materials in the correct locations, as per the design plans, and the construction of batters, wedges and advection barriers as required. The onsite laboratory also completed geochemical analysis of selected samples in order to compare to site specification requirements for material classification." | This condition is only relevant until 13Nov2020. |
| 22.a.v | 22.a.v | | the construction of the foundation will not impede surface water and underdrainage systems ability to convey all water to the sediment trap. | | 1 | | | | | | | | | | Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020 Peer Review of NOEF Monthly Construction Progress Report September 2020 dated December 2020 EMR 2020- 2021 EMR 2020-2021 section 2.5.1 states "NOEF Central West (CW) stage: Continued construction of the MS-NAF Halo and advection barriers on the top face and stockpiling of materials on CW Alpha and Bravo; continued construction of CW Charlie stage as per OMP EIS methodology." | This condition is only relevant until 13Nov2020. |
| 22.b | 22.b | | concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12, and subject to Condition 18c, ensuring: | | | | | | | | | | | | Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020. Peer Review of NOEF Monthly Construction Progress Report September 2020 dated December 2020. Ongoing surveying of the surfaces to check for compliance to the design criteria was completed. | This condition is only relevant until 13Nov2020. |
| 22.b.i | 22.b.i | | Detailed designs follow the approved concept designs for CWNOEF and must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives. One of the construction hold points must include verification of PAF waste placement methodology; | | | | | | | | | | | | CWC ICE Review Letter 20Aug2019 (outside the audit period). Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 states: *"The design is consistent with the latest approvals that include the OMP EIS NOEF concepts." *"MRM shall ensure that all Hold Points identified in the specifications are signed off by GHD progressively as construction occurs." *"Importantly, GHD shall also be consulted in the preparation and endorsement of the following documentation as part of the ongoing management of the dump: -PAF cell and cover trial designs (including instrumentation provisions)". | Condition satisfied before the audit period. This condition is only relevant until 13Nov2020. |
| 22.b.ii | 22.b.ii | | The detailed designs must be reviewed and endorsed by an ICE without limitation on responsibility and provided to the department prior to commencement of construction; and | | | | | | | | | | | | CWC ICE Review Letter 20Aug2019 (outside the audit period). CWC ICE Review Letter 20Aug2019. Engineering Review of Northern Overburden Emplacement Facility (NOEF). Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 references the new conditions received on the 15Aug2019. Evidence of provision to Department, although before audit period. | Condition satisfied before the audit period. This condition is only relevant until 13Nov2020. |
| 22.b.iii | 22.b.iii | | Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ICE must provide a written response that justifies the existing design or proposes an alternate design to the satisfaction of the department. | | | | | | | | | | | | | This condition is only relevant until 13Nov2020. The Operator advised that no further reviews by independent experts have been undertaken and "the ICE did not request any changes to the detailed design for the CWNOEF between 10 August 2020 to 13 November 2020." |
| 23 | 23 | | During construction, and subject to Condition 18c, | | | | | | | | | | | | Refer to sub conditions | |
| 23.a | 23.a | | The Operator must ensure: | | | | | | | | | | | | Refer to sub conditions | This condition is only relevant until 13Nov2020. |
| 23.a.iv | 23.a.iv | | The Central West Charlie Sump is appropriately lined to receive AMD; and | | | | | | | | | | | | EMR 2019-2020 Section 2.5. EMR states "high density polyethylene (HDPE) lining of Central West Charlie Sump occurred." | This condition is only relevant until 13Nov2020. |
| 23.b | 23.b | | The 100 year ARI flood level mitigation system along the northern footprint of the structure is in place prior to the oncoming wet season; | | 1 | | | | | | | | | | EMR 2019-2020 Section 2.5. EMR section 2.5 states the following was undertaken: Flood protection: Construction of flood protection prior to the wet season at CW Charlie north face (100-year ARI); CW Charlie to EPROD (100-year ARI); EPROD to SEPROD (20-year ARI). | This condition is only relevant until 13Nov2020. |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|--|---|
| 24 | 24 | | An Independent Certifying Engineer (ICE) must warrant and accept both the design and construction works, without limitation on responsibility; | | | | | | | | | | | Refer to sub conditions | | Covered under condition 48 of the 13Nov2020 Authorisation and included here for context of subconditions. |
| 24.c | 24.c | | any material changes to the amendment must be approved by the ICE and the Department notified as soon as practicable; | | | | | | | 1 | | 1 | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. |
| 24.d | 24.d | | the frequency of the permeability testing be no less than 1 test per 10,000 cubic metres; | | | | | | | 1 | | 1 | N/A | Not Applicable | EMR 2020 - 2021. EMR 2020 - 2021 Table 7 shows that there was no CCL construction in Central West Charlie in the audit period. | This condition is only relevant until 13Nov2020. Operator advised no changes to CWNOEF Charlie stage. |
| CONSTRUCTION OF THE CENOEF | | | | | | | | | | | | | | | | |
| 25 | 25 | | The Operator must construct, operate and maintain the CENOEF in accordance with: | | | | | | | | | | | Refer to sub conditions | | |
| 25.a | 25.a | | Concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12, and subject to Condition 18d, ensuring: | | | | | | | 1 | | | 4 | Full Compliance | CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 04Apr2019 (before audit period). Central East Alpha/Bravo ITP Sighted 25May20 (CE_Alpha ITP Lot 4F Floor_Finished signoffs dated 23 and 24 June 2020). NOEF Central East CEA 2D Floor ITP signed 29Jul20 and 30Jul20 (CEA 2D ITP - complete). EMR 2020 - 2021. January 2019 MMP. Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report. "Designed in accordance with the Overburden Management Plan Environmental Impact Statement (OMP EIS), Variation of Authorisation 0059 (as amended) and approved Sustainable Development Mining Management Plan (2013 2015) (as amended) (MMP 2013 2015)." (before audit period and refers to superseded MMP). The EMR 2020 - 2021 does not mention compliance with the January 2019 MMP as it focuses on the January 2020 MMP. The January 2019 MMP is the relevant document until 13Nov2020. January 2019 MMP section 4.1 states "The MMP Amendment provides for the continuation of all activities previously approved under the 2013-2015 MMP for an additional 20 months from May 2019 to approximately December 2020, subject to production and waste emplacement rates." Therefore, for the purposes of this condition, the Independent Monitor considers design in accordance with 2013-2015 MMP to demonstrate compliance with January 2019 MMP. The Independent Monitor did not identify any inconsistencies with the January 2019 MMP CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 04Apr2019 CE Alpha Design Report version 2, 10Apr2019. ITP_CEA1_C001_PAFHC Week 03 Jan 17, 2021 to Jan 23, 2021 (after this condition is no longer relevant). Construction Hold Points are nominated in Appendix 1 CE Alpha Complete Works Construction Specification in the CE Alpha Design Report. The CE Alpha Design Report doesn't specify a hold point for verification of PAF waste placement methodology. However, the ICE is responsible and accountable for Approval of Construction QA/QC Plan and Methodology Statements. ITP_CEA1_C001_PAFHC Week 03 Jan 17, 2021 to Jan 23, 2021 signed by the ICE (after this condition is no longer relevant) includes sections relating to: * Advection Barrier Placement (previous lift or Zone) (Section 1) * Core Zone Placement (Section 2) * Advection Barrier Placement over the lift (Section 3). There was a hold point for the "Survey compliance for stage batters" related to Advection Barrier Placement (previous lift or Zone). There was no hold point on the ITP provided for "verification of PAF waste placement methodology" however, the ICE provided verification that the construction phase is adequate before non-benign placement was allowed, via the individual Cell ITPs. | This condition is only relevant until 13Nov2020. The Operator advised "Based on the Design Report and Construction Specification, Inspection and Test Plans (ITPs) are developed in conjunction with the ICE for the various components of the NOEF Construction. As constructed reports are only completed once an entire stage is complete, there are none currently required. In lieu of any as-constructed reports being required at this stage of the Project, ITP CE_Alpha ITP Lot 4F Floor_Finished (dated 25 May 2020) and CEA 2D ITP - complete has been provided to demonstrate verification by the ICE to confirm current construction has been undertaken in accordance with the MMP specifications." |
| 25.a.i | 25.a.i | | Detailed designs follow the approved concept designs CENOEF and must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives. One of the construction hold points must include verification of PAF waste placement methodology; | | | | | | | 1 | | | 4 | Full Compliance | CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 04Apr2019 CE Alpha Design Report version 2, 10Apr2019. ITP_CEA1_C001_PAFHC Week 03 Jan 17, 2021 to Jan 23, 2021 (after this condition is no longer relevant). Construction Hold Points are nominated in Appendix 1 CE Alpha Complete Works Construction Specification in the CE Alpha Design Report. The CE Alpha Design Report doesn't specify a hold point for verification of PAF waste placement methodology. However, the ICE is responsible and accountable for Approval of Construction QA/QC Plan and Methodology Statements. ITP_CEA1_C001_PAFHC Week 03 Jan 17, 2021 to Jan 23, 2021 signed by the ICE (after this condition is no longer relevant) includes sections relating to: * Advection Barrier Placement (previous lift or Zone) (Section 1) * Core Zone Placement (Section 2) * Advection Barrier Placement over the lift (Section 3). There was a hold point for the "Survey compliance for stage batters" related to Advection Barrier Placement (previous lift or Zone). There was no hold point on the ITP provided for "verification of PAF waste placement methodology" however, the ICE provided verification that the construction phase is adequate before non-benign placement was allowed, via the individual Cell ITPs. | This condition is only relevant until 13Nov2020. Detailed designs complete before the audit period. The placement methodology for PAF material is described in Sections '6.1.1.3. CORE ZONE – PAF (HC) AND MS-NAF' and '6.3 Wedge' of the CE Alpha Charlie Complete Works Report V2", detailing acceptable lift heights (designed to control particle size segregation) and advection barrier construction for this Zone. The ICE has endorsed this report in previously provided correspondence. The Operator advised "An example Responsible, Accountable, Consulted and Informed (RACI) table that is included in all detailed design reports is included in the condition 25ai folder (submitted as Appendix K with the January 2020 MMP). The RACI table describes the ICE as 'Responsible' and 'Accountable' for the release of the construction hold points and therefore verification of adequate construction of construction hold points from the ICE is required prior to PAF waste placement. MRM is to be 'Informed' of the release of construction hold points. The ICE verify that the construction phase is adequate before non-benign placement is allowed, via the individual Cell ITP. Operations cannot commence covering the CCL of a Cell without that Cell's ICE approved ITP, so that is a construction hold point prior to waste placement." The Operator advised "waste placement occurred: MS-NAF in BASE Zone for covering CCL – 15th June 2020 MS-NAF in Wedge (CORE Zone) – 26th June 2020 PAF(HC) in Wedge (CORE Zone) – 26th Nov 2020." |
| 25.a.iii | 25.a.iii | | The detailed designs must be reviewed and endorsed by an ICE without limitation on responsibility and provided to the department prior to commencement of construction; and | | | | | | | 1 | | 1 | 3 | Part Compliance (High) | CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 04Apr2019. CE Alpha Design Report version 2, 10Apr2019. No evidence that the ICE review was provided to DITT was provided and therefore this condition is a part compliance. | This condition is only relevant until 13Nov2020. The Operator advised "Note this condition was removed from the VOA as the NOEF Management Plan (which included a section on the NOEF Design & Construction Guidelines) was submitted and approved as part of the January 2020 MMP. As long as the individual stage designs adhere to the guidelines and principles set out on this document, then individual detailed designs are no longer required to be sent to the Department prior to commencement of construction. Instead the ICE provides their endorsement that the design is suitable for construction." No OFI is prepared as this condition or a related requirement is no longer part of the 13Nov2021 Authorisation. |
| 25.a.iv | 25.a.iv | | Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ICE must provide a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department. | | | | | | | 1 | | 1 | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. Operator advised that there was no review of the designs by independent experts requiring additional matters to be addressed. |
| 26 | 26 | | During construction, and subject to Condition 18d(i), | | | | | | | | | | | Refer to sub conditions | | |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|---|--|
| 26.a | 26.a | | The Operator must ensure: | | | | | | | | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020. |
| | 26.a.i | | PAF(RE) is placed in lift heights that minimises particle size segregation and creation of chimney structures, but must not exceed 2m; | 1 | | | | | | 1 | | | N/A | Not Applicable | ITP_CEA_R001_PAFRE_P1 - Week 08 - 21 Feb 2021 – 27 Feb 2021 signed by ICE 29Mar2021 (after audit period for this condition). ITP_CEA_R001_PAFRE_P1 - Week 08 - 21 Feb 2021 – 27 Feb 2021 signed by ICE 29Mar2021 "Hauling and Dumping of a 2m thick PAF(RE) layer" has the comment "PAFRE placement area on-going to - Witnessed" (after audit period for this condition). The Operator advised that the first PAF(RE) placement in the CE Stage didn't occur until 1Jan21 so this condition is N/A. | This condition is only relevant until 13Nov2020. The Operator advised that the first PAF(RE) placement in the CE Stage didn't occur until 1Jan21 so this condition is N/A. |
| 26.a.ii | 26.a.ii | | Advection barriers of appropriate thickness, moisture conditioned (if required), is placed at suitable intervals that disrupts formation of oxygen convection cycles. If the PAF(RE) cells are not finalised, a 1m thick compacted advection barrier must be placed prior to every wet season; | | | | | | | 1 | | | N/A | Not Applicable | ITP_CEA_R001_PAFRE_P1 - Week 08 - 21 Feb 2021 – 27 Feb 2021 signed by ICE 29Mar2021. (after audit period for this condition) ITP_CEA_R001_PAFRE_P1 - Week 08 - 21 Feb 2021 – 27 Feb 2021 signed by ICE 29Mar2021 "Confirm that the hauling, dumping and spreading of advection barrier has been completed" has the comment "CEA Alluvial spread for AF(RE) cell ongoing - witnessed." (after audit period for this condition). The Operator advised that the first PAF(RE) placement in the CE Stage didn't occur until 1Jan21 so this condition is N/A. | This condition is only relevant until 13Nov2020. The Operator advised that the first PAF(RE) placement in the CE Stage didn't occur until 1Jan21 so this condition is N/A. |
| 26.a.iii | 26.a.iii | | The 100 year ARI and 20 year ARI flood level mitigation systems along the eastern footprint of the structure is in place prior to the oncoming wet season. | | 1 | | | | | 1 | | | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. The condition ended before the wet season so it is N/A. |
| 27 | 27 | | An independent Certifying Engineer (ICE) must warrant and accept both the design and construction works, without limitation on responsibility: | | | | | | | | | | | Refer to sub conditions | | Included for context of subconditions. Parts of this condition are included in the 13Nov2020 Authorisation condition 48. |
| 27.a | 27.a | | During all phases of construction the ICE or approved delegate must be present at the CENOEF site to oversee and certify and be accountable that all materials and material testing undertaken, QA/QC procedures and construction methods used satisfy the design intent and meet all the design specifications and approve re-commencement of construction at defined hold points. Where tests conducted demonstrate non-compliance to the acceptance criteria, evidence of corrective action taken (such as re-working of materials and re-testing) must be provided in the final report (as per clause 27(g)); | | | | | | | 1 | | 1 | 4 | Full Compliance | CEA 3D ITP signed off by the ICE- Completed July 2020. MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020 Appendix B includes numerous Emerson tests from May to July 2020 and Table 1-1: Summary of GHD site presence as Independent QA Engineers that states that attendance was April 2020 - current (assumed 31 July) 4 days per week on site inspecting daily construction activities. For Central East Alpha Lot 3E it also includes a non conformance report related to CCL layer placed thicker than design tolerance of 500 (-0/+200m). The underlying cause of the non-conformance was listed as "Subgrade layer purposely left low to allow for GPS fluctuations on both machine and survey creating a thicker layer". A risk assessment was undertaken ("the maximum constructed layer thickness would be at worst 450mm") and deemed no reworking was required because: • As the excess thickness is on the batter, pooling won't occur and therefore won't be an issue. • The CCL has been constructed in 2 layers, and therefore there are 2 lines of defence in the unlikely event that there are issues with one of the layers. • Even in the improbable scenario of compaction slightly outside the 98% requirement, testing has shown that the CCL would likely still achieve well in excess of the required 1x10-9 m/s maximum permeability." The corrective action was a risk assessment was undertaken that identified that no reworking was required. | This condition is only relevant until 13Nov2020. |
| 27.d | 27.d | | including allowances for survey accuracy/tolerances, the post construction CCL thickness is not less than 500mm; | | | | | | | 1 | | 1 | 4 | Full Compliance | CEA 3D ITP - Complete July 2020 - Central East Alpha Lot 3E. MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020. MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020 includes in section 2.3.1.1 "The CCL was generally constructed in 2 x 300 mm compacted layers (the lower layer incorporating some sub-grade material into the CCL) aiming at an overall target thickness of 600 mm. The Specification tolerance allows for the CCL thickness to be a minimum 500 mm, -0 / + 200 mm, i.e. 500 – 700 mm." For Central East Alpha Lot 3E it also includes a non conformance report related to CCL layer placed thicker than design tolerance of 500 (-0/+200m). The underlying cause of the non-conformance was listed as "Subgrade layer purposely left low to allow for GPS fluctuations on both machine and survey creating a thicker layer". A risk assessment was undertaken ("the maximum constructed layer thickness would be at worst 450mm") and deemed no reworking was required because: • As the excess thickness is on the batter, pooling won't occur and therefore won't be an issue. • The CCL has been constructed in 2 layers, and therefore there are 2 lines of defence in the unlikely event that there are issues with one of the layers. • Even in the improbable scenario of compaction slightly outside the 98% requirement, testing has shown that the CCL would likely still achieve well in excess of the required 1x10-9 m/s maximum permeability." | ITP includes ICE signoff for 500mm thickness for CCL. The ITP successfully identified monitoring of construction within the tolerance range for the CCL. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
Waste (general, mine rock, tailings)
Community (local Indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|---|--|
| 27.e | 27.e | | the frequency of the CCL permeability testing be no less than 1 test per 10,000 cubic metres; | | | | | | | 1 | | 1 | 4 | Full Compliance | CE CCL Testing Summary 9Oct20 CEA 3D ITP - Complete July 2020 CE CCL Testing Summary 9Oct20 showed that 10 tests were required and 12 were undertaken for Central East Basal CCL. CEA 3D ITP - Complete July 2020 includes 1 test per 10,000m3. | This condition is only relevant until 13Nov2020. |
| Construction of the NOEF | | | Construction of the NOEF has occurred in stages. Conditions placed on construction of the various stages has been subject to change with the issuing of variations of Authorisation incorporating conditions appropriate for that point in time. | | | | | | | | | | | | | Commentary only |
| | | 52 - previously 18 changed | From the date of authorisation of the Overburden Management Project, the Operator is approved to construct, operate and maintain the following stages for permanent placement of Waste Rock in the NOEF: | | | | | | | 1 | | | 4 | Full Compliance | EMR 2020-2021. DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) DITT Site Inspection Report dated 3Feb2021 stated "Construction of the NOEF, comprising waste placement continued in the Central West NOEF stage during the inspection (Plate 16). Adam Hatfield described the approved PAF waste placement techniques at NOEF that comprised placement of PAF (RE) in 2 m rises, while all other material was placed in 7 m rises. All rises were separated by a 100 mm advection barrier. This placement method is consistent with the Authorisation." and "Non-benign waste stockpiles were also observed on the Central East (CE) NOEF stage. These stockpiles were yet to be profiled as part of the final waste placement in the CE NOEF stage." and "The drone footage additionally indicated the CE stage, overall, is being heavily worked for future waste rock placement, with basal wedge layer construction in progress to direct runoff towards the Eastern Perimeter Runoff Dam (EPROD)". | Operator advised no waste has been placed outside of the approved areas (refer condition 52 and 55). The Independent Monitor did not find any other areas of waste placement in the EMR 2020 - 2021. Refer to Table 6: Waste Dumping During the Reporting Period in EMR 2020-2021. |
| | | 52.a | West A, B, C and D; | | | | | | | 1 | | | | - | | Compliance scored under condition 52. |
| | | 52.b | CW (alpha, bravo and charlie); | | | | | | | 1 | | | | - | | Compliance scored under condition 52. |
| | | 52.c | CE (alpha and bravo); | | | | | | | 1 | | | | - | | Compliance scored under condition 52. |
| | | 52.d | SE; | | | | | | | 1 | | | | - | | Compliance scored under condition 52. |
| | | 52.e | NW; | | | | | | | 1 | | | | - | | Compliance scored under condition 52. |
| | | 52.f | NE. | | | | | | | 1 | | | | - | | Compliance scored under condition 52. |
| | | 53 | The Operator must develop the NOEF Stages defined in Condition 52 in accordance with Concept designs presented in the approved MMP. | | | | | | | 1 | | | 4 | Full Compliance | Letter from GHD to Operator subject Engineering Review of NOEF Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report CE ICE Report dated 4Apr2019 (before audit period). Central East Alpha/Bravo ITP Sighted 25May20 (CE_Alpha ITP Lot 4F Floor_Finished signoffs dated 23 and 24 June 2020). NOEF Central East CEA 2D Floor ITP signed 29Jul20 and 30Jul20 (CEA 2D ITP - complete). Peer Review of NOEF Monthly Construction Progress Report July 2020. MRM Inspection and Test Plan (ITP) Week 14 Apr. 11 – Apr. 17, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNNHC Week 15). MRM Inspection and Test Plan (ITP) Week 16 Apr. 16 – Apr. 24, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNNHC Week 16). EMR 2020-2021. Peer Review of NOEF Monthly Construction Progress Report September 2020. Operator advised that if consistent with OMP it will be consistent with MMP concept design as they the same. Section 2.5.2 of the EMR states "The CE stage was constructed as per the OMP EIS methodology and consistent with the approved MMP." Peer Review of NOEF Monthly Construction Progress Report July 2020 in section 6 states "Based on the daily site inspections and observations, investigations and geotechnical testing results, it is the opinion of GHD that the Central East expansion is being constructed in accordance with the specifications and design intent." Peer Review of NOEF Monthly Construction Progress Report September 2020 in section 5.2 states "All works completed in this reporting period are within the design intent." | Letter from GHD to Operator subject Engineering Review of NOEF Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report dated 4Apr2019 is from before the audit period but states "Designed in accordance with the Overburden Management Plan Environmental Impact Statement (OMP EIS), Variation of Authorisation 0059 (as amended) and approved Sustainable Development Mining Management Plan (2013 2015) (as amended) (MMP 2013 2015)." The Operator advised "Based on the Design Report and Construction Specification, Inspection and Test Plans (ITPs) are developed in conjunction with the ICE for the various components of the NOEF Construction. For the Foundation Development (i.e. Basal CCL construction), the area is broken up into a number of "Cells", and an ITP is completed for each Cell (examples completed during audit period are Lot 4F Floor and 2D floor - corresponding evidence of ICE sign is in CE_Alpha ITP Lot 4F Floor_Finished and CEA 2D ITP - complete). For the operational works (ie construction of the waste facility above the basal CCL), ITPs for the various components of the NOEF are developed, and relevant areas' ITPs updated and signed off on a weekly basis" (example "MRM Inspection and Test Plans (ITPs) (ITP_CEB1_B001_MSNNHC Week 15 and ITP_CEB1_B001_MSNNHC Week 16). Monthly construction reports produced by the ICE detailed construction works completed, non-conformances and key issues identified." |
| | | 54 | During construction of the NOEF, the Operator must ensure: | | | | | | | | | | | Refer to sub conditions | | |
| | | 54.a | engagement of the ICE consistent with Condition 48; | | | | | | | 1 | | 1 | 4 | Full Compliance | Peer Review of NOEF Monthly Construction Progress Report December 2020 | Refer to condition 48 for further detail of compliance. |
| | | 54.b | waste rock management requirements complies with Condition 51. | | | | | | | 1 | | | 4 | Full Compliance | Peer Review of NOEF Monthly Construction Progress Report December 2020 | Refer to condition 51 for further details of compliance. |
| Remaining Waste Rock Management Facilities | | | From the date of authorisation of the Overburden Management Project, temporary placement of non-benign waste is authorised for the following: | | | | | | | | | | | Refer to sub conditions | | Refer to table in EMR 2020-2021 |
| | | 55.a | EOEF (except for PAF(RE)); stockpiles on NOEF, SOEF and WOEF; | | | | | | | 1 | | | N/A | Not Applicable | | Future item. Scheduled for development 2022/2023 |
| | | 55.b | | | | | | | | 1 | | | 4 | Full Compliance | EMR 2020-2021. EMR 2020-2021 table 6 shows no waste dumping at SOEF or WOEF. There is dumping on the NOEF stockpile. EMR 2020-2021. | Advised by the Operator that SOEF and WOEF are no longer active and there is no intention to reactivate. SOEF and WOEF are located within the mine levee wall. SOEF has a dedicated sump. |
| | | 55.c | ROM Pad; | | | | | | | 1 | | | 4 | Full Compliance | EMR 2020- 2021 section 2.5.3 states "The WOEF forms the base of the ROM pad and is, therefore, in constant use. Minor amounts of waste may be used to adjust ramps and drainage as stockpile sizes and shapes evolve over time. The WOEF will continue to be used as the ROM stockpile for crusher feed materials." Ore is considered non-benign waste. | |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
 Surface Water (River, Creek, Artificial dams)
 Marine Waters (Bing Bong, marine sediments)
 Groundwater
 Aquatic fauna (fish river)
 Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
 Waste (general, mine rock, tailings)
 Community (local indigenous & public)
 Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | | | | |
|-----------------------------------|--------------------|---|--|--|--|--|--|--|--|--|-----|-------------------------|---|--|---|
| | 55.d | any other location approved by Department in writing. | | | | | | | | | N/A | Not Applicable | EMR 2020-2021. EMR 2020- 2021 section 2.5.3 states "The WOEF forms the base of the ROM pad and is, therefore, in constant use. Minor amounts of waste may be used to adjust ramps and drainage as stockpile sizes and shapes evolve over time. The WOEF will continue to be used as the ROM stockpile for crusher feed materials." Ore is considered non-benign waste. | Operator advised the Independent Monitor that there are no other areas approved by the Department in writing. The Independent Monitor did not find any other areas of waste placement in the EMR 2020 - 2021. | |
| | 56 | The Operator must ensure that non-benign wastes temporarily placed outside of NOEF have: | | | | | | | | | | Refer to sub conditions | | | |
| | 56.a | suitable water management structure (e.g. drains and sumps) are in place to contain and manage poor quality drainage in accordance with the approved MMP; | | | | | | | | | | 4 | Full Compliance | EMR 2020-2021. 2020-2021 Site Water Balance Forecast Report ROM pad located above the WOEF so water reports to the open pit or nearby sumps. Independent Monitor confirmed EMR 2020- 2021 section 2.5.3 states "The WOEF forms the base of the ROM pad and is, therefore, in constant use. Minor amounts of waste may be used to adjust ramps and drainage as stockpile sizes and shapes evolve over time. The WOEF will continue to be used as the ROM stockpile for crusher feed materials." | ROM pad only during the audit period. The Operator advised "2020-2021 Site Water Balance Forecast Report provided in condition folder. The report describes the water management system at the McArthur River Mine and presents a site-wide water balance for the four-year period between 2020 and 2024. The forecast water balance takes into account recent changes to the mine water management system and current water inventories. All ROM/Mill area runoff end at Van-Duncans Dam (OP VDD) or Petes Pond (OP PP), Mill CRP (Mill Concentrator runoff pond), Mill APP (Anti Pollution Pond), Mill ORS (Old ROM Sump) or Mill OSD (Mill Old Stores Dam), where it then forms part of MRM's water management system (refer to page 24 of the Site Water Balance Report for further details)." |
| | 56.b | installed water diversion structures that allows segregation of mine-affected drainage from non-mine affected drainage; | | | | | | | | | | 4 | Full Compliance | EMR 2020-2021. 2020-2021 Site Water Balance Forecast Report. Water Management Plan ROM pad all considered mine affected water. The Water Management Plan discusses structures that collect water from the WOEF ROM Pad. | ROM pad only during the audit period. Site configuration and water management figures for ROM pad are Figure 2.1. |
| | 56.c | monitoring and management measures, in accordance with the AMP, are implemented to ensure environmental objectives defined in the approved MMP are satisfied; | | | | | | | | | | 4 | Full Compliance | Operator advised that water is captured in the water management system and either treated before discharge offsite so included in monitoring program in AMP. Included in artificial surface water program. | |
| | 56.d | non-benign wastes are removed and managed at cessation of mining in accordance with the approved MMP; | | | | | | | | | | N/A | Not Applicable | | Future item as cessation of mining has not occurred. |
| | 56.e | in the event of unplanned closure, non-benign wastes are removed and managed in accordance with the approved MMP; | | | | | | | | | | N/A | Not Applicable | | Future item as there have been no unplanned closures. |
| | 56.f | oversight provided by ICE as per Condition 48. | | | | | | | | | | N/A | Not Applicable | | Condition 48 is referring construction and not applicable to the ROM pad. |
| Ore Processing and Milling | | | | | | | | | | | | | | | |
| | 57 - previously 39 | Surface water management infrastructure associated with the lead filtration facility at the Mine must be suitably designed and constructed to contain a 100 year ARI rainfall event. | | | | | | | | | | N/A | Not Applicable | | Future item. January 2020 MMP mentioned as future work. Operator advised that this has not proceeded at this stage. |
| | 58 | From the date of authorisation of the Overburden Management Project, the Operator is authorised to expand the ore processing and associated milling and storage facilities in accordance with concepts and management systems detailed in the approved MMP including: | | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.a | ensuring the structures to be developed are suitably designed and constructed to allow management of poor quality drainage in accordance with the Water Management Plan that is generated from the construction and future operation of the structures; | | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.a.i | construction and development of Gypsum Plant; | | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.a.ii | construction and development of Caustic Facility; | | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.a.iii | construction and development of Reagent Mixing Facility; | | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.a.iv | construction and development of Copper Mud Facility; | | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.a.v | construction and development of Lead Concentrate Storage Facility; | | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.a.vi | expansion of the concentrate storage shed and use of external hardstand area; | | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.b | Wastes generated from the operation of the Gypsum Plant must be managed in accordance with Condition 63. | | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
 Surface Water (River, Creek, Artificial dams)
 Marine Waters (Bing Bong, marine sediments)
 Groundwater
 Aquatic fauna (fish river)
 Vegetation & Rehabilitation (terrestrial, diversion & NOEFF)
 Waste (general, mine rock, tailings)
 Community (local Indigenous & public)
 Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| Water Management and Storage | | | | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEFF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|------------------------------|----------|----------------------------|---|---|---|---|-------------|----------------------------|--|--------------------------------------|---------------------------------------|------------------------|-------|------------------------|---|---|
| 36 | 36 | | Dewatering activities as part of pit development and borefield development for beneficial use must be metered to allow determination of parameters for assessment of extraction volumes and aquifer sustainability | | | | 1 | | | | | 1 | 3 | Part Compliance (High) | Monthly groundwater abstraction spreadsheet May 2020 - April 2021. WMS Report - 1Aug2020. WMS Report - 01Nov2020. WMS Report - 20Dec2020 (from after this condition was obsolete). WMS Report- 7Apr2021 (from after this condition was obsolete). PI data for seepage trench and fed bore. Operator advised bores are metered. MUDS are a series of bores that site around the pit. Aquifer sustainability is irrelevant because the groundwater ends up in the pit. Dewatering activities as part of pit development and borefield development are captured in daily WMS reports and monthly groundwater abstraction report (examples provided in condition folder). Groundwater metered pumping data is also provided. The Operator advised "Abstraction assessments are currently being completed as part of MRM's water extraction licence applications." Monthly groundwater abstraction spreadsheet May 2020 - April 2021 includes bore fields, interception trench and MUDS for the audit period. Water Management Plan 2020 Table 9: Groundwater Borefield Description showed that Wiki borefield was not metered. The Operator advised "At the time of writing the January 2020 WMP it was identified that the TSF Wiki Bores required flow meters to be installed. Flow meters were installed during 2020, which is reflected in the March 2020 WMP amendment." | This condition is only relevant until 13Nov2020. No OFI has been provided as the Water Management Plan March 2021 shows that the borefields are now metered and this condition does not remain in the 13Nov2020 Authorisation. |
| 37 | 37 | | Water storage structures into which the Operator places or directs AMD must be designed, constructed and managed by the Operator to minimise to as low as reasonably practicable contaminants entering the Receiving Environment. In this regard: | | | | | | | | | | | | Refer to sub conditions | This condition is only relevant until 13Nov2020. This condition is identical in 13Nov2020 Authorisation but is included here for one subcondition that is no longer in the 13Nov2020 Authorisation. |
| 37.a | 37.a | | the water storage structures into which the Operator is authorised to place or direct AMD whilst they continue to meet the requirements of this condition are as follows: | | 1 | | | | | | | | | | Refer to sub conditions | This condition is only relevant until 13Nov2020. This condition is identical in 13Nov2020 Authorisation but is included here for one subcondition that is no longer in the 13Nov2020 Authorisation. |
| 37.a.ii | 37.a.ii | | Southern Perimeter Sediment Runoff Dam (SPD); | | 1 | | | | | | | | N/A | Not Applicable | | Combined into SPROD in 2018 based on comment in WMP 2020 Table 8. |
| 38 | 38 | | The Operator must not transfer water to or discharge water from any water storage structure until water quality analysis has been received and interpreted by the Operator and results confirm the water is suitable for the destination, having regard to the requirements of this document and the MMP and any other relevant restrictions on transfer or discharge of water within or from the Mine. In this regard: | | 1 | | | | | | | | | | Refer to sub conditions | This condition is covered as condition 65 in the 13Nov2020 Authorisation and is included in the audit for context related to a sub condition. |
| 38.d | 38.d | | The Operator must ensure: | | | | | | | | | | | | Refer to sub conditions | This condition is covered as condition 69 in the 13Nov2020 Authorisation and is included in the audit for context related to a sub condition. |
| 38.d.vii | 38.d.vii | | total loads of analytes (including lead and zinc) from all controlled discharge activities entering McArthur River must be measured at location SW06. | | 1 | | | 1 | | | | 1 | N/A | Not Applicable | Monthly Discharge Monitoring Report – December 2020. Monthly Discharge Monitoring Report – January 2021. Monthly Discharge Monitoring Report – February 2021. Monthly Discharge Monitoring Report – March 2021. Discharge Spreadsheet (2020-21 Waste Discharge Records and Loads Tracking). There were no discharge events in the audit period before 13Nov2021 so monitoring was not required. This condition is therefore not applicable. | This condition is only relevant until 13Nov2020. Note 13 Nov2020 condition 69 allows for an alternative site to SW06, if agreed by the Department (therefore this condition is retained in this audit). |
| | | 59 - previously 35 changed | Until the AMP (including Environmental Management Plans and sub-plans) is approved by the Department in writing, the Operator must prepare, review and include the following for each MMP and where appropriate each MMP amendment, a Water Management Plan which includes: | | | | | | | | | | N/A | Not Applicable | | Future item. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |
| | | 59.a - previously 35.a | modelling of surface water at and around the Mine; | | 1 | | | | | | | 1 | N/A | Not Applicable | | Future item. AMP is not approved. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |
| | | 59.b - previously 35.b | a whole of Mine water balance which takes account of the modelling of surface water; | | 1 | | 1 | | | | | 1 | N/A | Not Applicable | | Future item. AMP is not approved. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |
| | | 59.c - previously 35.c | calibration of the modelling of surface water to confirm its accuracy; | | 1 | | | | | | | 1 | N/A | Not Applicable | | Future item. AMP is not approved. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |
| | | 59.d - previously 35.d | a written plan detailing how water at the Mine will be managed for the forthcoming wet season; | | 1 | | 1 | | | | | 1 | N/A | Not Applicable | | Future item. AMP is not approved. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |
| | | 59.e - previously 35.e | a plan of actions which will be undertaken to reduce the risk of any releases from AMD storage structures; | | 1 | | | | | | | 1 | N/A | Not Applicable | | Future item. AMP is not approved. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |
| | | 59.f - previously 35.f | a plan of actions, including engineers' reporting schedules, which will be undertaken to ensure the structural integrity of all AMD storage structures; | | 1 | | | | | | | 1 | N/A | Not Applicable | | Future item. AMP is not approved. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEFF) | Waste (general, mine rock, tailings) | Community (local indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|---|---|---|-------------|----------------------------|--|--------------------------------------|---------------------------------------|------------------------|-------|------------------|--|--|
| | | 59.g - previously 35.g | a plan of actions which will be undertaken to ensure seepage from AMD storage structures is minimised including, where required, timelines for repairing damaged or installing new seepage management infrastructure. | | 1 | | 1 | | | | | | 1 | N/A | Not Applicable | Future item. AMP is not approved. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |
| | | 60 | From the date of authorisation of the Overburden Management Project, water-related activities involving interfering with waterway and water extraction must be undertaken in accordance with the Water Act 1992, and where required, appropriate licenses/approvals are obtained from the responsible agency prior to commencement of the works. The Operator must ensure: | | 1 | | | | | | | | | N/A | Not Applicable | The Operator advised that they are in the process of obtaining the water extraction licenses and that there is correspondence regarding exemptions if water extractions were approved as part of an MMP process. The Operator advised that there was no interference with waterways in the audit period in addition to their exemption. 31 January 2020 MMP was prior to the water act amendments and there is a transitional period of exemptions. |
| | | 60.a | activities involving disturbance must not commence until required studies and/or trials to inform future design, construction and/or operation, as detailed in the approved MMP, are completed; | | 1 | | | | | | | | 1 | N/A | Not Applicable | Barney Creek low flow gauge (Section 5.1.7.3 in MMP) has not been constructed. |
| | | 60.b | works are conducted in accordance with a valid AAPA certificate; | | 1 | | | | | | | 1 | N/A | Not Applicable | Operator advised no interference with waterways in the audit period. | |
| | | 60.c | detailed designs, where nominated in the approved MMP, are developed and implemented in consultation with required experts, including but not limited to ecology, engineering and any other experts as appropriate; | | 1 | | | | | | | | 1 | N/A | Not Applicable | Operator advised no interference with waterways in the audit period. The Operator advised that there has been no construction of the Barney Creek low flow gauge (Section 5.1.7.3 in MMP) and it has not progressed. |
| | | 60.d | regular inspections and maintenance are undertaken to ensure design objectives continue to be satisfied. | | 1 | | | | | | | | 1 | N/A | Not Applicable | Operator advised no interference with waterways in the audit period. |
| | | 61 | The Operator must complete translocation of the Purple-crown Fairy Wren in accordance with the approved MMP, prior to commencement of works on the Old McArthur River Channel plug. | | | | | | 1 | | | | | 4 | Full Compliance | McArthur River Purple-crown Fairy Wren (<i>Malurus coronatus macgillivrayi</i>) Translocation Program Progress Report September - November 2020. McArthur River Purple-crown Fairy Wren (<i>Malurus coronatus macgillivrayi</i>) Translocation Program Progress Report September - November 2020. The Operator advised that work on the Old McArthur River Channel plug had not commenced. The Operator advised "The report details the actions taken in accordance with the approved Translocation Plan, including pre-translocation assessment, capture and movement of the birds and post-translocation monitoring, conducted during September and November 2020. The translocation of the birds was conducted September 2020." |
| | | 62 - previously 69 | The Operator must erect and maintain warning signage that: | | | | | | | | | | | | Refer to sub conditions | |
| | | 62.a | is permanent and weatherproof; | | | | | | | | | | 1 | 4 | Full Compliance | Warning Signage Inspection 2020 (memo dated 11Nov2020). Warning Signage Inspection 2020 photographs show the warning signage appears sturdy and permanent in nature. |
| | | 62.b | contains specific wording agreed to by the Chief Health Officer of the Northern Territory; | | | | | | | | | | 1 | 4 | Full Compliance | Letter dated 04Feb2015 to Chief Health Officer from Operator. Letter dated 04Feb2015 to Chief Health Officer from Operator advising of the agreed wording to be used on signage. |
| | | 62.c | is located: | | | | | | | | | | | | Refer to sub conditions | |
| | | 62.c.i | at appropriate distances and frequency along the waterway; | | | | | | | | | | 1 | 4 | Full Compliance | Warning Signage Inspection 2020 (memo dated 11Nov2020). Signage appears to be installed at appropriate distances and frequency based on the Warning Signage Inspection 2020. |
| | | 62.c.ii | as a minimum at all access points, including but not limited to crossings, vehicle tracks and walking tracks. | | | | | | | | | | 1 | 4 | Full Compliance | Warning Signage Inspection 2020 (memo dated 11Nov2020). Signage appears to be located at all access points, including but not limited to crossings, vehicle tracks and walking tracks based on aerial photography and the warning signage inspection 2020. |
| | | 62.c.iii | along the length of: | | | | | | | | | | | | Refer to sub conditions | |
| | | 62.c.iii.a | Barney Creek downstream to its junction with the McArthur River; | | | | | | | | | | 1 | 4 | Full Compliance | Warning Signage Inspection 2020 (memo dated 11Nov2020). Operator Warning Signage photos (memo dated 11Nov2020) viewed confirming no access signage is in place in all locations. Location 40 appears to be at the junction. |
| | | 62.c.iii.b | Barney Creek upstream to a point a short distance upstream of where the Carpentaria Highway crosses Barney Creek; | | | | | | | | | | 1 | 4 | Full Compliance | Warning Signage Inspection 2020 (memo dated 11Nov2020). Operator Warning Signage photos (memo dated 11Nov2020) viewed confirming no access signage is in place in all locations. |
| | | 62.c.iii.c | Surprise Creek to approximately the location of SW29; | | | | | | | | | | 1 | 4 | Full Compliance | Warning Signage Inspection 2020 (memo dated 11Nov2020). Operator Warning Signage photos (memo dated 11Nov2020) viewed confirming no access signage is in place in all locations. Location 44 is the approximate location of SW29. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEFF)
Waste (general, mine rock, tailings)
Community (local indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | | | | |
|--|--------------------|--|--|--|--|--|--|--|--|--|---|-----|-------------------------|---|---|
| | 62.c.iii.d | Bing Bong shipping channel and in the immediate area surrounding the shipping channel and the swing basin. | | | | | | | | | 1 | 3 | Part Compliance (High) | Warning Signage Inspection 2020 (memo dated 11Nov2020). Warning Signage Inspection 2020 showed signage is located at each land entry point to the BBLF, which surround the water access. However, there was no evidence of signage along the length of the shipping channel and in the immediate area surrounding the shipping channel and swing basin. | OBS: Consider signage on the Nathan River Resources loading facility boundary fence line as operational activities recommenced in 2021. OFI: Correspond with DITT about the intent of this condition and specifically the impracticality of locating signage along the length of the shipping channel and in the immediate area surrounding the shipping channel and swing basin. |
| | 63 | Wastes generated from operation of the Water Treatment Plant and Gypsum Plant must be disposed: | | | | | | | | | | | Refer to sub conditions | | No action but included for context of the subconditions. |
| | 63.a | in accordance with concepts and management systems detailed in the approved MMP, ensuring: | | | | | | | | | 1 | N/A | Not Applicable | | Future item. Water treatment plant has not been operational during the audit period and the gypsum plant is not constructed. |
| | 63.a.i | trials for the permanent disposal of Gypsum Plant and Water Treatment Plant wastes must be undertaken to inform final material placement; | | | | | | | | | 1 | N/A | Not Applicable | | Future item. Water treatment plant has not been operational during the audit period and the gypsum plant is not constructed. |
| | 63.a.ii | the ITRB or an approved qualified and experienced independent third party endorse the waste disposal strategy, if the wastes are to be placed in the TSF; or | | | | | | | | | 1 | N/A | Not Applicable | | Future item. Water treatment plant has not been operational during the audit period and the gypsum plant is not constructed. |
| | 63.a.iii | the ICE or an approved qualified and experienced independent third party endorse the waste disposal strategy, if the wastes are to be placed in the NOEF. | | | | | | | | | 1 | 1 | N/A | Not Applicable | Future item. Water treatment plant has not been operational during the audit period and the gypsum plant is not constructed. |
| | 64 - previously 37 | Water storage structures into which the Operator places or directs AMD must be designed, constructed and managed by the Operator to minimise to as low as reasonably practicable contaminants entering the Receiving Environment. In this regard the water storage structures into which the Operator is authorised to place or direct AMD whilst they continue to meet the requirements of this Condition are as follows: | | | | | | | | | | | 3 | Part Compliance (High) Water management plan 31Jan2020 (including TARPS in Appendix B) Water storage infrastructure master list dated 30/04/2021 Apr20-Apr21_GroundWater Data EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 Geotechnical Inspection Procedure Version 3, Date 14/4/2020 TSF Cell 1 decant pond and TSF Cell 2 decant pond are listed in the Water storage infrastructure master list dated 30/04/2021 with AMD but are not listed in this condition. The Independent Monitor considers AMD in the TSF is approved via other conditions. Open pit footwall quarry sump and open pit K stage sump are listed in the water storage infrastructure master list dated 30/04/2021 with AMD but are not listed in this condition Inspections - BB Water Management - CW Charlie Sump inspection - EPROD Inspection - Lake Archer Inspection - MIA Sump Inspection - Mill CRP Sump Inspection - Pete's Pond Inspection - Pond 2 Inspection - SEPROD Inspection - WPROD Inspection | The Operator advised that all structures report to the water management system so they do not discharge to the receiving environment and there is numerous groundwater monitoring at various locations around structures. The Operator advised that no water storage structures were constructed during the audit period. The Operator advised "No AMD water was placed or transferred into structures not listed in Condition 64 during the reporting period. AMD water is only stored or transferred into MRM's AMD approved storage structures (dams, sumps etc..)." OFI: Update the water storage infrastructure master list related to the open pit footwall quarry sump and open pit K stage sump if they do not contain AMD or request DITT amend the condition to include these additional storages. |
| | 64.a | Southern Perimeter Runoff Dam (SPROD) – includes the footprint previously attributed to the Southern Perimeter Sediment Runoff Dam; | | | | | | | | | | | 4 | Full Compliance | Included in the water storage infrastructure master list dated 30/04/2021 with seepage management of CCL + HDPE, groundwater management of VWP + underdrain and geotechnical inspection monthly (dry) or fortnightly (wet) and visual inspections bi-weekly (wet) or monthly (dry). EMR 2020-2021 table 21. |
| | 64.b | South East Perimeter Runoff Dam (SEPROD); | | | | | | | | | | | 4 | Full Compliance | Included in the water storage infrastructure master list dated 30/04/2021 with seepage management of CCL, groundwater management of VWP + underdrain and geotechnical inspection monthly (dry) or fortnightly (wet). EMR 2020-2021 table 21. |
| | 64.c | Western Perimeter Runoff Dam (WPROD); | | | | | | | | | | | 4 | Full Compliance | Included in the water storage infrastructure master list dated 30/04/2021 with seepage management of CCL + HDPE, groundwater management of VWP + underdrain, geotechnical inspection monthly (dry) or fortnightly (wet) and visual inspections bi-weekly (wet) or monthly (dry). EMR 2020-2021 table 21 |
| | 64.d | Eastern Perimeter Runoff Dam (EPROD); | | | | | | | | | | | 4 | Full Compliance | Included in the water storage infrastructure master list dated 30/04/2021 with seepage management of CCL + HDPE, groundwater management of VWP + underdrain and geotechnical inspection monthly (dry) or fortnightly (wet). EMR 2020-2021 table 21 |
| | 64.e | Central West A Sump (CWAS); | | | | | | | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections and the EMR 2020-2021 table 21. Water storage infrastructure master list dated 30/04/2021 stated "to be decommissioned dry season 2021." |
| | 64.f | Central West C Sump (CWCS); | | | | | | | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections and the EMR 2020-2021 table 21. |
| | 64.g | Anti-Pollution Pond (APP); | | | | | | | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. EMR 2020-2021 table 23. |
| | 64.h | Concentrator Runoff Pond (CRP); | | | | | | | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. EMR 2020-2021 table 23. |
| | 64.i | Van Duncan's Dam (VDD); | | | | | | | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. EMR 2020-2021 table 22. |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

| Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---------------|---|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|------------------------|--|---|
| 64.j | Pete's Pond (PP); | | 1 | | | | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. EMR 2020-2021 table 22. | |
| 64.k | Lake Archer (LA); | | 1 | | | | | | | | 4 | Full Compliance | DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) DITT Site Inspection Report dated 3Feb2021 "Key activities approved under the Authorisation issued 13 November 2020 and observed during the inspection included: * lining of Lake Archer" Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. EMR 2020-2021 table 22. | |
| 64.l | Old Stores Dam (OSD); | | 1 | | | | | | | | 3 | Part Compliance (High) | Not mentioned in the EMR or water storage infrastructure master list. The Water Management Plan states that OSD has a HDPE liner and a storage capacity of 0.6 ML. There was insufficient documentation or records available at time of the audit to demonstrate that Old Stores Dam was designed, constructed and managed in accordance with the condition or that it is not in use for AMD storage. | OFI: Update the water storage infrastructure master list for Old Stores Dam, North East Sump and Central East Bravo Sump to include relevant information and retain evidence of any inspections. |
| 64.m | Pond 2 (P2); | | 1 | | | | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. EMR 2020-2021 table 21. | |
| 64.n | Central East 1 Sump (CE1S); | | 1 | | | | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. | |
| 64.o | East Drain Sump (EDS); | | 1 | | | | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. EMR 2020-2021 table 21. | |
| 64.p | West D Sump (WDS); | | 1 | | | | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. The Operator advised "The SOEF Sump, West D Sump, and West A sump were cleaned out and lined with HDPE during the reporting period, photos are available in EMR Section 2.5.2." EMR 2020-2021 table 21. | |
| 64.q | Mine Infrastructure Area Sump (MIAS); | | 1 | | | | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections and the EMR 2020-2021 table 21. | |
| 64.r | West A Sump (WAS); | | 1 | | | | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. The Operator advised "The SOEF Sump, West D Sump, and West A sump were cleaned out and lined with HDPE during the reporting period, photos are available in EMR Section 2.5.2." EMR 2020-2021 table 21. | |
| 64.s | North East Sump (NES); | | 1 | | | | | | | | 3 | Part Compliance (High) | Not mentioned in the EMR, water storage infrastructure master list or Water Management Plan. There was insufficient documentation or records available at time of the audit to demonstrate that North East Sump was designed, constructed and managed in accordance with the condition or that it is not in use for AMD storage. | OFI: Refer condition 64.l above. |
| 64.t | North West Sump (NWS); | | 1 | | | | | | | | N/A | Not Applicable | | The Operator advised that this storage structure does not exist yet. |
| 64.u | NE Stilling Basin (NESB); | | 1 | | | | | | | | N/A | Not Applicable | | The Operator advised that this storage structure does not exist yet. |
| 64.v | Central East Alpha Sump (CEAS); | | 1 | | | | | | | | N/A | Not Applicable | | The Operator advised that this storage structure does not exist yet. |
| 64.w | Central East Bravo Sump (CEBS); | | 1 | | | | | | | | 3 | Part Compliance (High) | Not mentioned in the EMR, water storage infrastructure master list or Water Management Plan. There was insufficient documentation or records available at time of the audit to demonstrate that Central East Bravo Sump was designed, constructed and managed in accordance with the condition or that it is not in use for AMD storage. | OFI: Refer condition 64.l above. |
| 64.x | South Stilling Basin (SSB); | | 1 | | | | | | | | N/A | Not Applicable | | The Operator advised that this storage structure does not exist yet. |
| 64.y | South Overburden Emplacement Facility Sump (SOEF Sump); | | 1 | | | | | | | | 4 | Full Compliance | The Operator advised "The SOEF Sump, West D Sump, and West A sump were cleaned out and lined with HDPE during the reporting period, photos are available in EMR Section 2.5.2." SOEF is included in Table 1 of the Geotechnical Inspection Procedure. | OBS: Add South Overburden Emplacement Facility Sump to the water storage infrastructure master list. |
| 64.z | Low-grade Sump (LGS); | | 1 | | | | | | | | N/A | Not Applicable | | The Operator advised that this storage structure does not exist yet. |
| 64.aa | Rice Paddies Pond (RPP); | | 1 | | | | | | | | N/A | Not Applicable | | The Operator advised that this storage structure does not exist yet. |
| 64.bb | Bing Bong Site Runoff Pond 1 (BBSRP1); | | 1 | 1 | | | | | | | 4 | Full Compliance | BBSRP routine visual inspection form (BB Water Management). Included in the Water storage infrastructure master list dated 30/04/2021 with HDPE lining and groundwater monitoring is undertaken to monitor the receiving environment (Apr20-Apr21_GroundWater Data). BBSRP routine visual inspection form (BB Water Management) example dated 07/06 demonstrates visual inspections are undertaken and the form has correct prompts and had relevant environmental and structural comments. | OBS: Noting that the date on the provided BBSRP routine visual inspection form (BB Water Management) was 07/06, suggest the team be asked to fill in the forms completely (e.g. include the date in full: date, month and year and sign forms). |
| 64.cc | Bing Bong Site Runoff Pond 2 (BBSRP2); | | 1 | 1 | | | | | | | 4 | Full Compliance | BBSRP routine visual inspection form (BB Water Management). Included in the Water storage infrastructure master list dated 30/04/2021 with HDPE lining and groundwater monitoring is undertaken to monitor the receiving environment (Apr20-Apr21_GroundWater Data). BBSRP routine visual inspection form (BB Water Management) example dated 07/06 demonstrates visual inspections are undertaken and the form has correct prompts and had relevant environmental and structural comments. | |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
Waste (general, mine rock, tailings)
Community (local Indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments | |
|---|---|---|--|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|------------------|---|---|---|
| | | 64.dd | Bing Bong Site Runoff Pond 3 (BBSRP3). | | 1 | 1 | | | | | | | 4 | Full Compliance | BBSRP routine visual inspection form (BB Water Management). Included in the Water storage infrastructure master list dated 30/04/2021 with HDPE lining and groundwater monitoring is undertaken to monitor the receiving environment (Apr20-Apr21_GroundWater Data). BBSRP routine visual inspection form (BB Water Management) example dated 07/06 demonstrates visual inspections are undertaken and the form has correct prompts and had relevant environmental and structural comments. | | |
| Water Transfer and Discharge | | | | | | | | | | | | | | | | | |
| | 65 - previously 38 | | The Operator must not transfer water to or discharge water from any water storage structure until: water quality analysis has been received and interpreted by the Operator; | | | | | | | | | | | | Refer to sub conditions | | |
| | | 65.a | | | 1 | | | | | | | | 1 | 4 | Full Compliance | PRO-2200035 Waste Discharge Procedure (in Water Management Plan) Example Weekly Water Quality Reviews provided: - 22 November 2020 - 12 January 2021 - 17 February 2021. Water quality analysis and interpretation was seen in the example weekly water quality reviews provided. Weekly Water Quality Review 12 January 2021 stated "This review presents a summary of water quality data from natural surface waters, the underground water storage, mine water storages and discharge source waters collected on 2 and 3 January." | The Operator advised "Environment provides the water quality information in a weekly summary and the projects and water department make the decision on what is suitable to send where." The weekly review presents a summary of water quality data from natural surface waters, the underground water storage, mine water storages and discharge source waters collected." |
| | | 65.b | results confirm the water is suitable for the destination, having regard to the requirements of this document, the approved MMP and any other relevant restrictions on transfer or discharge of water within or from the Mine. | | 1 | | | | | | | | 4 | 4 | Full Compliance | PRO-2200035 Waste Discharge Procedure (in Water Management Plan) Example Weekly Water Quality Reviews provided: - 22 November 2020 - 12 January 2021 - 17 February 2021. The results demonstrated compliance. | The Operator advised "Environment provides the water quality information in a weekly summary and the projects and water department make the decision on what is suitable to send where." The weekly review presents a summary of water quality data from natural surface waters, the underground water storage, mine water storages and discharge source waters collected." |
| | | 66 - previously 38 | The Operator is authorised to undertake works to release water from WMD to Little Barney Creek in accordance with previous approvals as defined in Schedule B. | | 1 | | | | | | | | 4 | 4 | Full Compliance | Water Management Plan 2020. Water Management Plan 2020 section 3.8.1 "In addition, pursuant to the Mining Management Act (NT) in the VOA 0059, MRM is authorised for managed releases of waste water at the WMD into the Little Barney Creek via the WMD Release Point (WMD RP). This release point is also shown on Figure 12." | There was no evidence of any releases of water from WMD to Little Barney Creek that would not be in accordance with previous approvals as defined in Schedule B. |
| | | 67 - previously 38 | From the date of authorisation of the Overburden Management Project, water releases are authorised from the following points: < Authorised Release Points, Receiving Water Body, Latitude, Longitude > *WMD, Little Barney Creek, -16.42635, 136.0693 *Mine Levee Release Point (MLRP), Barney Creek Diversion, -16.42743, 136.1114 *South-East Levee 1 Release Point (SEL1 RP), Barney Creek Diversion, -16.42394, 136.1082 *McArthur River Diversion Channel Release Point[11], McArthur River Diversion, -16.43468, 136.1207 | | 1 | | | | | | | | 4 | 4 | Full Compliance | EMR 2020 - 2021. EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21. EMR 2020 - 2021 Section 4.1.3 states "Table 24 presents the releases from the Mine Levee Discharge Point(s) (MLDP), South-East Levee Discharge Point (SEL1 DP) and the Water Management Dam Release Point (WMD RP) to the McArthur River between 1 May 2020 and 30 April 2021. A total of approximately 2,037.7 ML was released from the authorised discharge and release points during the reporting period. This included approximately: • 711.3 ML via the MLDP (from TSF WMD and OP P2); • 18.0 ML via the SEL1 DP (from NOEF SEL1); and • 1,308.4 ML via the WMD RP (from the TSF WMD siphons). Managed releases from the MLDP and SEL1 DP were undertaken in accordance with conditions of Waste Discharge Licence (WDL) 174-11. Managed releases from the WMD RP were undertaken in accordance with conditions of MRM's Variation of Authorisation 0059." EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 executive summary states "Over the reporting period, approximately 711.3 ML, 18.0 ML and 1,308.4 ML of mine water was released via the MLDP (from TSF WMD and OP P2), the SEL1 DP (from NOEF SEL1) and the WMD RP (from the TSF WMD siphons), respectively. The total volume of water release to the McArthur River was approximately 2037.7 ML." | OBS: Ensure consistency between the naming of the release points in the Authorisation and those used in the Water Management Plan and EMR (i.e. WMD RP to Little Barney Creek rather than McArthur River). McArthur River Diversion Channel Release Point[11], McArthur River Diversion, -16.43468, 136.1207 is not constructed yet. The Operator is preparing an amendment to the WDL to add this new location so that it discharges directly into the McArthur River (improvement opportunity as dilution occurs instantaneously). Water Management Plan 2020 section 3.8.1 "In addition, pursuant to the Mining Management Act (NT) in the VOA 0059, MRM is authorised for managed releases of waste water at the WMD into the Little Barney Creek via the WMD Release Point (WMD RP). This release point is also shown on Figure 12." |
| | | 68 | The Operator must: | | | | | | | | | | | | Refer to sub conditions | | |
| | | 68.a | ensure all offsite water discharges are undertaken in accordance with a valid WDL; | | 1 | | | | | | | | 4 | 4 | Full Compliance | WDL174-11. | Based on the IM's audit of the WDL, the offsite water discharges have been undertaken in accordance with a valid WDL (WDL174-11). WDL174-11 ended on 28 April 2021 and the new licence WDL174-12 commenced outside the audit period on 25 May 2021. While there was not a WDL in place for the final days of the audit period, there were no discharges undertaken and therefore this condition is compliant. |
| | | 68.b | only release water for offsite discharge from the WDL approved points; | | 1 | | | | | | | | 4 | 4 | Full Compliance | Email from Operator to Department subject MRM November 2020 VOA Conditions 59 and 68 dated 24Nov2020. Email from Department to Operator subject RE MRM November 2020 VOA Conditions 59 and 68 dated 30Nov2020. The Operator sought clarification of the intent of Condition 68b via email correspondence. Email from Operator to Department subject MRM November 2020 VOA Conditions 59 and 68 dated 24Nov2020 stated "We interpret MRM's Water Management Dam (WMD) Siphons Release Point to be an onsite water release/transfer point. This view is shared by DEPWS, as confirmed in our meeting with them in October 2020 where they advised we would not need to include it in our upcoming WDL renewal or amendment application(s) as it was not relevant for the Waste Discharge Licence." Email from Department to Operator subject RE MRM November 2020 VOA Conditions 59 and 68 dated 30Nov2020 stated "I have discussed this with the delegate (Director Mining Operations), and we all agree with MRM's interpretation for Conditions 59 and 68, as outlined below." | The Operator sought clarification of the intent of Condition 68b via email correspondence. Email from Operator to Department subject MRM November 2020 VOA Conditions 59 and 68 dated 24Nov2020 stated "We interpret MRM's Water Management Dam (WMD) Siphons Release Point to be an onsite water release/transfer point. This view is shared by DEPWS, as confirmed in our meeting with them in October 2020 where they advised we would not need to include it in our upcoming WDL renewal or amendment application(s) as it was not relevant for the Waste Discharge Licence." Email from Department to Operator subject RE MRM November 2020 VOA Conditions 59 and 68 dated 30Nov2020 stated "I have discussed this with the delegate (Director Mining Operations), and we all agree with MRM's interpretation for Conditions 59 and 68, as outlined below." |

Authorisation Compliance Workbook - Operator

15 Aug 2019
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Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEFF)
Waste (general, mine rock, tailings)
Community (local indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

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|--|--|----------------------|---|--|--|--|--|--|--|--|---|---|-------------------------|---|---|--|--|
| | | 68.c - previously 38 | interpret and report all data and results acquired as part of the activity in the Operator's Annual Environmental Mining Report; | | | | | | | | 1 | 4 | Full Compliance | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 section 6.5 states "Based on the review of surface water quality monitoring data between 1 May 2020 and 30 April 2021, MRM continue to implement effective controls to minimise the risk of environmental harm of downstream receiving waters due to Mine operations. The review concluded that the beneficial uses and community values of the McArthur River continue to be protected from potential mining derived impacts. There were no mine derived SSTV exceedances or non-compliances recorded at the SW11 compliance point in the McArthur River during the reporting period. The SSTV exceedances recorded at SW11 during the reporting period were unrelated to mine activities and were a result of natural river processes and contributions from sources upstream of the Mine." | | | |
| | | 68.d - previously 38 | evaluate the performance of this activity in terms of its effectiveness as a management tool; | | | | | | | | 1 | 4 | Full Compliance | EMR 2020 - 2021. EMR 2020 - 2021 - Appendix R Surface Water Monitoring Annual Report 2020-21. EMR 2020 - 2021 introduction "The presentation and discussion of results in this EMR is used to determine whether or not these management actions are effective, and that the Mine maintains compliance with the relevant approval conditions." Environmental Monitoring Report - Appendix R Surface Water Monitoring Annual Report 2020-21 Section 6.5 states "Based on the review of surface water quality monitoring data between 1 May 2020 and 30 April 2021, MRM continue to implement effective controls to minimise the risk of environmental harm of downstream receiving waters due to Mine operations. The review concluded that the beneficial uses and community values of the McArthur River continue to be protected from potential mining derived impacts. There were no mine derived SSTV exceedances or non-compliances recorded at the SW11 compliance point in the McArthur River during the reporting period. The SSTV exceedances recorded at SW11 during the reporting period were unrelated to mine activities and were a result of natural river processes and contributions from sources upstream of the Mine." EMR 2020 - 2021 states in section 6 "In consideration of all monitoring results for the reporting period, the performance required to protect the downstream beneficial uses and community values of the McArthur River continues to be achieved (Plate 35), and the current monitoring and management measures being implemented are appropriate, with the recommended additional measures to further reduce the risk associated with lead fallout." | | | |
| | | 68.e - previously 38 | by 30 June 2020, characterise total loads of mine-derived contaminants from all source inputs for the 2017-2018 period consistent with Condition 16.b), unless otherwise agreed in writing by the Department. | | | | | | | | 1 | 4 | Full Compliance | Email from Operator to Department subject MRM Variation of Authorisation Condition (38c); 2017-2018 Mine -Derived Loads dated 8 May 2020. 220508 MRM-DPIR_Condition 38 mine-derived loads. Attachment A - 2017-18 Mine Derived Analyte Loads Assessment. | | | |
| | | 69 - previously 38 | The Operator must in relation to the WMD release point to Little Barney Creek undertake: | | | | | | | | | | Refer to sub conditions | | | | |
| | | 69.a | release activity that minimises localised erosion, and utilises suitable energy dissipation and flow spreader structures (e.g. rock basin) and be monitored daily during release events; | | | | | | | | | | 4 | Full Compliance | WMD Release Point Checklist spreadsheet template. EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 The WMD Release Point Checklist spreadsheet includes a prompt to advise if "rock basin erosion is controlled". Figure 4.11 - WMD RP inspection summary, at WMD RP depicts the erosion checking for 21 out of 21 release days. | The Operator advised that there is a rock structure to dissipate energy and piped to rock structure. Daily inspection at time of release from WMD into Little Barney, which is included in the WMD Release Point Checklist spreadsheet template "During discharge - daily inspection of the rock basin at the release point to ensure erosion is being suitably controlled". | |
| | | 69.b | remediation in the event of unacceptable erosion occurring at the Carpentaria Highway culvert system to the satisfaction of the Department of Infrastructure, Planning and Logistics and the Department; | | | | | | | | | | N/A | Not Applicable | | Operator advised no erosion identified during the audit period. Silt accumulates under the Carpentaria Highway culvert from upstream (discharge from site is not high is sediment) and so there is removal as required from the culvert. Given the audit period ends 30 April 2021, the 2021 assessment falls into the next audit period. | |
| | | 69.c | a cross-section profile survey immediately up-stream and down-stream of the Carpentaria Highway crossing, prior to and following each wet season; | | | | | | | | | | 1 | 4 | Full Compliance | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 includes as Appendix E - Little Barney Creek geomorphic characteristics (this appendix is Geomorphic characteristics of Little Barney Creek 2020 memorandum dated 19 November 2020 from wrm water + environment to the Operator). EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 Section 4.4.7 states "Appendix E -presents a review of Little Barney Creek geomorphic characteristics downstream of WMD RP. This assessment was undertaken in accordance with conditions of the VoA. The findings of this assessment included: • little to no erosion occurred in the vicinity of the Little Barney Creek culvert crossing and therefore it is expected that no major geomorphic changes have occurred as a result of any authorised discharge from the WMD RP; and • There have been no significant changes in the Little Barney Creek channel with little to no bed erosion along the length of the channel since 2018." Geomorphic characteristics of Little Barney Creek 2020 memorandum uses available aerial and ground survey data from October 2018, August 2019 and August 2020 to review Little Barney Creek at the following two locations: *The Carpentaria Highway culvert crossing of Little Barney Creek *The reach between the Carpentaria Highway and Barney Creek. This provides a review annually during the dry season (i.e. following one wet season and prior to the next). The Independent Monitor confirms that cross sections as required by this condition were included. Given the audit period ends 30 April 2021, the 2021 assessment would fall into the next audit period. | |

Authorisation Compliance Workbook - Operator

15 Aug 2019
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Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEFF)
Waste (general, mine rock, tailings)
Community (local indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | |
|--|--------|--|---|--|--|--|--|--|---|---|----------------------------|---|
| | 69.d | each wet season quantification of any significant changes to creek morphology as function of time by documenting at a minimum morphology prior to first water release, and following the last water release. This could be achieved, for example, using a drone survey of the drainage system between the flow outlet and Barney Creek Diversion using a consistent flight path, with the resulting image overlaid on appropriately sized grid (e.g. 2.5 x 2.5 m); | 1 | | | | | | 1 | 4 | Full Compliance | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 includes as Appendix E - Little Barney Creek geomorphic characteristics (this appendix is Geomorphic characteristics of Little Barney Creek 2020 memorandum dated 19 November 2020 from wrm water + environment to the Operator). EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 Section 4.4.7 states "Appendix E -presents a review of Little Barney Creek geomorphic characteristics downstream of WMD RP. This assessment was undertaken in accordance with conditions of the VoA. The findings of this assessment included: • little to no erosion occurred in the vicinity of the Little Barney Creek culvert crossing and therefore it is expected that no major geomorphic changes have occurred as a result of any authorised discharge from the WMD RP; and • There have been no significant changes in the Little Barney Creek channel with little to no bed erosion along the length of the channel since 2018." Geomorphic characteristics of Little Barney Creek 2020 memorandum "Based on the available aerial photography and LiDAR ground survey information there has been no significant change to the Little Barney Creek channel bed and banks downstream of the WMDRP. On this basis, any discharges from the WMDRP undertaken since 2018 has not resulted in a significant change in geomorphic characteristics of Little Barney Creek." Following the 2020 wet season was yet to be undertaken at the time of the audit period. |
| | 69.e | measure and record flow duration, flow rate and volume of all water released from WMD into Little Barney Creek; | 1 | | | | | | 1 | 4 | Full Compliance | Monthly Discharge Monitoring Report – December 2020 Monthly Discharge Monitoring Report – January 2021 Monthly Discharge Monitoring Report – February 2021 Monthly Discharge Monitoring Report – March 2021 Discharge Spreadsheet (2020-21 Waste Discharge Records and Loads Tracking). The Discharge Spreadsheet (2020-21 Waste Discharge Records and Loads Tracking) includes: *Daily discharge start and finish times *Avg Flow Rate (L/s) daily *Total Discharged (ML) daily. |
| | 69.f | ensure all evidence of continuous flow in Little Barney Creek along the length of the drainage system between WMD release outlet and Little Barney Creek Diversion Channel is available for inspection; | 1 | | | | | | 1 | 4 | Full Compliance | WMD Release Point Checklist spreadsheet 2020-2021. WMD Release Point Checklist spreadsheet template. EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 WMD Release Point Checklist spreadsheet template includes "During discharge - daily inspection (and evidence) off flow along the drainage line between the end of the Little Barney Creek Diversion Channel and the Little Barney Creek Culvert (see map tab)". Figure 4.11 – WMD RP inspection summary, at WMD RP depicts the observable flow checking for 21 out of 21 release days. |
| | 69.g | ensure the surface water monitoring schedule for the activity includes SW06, which must be assessed for identical parameters as defined for SW03. At monitoring points SW03 and SW06: | 1 | | | | | | 1 | 4 | Full Compliance | MRM Environmental Monitoring Schedule 2021. MRM Environmental Monitoring Schedule 2020 (2019-20 MRM Environmental Monitoring Schedule 1001 Rev2). WMD Release Point Checklist spreadsheet 2020-2021. The Environmental Monitoring Schedule 2019/2020 shows that SW06 is sampled for all of the parameters that SW03 is, plus some additional parameters. Monitoring is required at SW03 and SW06 "weekly with flow at the sample point" in MRM Environmental Monitoring Schedule 2020. MRM Environmental Monitoring Schedule 2021 has removed the requirement to monitor at SW03, which seems inconsistent with this condition. SW06 remains sampled for the same parameters as the 2019/2020 monitoring schedule. |
| | 69.g.i | Field parameters must also be measured daily during water release from WMD into Little Barney; | 1 | | | | | | 1 | 2 | Part Compliance (moderate) | Upon Discharge Surface Water Sampling field sheets for December (20Dec2020, 22Dec2020, 25Dec2020 and 30Dec2020). WMD Release Point Checklist spreadsheet 2020-2021. NSW spreadsheet of sampling results Monthly Discharge Monitoring Report – December 2020 EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 Section 4.4.4 states "The potential downstream impacts of releases from WMD RP was investigated in accordance with conditions of the VoA. This included: • Investigating the recorded water quality at SW03 and SW06 (or SW20 when SW06 was not available) during days when releases occurred;" and figure 4.9 shows "WMD RP inspection summary, at downstream locations (SW03, SW06/SW20)". Upon Discharge Surface Water Sampling field sheets provided for December show that SW06 is listed/sampled but do not appear to include SW03. However, the spreadsheet of results provided has days for field results that do not include SW06 but include SW20. NSW spreadsheet provided shows no monitoring at SW06 on 25Dec20 or 26Dec20 when discharge was occurring. It does show results for SW20 and SW03. Monthly Discharge Monitoring Report – December 2020 includes discharges from WMD RP from 25Dec20 to 28Dec20 and 30Dec20 to 1Jan21. The daily discharge form for 22Dec20 and 25Dec20 appear to have notations that some sampling was undertaken on 23Dec20 and 27Dec20 instead. Daily sampling data appears to be incomplete. The WMD Release Point Checklist spreadsheet 2020 - 2021 shows some instances of SW03 not being sampled and SW19 or SW20 being sampled in lieu of SW06. |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
 Surface Water (River, Creek, Artificial dams)
 Marine Waters (Bing Bong, marine sediments)
 Groundwater
 Aquatic fauna (fish river)
 Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
 Waste (general, mine rock, tailings)
 Community (local indigenous & public)
 Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | | | | |
|--|------------------------------|---|--|--|--|--|--|--|--|---|-----|-------------------------|--|--|---------------------------------------|
| | 69.g.ii | The surface water monitoring analytical suite must include thallium, boron and cobalt; | | | | | | | | 1 | 4 | Full Compliance | MRM Environmental Monitoring Schedule 2021. MRM Environmental Monitoring Schedule 2020 (2019-20 MRM Environmental Monitoring Schedule 1001 Rev2). Monthly Discharge Monitoring Report – December 2020. Analytical results in the Monthly Discharge Monitoring Report – December 2020 for SW06 for 21Dec2020 included Thallium, Boron and cobalt. The Environmental Monitoring Schedules for 2019-2020 and 2021 also included those analytes. However, SW03 appears to no longer be included in the MRM Environmental Monitoring Schedule 2021. However, the spreadsheet of results do still include SW03 for the relevant discharges. | OBS: SW03 does not appear to be included in the Operator's Environmental Monitoring Schedule 2021. Noted it is removed from WDL174-12. | |
| | 69.g.iii | The surface water monitoring be continued for a further two weeks following completion of the release activities for the season or until field parameters have returned to baseline levels; | | | | | | | | 1 | 4 | Full Compliance | WMD Release Point Checklist spreadsheet. MRM Environmental Monitoring Schedule 2021. MRM Environmental Monitoring Schedule 2020 (2019-20 MRM Environmental Monitoring Schedule 1001 Rev2). Monthly Discharge Monitoring Report – December 2020 EMR 2020 - 2021 – Appendix R Surface Water Monitoring Annual Report 2020-21. WMD Release Point Checklist spreadsheet 2020-2021. WMD Release Point Checklist spreadsheet states "Following commencement of discharge for the season - daily field readings at SW03 and SW06 for a further two weeks or until field parameters have returned to baseline levels". EMR 2020 - 2021 – Appendix R Surface Water Monitoring Annual Report 2020-21 section 4.4.5 states "Release event 9 (March 2021): o During the release event, water quality was recorded at SW03 and SW06/20 for 9 of the 9 release days. o Following the release event, water quality at the downstream locations was recorded daily for the 2 weeks following completion of release activities for the season in accordance with the VnA." | OBS: The WMD Release Point Checklist spreadsheet states "Following commencement of discharge for the season - daily field readings at SW03 and SW06 for a further two weeks or until field parameters have returned to baseline levels". However, potentially it should be referring to "following the end of discharge for the season..." | |
| | 69.h | Measure total loads of analytes (including lead and zinc) from all controlled discharge activities entering McArthur River at location SW06 or an alternate location as agreed by the Department; | | | | | | | | 1 | 4 | Full Compliance | MRM Environmental Monitoring Schedule 2021. MRM Environmental Monitoring Schedule 2020 (2019-20 MRM Environmental Monitoring Schedule 1001 Rev2). Monthly Discharge Monitoring Report – December 2020 Monthly Discharge Monitoring Report – January 2021 Monthly Discharge Monitoring Report – February 2021 Monthly Discharge Monitoring Report – March 2021 The monitoring schedules list total metals, including lead and zinc, should be measured at SW06 when discharge is expected to reach this sampling location (in addition to weekly sampling when there is a flow). In addition the Monthly Discharge Monitoring Reports showed that the analyses were conducted. | | |
| | 69.i | Interpret the data acquired as part of the activity and its effectiveness and report in the Operator's Annual EMR in accordance with Condition 9. | | | | | | | | 1 | 4 | Full Compliance | EMR 2020 -2021 introduction. EMR 2020 - 2021 – Appendix R Surface Water Monitoring Annual Report 2020-21. EMR 2020 -2021 introduction "The presentation and discussion of results in this EMR is used to determine whether or not these management actions are effective, and that the Mine maintains compliance with the relevant approval conditions." Environmental Monitoring Report – Appendix R Surface Water Monitoring Annual Report 2020-21 Section 6.5 states "Based on the review of surface water quality monitoring data between 1 May 2020 and 30 April 2021, MRM continue to implement effective controls to minimise the risk of environmental harm of downstream receiving waters due to Mine operations. The review concluded that the beneficial uses and community values of the McArthur River continue to be protected from potential mining derived impacts. There were no mine derived SSTV exceedances or non-compliances recorded at the SW11 compliance point in the McArthur River during the reporting period. The SSTV exceedances recorded at SW11 during the reporting period were unrelated to mine activities and were a result of natural river processes and contributions from sources upstream of the Mine." | | |
| | 70 | The Operator is authorised to undertake water management trial in accordance with: | | | | | | | | | | Refer to sub conditions | | Future item. No trials have occurred. | |
| | 70.a | concepts detailed in the approved MMP, ensuring the trial is designed to manage and control all impacted surface water runoff in accordance with the Water Management Plan: | | | | | | | | | | N/A | Not Applicable | | Future item. No trials have occurred. |
| | 70.a.i | Irrigation of Treated Water – Open Woodland Irrigation; | | | | | | | | | | N/A | Not Applicable | | Future item. No trials have occurred. |
| | 70.a.ii | Irrigation of Treated Water – Phytoremediation; | | | | | | | | | | N/A | Not Applicable | | Future item. No trials have occurred. |
| | 70.a.iii | Lowering of surface water elevations – Evapotranspiration; | | | | | | | | | | N/A | Not Applicable | | Future item. No trials have occurred. |
| | 70.a.iv | Sulfate Treatment System – Passive engineered wetland; | | | | | | | | | | N/A | Not Applicable | | Future item. No trials have occurred. |
| | 70.a.v | Sulfate Treatment System – Active Bioreactor; | | | | | | | | | | N/A | Not Applicable | | Future item. No trials have occurred. |
| | 70.b | Detailed designs, where nominated in the approved MMP, are developed in accordance with the concepts outlined in the approved MMP, and endorsed by relevant independent third party, prior to construction. | | | | | | | | | | N/A | Not Applicable | | Future item. No trials have occurred. |
| | 71 | At the conclusion of the trials in Condition 70, the Operator must apply in writing to the Department for approval of full-scale implementation. | | | | | | | | 1 | N/A | Not Applicable | | Future item. No trials have occurred. | |
| | 72 - previously 40 changed | Water management using the Centre Pivot Irrigator is authorised: | | | | | | | | | | Refer to sub conditions | | Centre Pivot Irrigator was not in use in the audit period (is yet to be relocated to mine levee). | |
| | 72.a - previously 40 changed | within the Mine Levee in accordance with concept previously approved, as defined in Schedule B; | | | | | | | | | | N/A | Not Applicable | Centre Pivot Irrigator was not in use in the audit period (is yet to be relocated to mine levee). | |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|--|---|---|--|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|--|---|
| | | 72.b - previously 40 changed | adjacent to the TSF in accordance with concept presented in the approved MMP; | | 1 | | | | | | | | N/A | Not Applicable | | Centre Pivot Irrigator was not in use in the audit period (is yet to be relocated to mine levee). |
| | | 72.c - previously 40 changed | to be configured to maximise evaporation and minimise surface spray drift, surface runoff and infiltration into underlying natural soils. | | 1 | | | | | | | | N/A | Not Applicable | | Centre Pivot Irrigator was not in use in the audit period (is yet to be relocated to mine levee). |
| Perimeter Run-Off Dams - SPROD, SEPROD, WPROD and EPROD | | | | | | | | | | | | | | | | |
| | | 73 | The Operator is approved to develop SPROD and SEPROD in accordance with relevant documents defined in Schedule B; | | 1 | | | | | | | | N/A | Not Applicable | | Operator advised that SPROD and SEPROD were in use in the audit period but were constructed prior to the audit period. |
| | | 74 | The Operator is authorised to complete works to construct EPROD and WPROD in accordance with following: | | | | | | | | | | | Refer to sub conditions | | |
| | | 74.a | EPROD: | | | | | | | | | | | Refer to sub conditions | | |
| | | 74.a.i - previously 43 | as previously approved and defined in Schedule B, ensuring that only benign material be used in the construction of the western embankment wall; | | 1 | | | | | | | | 4 | Full Compliance | Working Draft - Eastern Perimeter Runoff Dam Construction Report November 2021. The Working Draft EPROD Construction Report Section 4.4 "Western Embankment Construction NAF rockfill" demonstrates the western embankment wall was constructed with only benign materials. | The Operator advised that EPROD is yet to be fully commissioned. |
| | | 74.b | WPROD: | | | | | | | | | | | Refer to sub conditions | | |
| | | 74.a.i | CWNOEF and NOEF West D Amendment, as defined in Schedule B; and | | 1 | | | | | | | | N/A | Not Applicable | Western Perimeter Runoff Dam Construction and Commissioning Report (37649_Western PAF Runoff Dam As-Constructed Report_GHD_Rev0_170714). WPROD was completed in 2017. | Completed before the audit period. WPROD was completed in July 2017 (before the audit period commenced) and Independent Monitor sighted a completion report dated 14Jul2017. |
| | | 74.a.ii | WPROD and Western Surface Water Management Design Update (GHD Memo), as defined in Schedule B. | | 1 | | | | | | | | N/A | Not Applicable | Western Perimeter Runoff Dam Construction and Commissioning Report (37649_Western PAF Runoff Dam As-Constructed Report_GHD_Rev0_170714). WPROD was completed in 2017. | Completed before the audit period. WPROD was completed in July 2017 (before the audit period commenced) and Independent Monitor sighted a completion report dated 14Jul2017. |
| | | 75 - previously 44 for EPROD | The Operator must construct EPROD and WPROD in accordance with the following regime in the event groundwater dewatering is necessary: | | | | | | | | | | | Refer to sub conditions | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.a - previously 44 for EPROD | six hourly monitoring of field parameters for the first 24 hours of dewatering. Should parameters not stabilise during the first 24 hours then six hourly monitoring must continue until stabilisation has occurred; | | 1 | | 1 | | | | | 1 | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.b - previously 44 for EPROD | field parameters must be taken daily following the first 24 hour period. Should parameters change more than 20% then the frequency must increase to every 12 hours until parameters have stabilised; | | 1 | | 1 | | | | | 1 | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.c - previously 44 for EPROD | field parameters must include pH, specific electrical conductivity (SEC), temperature, REDOX and dissolved oxygen; | | 1 | | 1 | | | | | 1 | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.d - previously 44 for EPROD | water samples must be taken and analysed at the commencement of dewatering at the end of the first 24 hours, and then weekly sampling and analysis of dewatering water for the remainder of the construction; | | 1 | | 1 | | | | | 1 | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.e - previously 44 for EPROD | additional sampling and analysis must be undertaken if there is a substantial change in field parameters (approximately 30%); | | 1 | | 1 | | | | | 1 | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.f - previously 44 for EPROD | analysis must include: specific electrical conductivity (SEC), major ions (Ca, K, Mg, Na, Cl, CO3, HCO3 and SO4), Al, As, Cd, Co, Cu, Fe, Mn, Ni, Pb, Se and Zn; | | 1 | | 1 | | | | | 1 | N/A | Not Applicable | | Note that Pb was not required in the previous Authorisation versions (44.f). The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.g - previously 44 for EPROD | field parameters and samples for analysis must be taken from the dewatering source, not the receiving storage; | | 1 | | 1 | | | | | 1 | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.h - previously 44 for EPROD | if flow meters fail, then dewatering must cease until they are repaired or replaced; | | 1 | | 1 | | | | | 1 | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.i - previously 44 for EPROD | field water quality parameters, flow meter volumes and laboratory analysis must be submitted to Department on a monthly basis; | | 1 | | 1 | | | | | 1 | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.j - previously 44 for EPROD | any indication of fracturing and/or caverns (Karstification/dissolution features) must be recorded during logging along with water strikes and estimated yields during drilling; | | 1 | | 1 | | | | | 1 | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.k - previously 45 for EPROD | Construction reports including QA and QC data endorsed by the ICE must be provided to the Department prior to commencement of operation within 30 days of construction being completed. | | | | | | | | | 1 | N/A | Not Applicable | | Condition 75 and its subconditions (including 75k) are N/A as there was no dewatering. The intent of subcondition 75k is for the submission of construction reports within 30 days of construction completion, irrespective of whether dewatering has occurred. |
| 45 | 45 | | Construction reports including QA and QC data endorsed by the Independent Certifying Engineer (ICE) must be provided to the Department prior to commencement of operation within 30 days of construction being completed | | | | | | | | | 1 | 3 | Part Compliance (High) | Email DITT to Operator subject MRM - Commissioning of EPROD dated 20Mar 2020. DITT approved early operation of EPROD based on correspondence listed above stating "Given that ICE has identified the pit can be dewatered and the water used as part of the commissioning tests, it is accepted that the intent of Condition 45 of the Authorisation for operational use EPROD will be achieved." No evidence of submission to DITT of the construction reports including QA and QC data endorsed by the ICE for the operating EPROD was provided. | This condition is identical to 75.k in the 13Nov2020 Authorisation except that it doesn't sit as a subcondition related to dewatering of the PRODS. OFI: Prepare and submit the construction reports including Quality Assurance (QA) and Quality Control (QC) data endorsed by the ICE for EPROD, given that early approval to operate EPROD was granted 20 March 2020. The EPROD Commissioning Plan stated the EPROD construction report needed to be completed "as soon as possible". |
| Tailings storage facility | | | | | | | | | | | | | | | | |
| 46 | 46 | | An Independent Certifying Engineer (ICE) must oversee and be responsible for any works undertaken at the TSF: | | | | | | | 1 | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020. It is provided for context of a subcondition. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEFF)
Waste (general, mine rock, tailings)
Community (local Indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | | | | |
|------|------|---|--|--|--|--|--|--|--|--|---|----------------------------|--|--|---|
| 46.d | 46.d | construction reports including QA and QC data must be provided to the Department within 30 days of construction being completed. | | | | | | | | | 2 | Part Compliance (moderate) | Sighted MRM Cell 2 TSF Stage 5 Raise to RL 10059m. Sighted email dated 24Aug2020. Email from Operator to Department FW: MRM TSF Cell 1 Stage 4 Raise Construction Report dated 21Oct2020. Letter ICE to Operator subject TSF Cell 1 Stage 4 Raise Construction Report Independent Certifying Engineer (ICE) Endorsement Letter dated 15Oct2020. Note that the Operator only provided the cell 1 stage 4 report in the audit period. More than 30 days from construction completion. The Operator advised that Cell 2 Stage 5 was complete in 2018, however the construction report was only submitted to the Department 24Aug20, which is not compliant as it was more than 30 days from construction completion. The Operator advised that Cell 1 Stage 4 was complete in January 2020, however the construction report was only submitted to the Department on 15Oct20, which is not compliant as it was more than 30 days from construction completion. The Independent Monitor has identified that the late submission of construction reports for the TSF is a repeated non-compliance. | This condition is only relevant until 13Nov2020. OFI: Ensure TSF construction reports including QA and QC data are submitted within the 30 day timeframe stipulated in the condition. While this condition is no longer in the 13 November 2020 Authorisation, an equivalent requirement exists for all of the ICE construction reports in Condition 48.g. OBS: Operator advised that 30 days is not a sufficient time to prepare the as-constructed report. | |
| 51 | 51 | The Operator is authorised to complete works to recommission TSF Cell 1 in accordance with the 2013-2015 MMP amendment and additional information provided to the Department, as defined in Condition 1.i.ii.12. The Operator must ensure: | | | | | | | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020. | |
| 51.a | 51.a | The existing clay cap, if redundant, is removed as part of the recommissioning works; and | | | | | | | | | 4 | Full Compliance | TSF Cell 1 Stage 4 - Raise to RL 10,056m Construction Report (July 2020). | This condition is only relevant until 13Nov2020. The clay cap has been removed to allow maximum space for tailings. The As constructed report confirmed this in Section 3.3. | |
| 51.b | 51.b | The Cell 1 Seepage Interception Trench system must be constructed and an operation manual detailing rules of operation, maintenance and environmental monitoring requirements be developed prior to operation of the system; and | | | | | | | | | 4 | Full Compliance | Seepage Interception Trench Tailings Storage Facility Domain OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL Manual-Draft (not published on document control as of 24Sep2021) version 1 dated November 2020. EMR 2020 -2021. EMR 2020 -2021 states "The TSF Interception Trench commenced operation (pumping) in October 2020. During the reporting period, a total of 349 ML of water was pumped from the trench back into the TSF." The Operator advised that while this terminology says "operation", the system was not considered operational until construction was completed 5Nov20. There is a standalone OMS Manual for the trench which is still a draft document dated November 2020. Seepage Interception Trench Tailings Storage Facility Domain OMS Manual Section 5.4.1 states "A schematic flow diagram of the interception trench is provided in Figure 5-3. Details of the pumps and gensets used in the system, including maintenance requirements, is outlined in Section 7.4." and Section 6 has operational procedures including TARPS in Section 6.2.3 and monitoring requirements are in the Instrumentation and monitoring section (note it would be section 7 but has a formatting issue so no section number). Operation appears to have commenced prior to the finalisation of the OMS. | This condition is only relevant until 13Nov2020. OBS: The Seepage Interception Trench Tailings Storage Facility Domain OMS Manual is currently a draft version. There is a need to proceed to complete the manual, including but not limited to incorporating environmental trigger levels to produce a final version. The Operator advised "The Cell 1 Seepage Interception Trench system was considered operational on the date of construction completion (5 November 2020, when pipework was complete). Note that construction of the Trench required dewatering to allow for access and installation of equipment, as described in 'Tailings Storage Facility Seepage Interception Trench Design' (GHD, 2019) Section 6.3.3: "During construction, it is expected that a significant amount of dewatering will be required to install the sumps, reach the target trench invert level and install the drainage and transfer pipes. During this period, temporary sump pumps will be installed to remove water from the trench excavation. The extraction volumes from each trench segment will be recorded, as well as the response in the monitoring bores." The distinction between previous dewatering and the October date, is October is when the pumps in Sump 5 were installed and the automated pumping system / associated flowmeters became operational. Previously, MRM were using a temporary skid-mounted pump at Sump 5." | |
| 51.c | 51.c | The TSF OMS manual, including the TARP must be updated to include Cell 1. | | | | | | | | | 4 | Full Compliance | TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Revision following Cell 1 Stage 4 Raise to RL 10,056 m fulfilled this condition. | This condition is only relevant until 13Nov2020. | |
| 52 | 52 | The Operator is authorised to complete lift Cell 1 embankment raise works as follows: | | | | | | | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020. | |
| 52.a | 52.a | Cell 1 Stage 4 is to be in accordance with the 2013-2015 MMP amendment and additional information provided to the Department, as defined in Condition 1.i.ii.i2; | | | | | | | | | | N/A | Not Applicable | TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report (July 2020). MRM Tailings Storage Facility Quarterly Report March 2020 – May 2020 states "January 2020 Completion of Cell 1 Stage 4 construction." | Before audit period. Operator advised that construction was complete in January 2020. |
| 52.b | 52.b | Trials and investigations, including but not limited to blending of tailings with clay, investigation of in-situ Cell 1 conditions at east and west sumps, restriction on rate of placement of embankment materials and any other works identified by ITRB must be undertaken to inform the final construction; | | | | | | | | | | N/A | Not Applicable | ITRB endorsement Cell 1 Raise 4. TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report (July 2020). The ITRB endorsed the TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report and therefore works identified by the ITRB must have been undertaken to inform the final construction. Section 5.3.2 discusses blending the existing Cell 1 clay material with the existing tailings and the trials/investigations that were undertaken. Section 3.3 discussion stripping the eastern sump. | Before audit period. Operator advised that construction was complete in January 2020. |
| 52.c | 52.c | If construction works are not completed prior to the start of the wet season, the Operator must make allowances of rainfall on the stability of the structure to the satisfaction of the ICE; | | | | | | | | | | N/A | Not Applicable | MRM Tailings Storage Facility Quarterly Report March 2020 – May 2020 states "January 2020 Completion of Cell 1 Stage 4 construction." | Before audit period. Operator advised that construction was complete in January 2020. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEFF)
Waste (general, mine rock, tailings)
Community (local Indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | | | | | | |
|------|------|--|---|--|--|---|--|---|--|-----|----------------|--|--|--|--|---|---|
| 52.d | 52.d | | At completion of the construction works the ICE must approve an "as-constructed" construction report and updates to the TSF Operations, Maintenance and Surveillance Manual and TARPs. The construction report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied to the Department; and | | | | | | | | | | | | TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report. TSF Operations, Maintenance and Surveillance (OMS) Manual, 31/07/2020, Version 5.0 Revision following Cell 1 Stage 4 Raise to RL 10,056 m. Email from Operator to Department FW: MRM TSF Cell 1 Stage 4 Raise Construction Report dated 21Oct2020. Letter ICE to Operator subject TSF Cell 1 Stage 4 Raise Construction Report Independent Certifying Engineer (ICE) Endorsement Letter dated 15Oct2020. MRM Tailings Storage Facility Quarterly Report March 2020 – May 2020. Email GHD to Operator RE: TSF Operations Manual Review dated 30Jul2020. Letter ICE to Operator subject TSF Cell 1 Stage 4 Raise Construction Report Independent Certifying Engineer (ICE) Endorsement Letter dated 15Oct2020. states "The Cell 1 Stage 4 raise was completed in accordance with conditions 52 (b) to (c) of Variation of Authorisation 0059-02, dated 10 August 2020 (the VOA). This letter provides ICE approval of the as constructed report, required by condition 52 (d) of the VOA." Construction report: includes hold point signoffs in the Borrow Management Plan MRM TSF Cell 1 Raise-4 and sighted laboratory geotechnical testing listed in Appendix B in 2019 TSF Cell 1 Raise to RL10056m - Lot Register. Note: the term responsible engineer/designer appears to be used. Reviewed and signed by ICE (second last page). OMS: " Section 2.2.3 Responsible Engineer The Responsible Engineer is the professional engineer responsible for verifying that the TSF / WMD is designed, constructed and operated in accordance with best practice and the applicable guidelines, standards and regulations. The Responsible Engineer is also responsible for technical supervision during construction, and should certify that the works have been constructed in conformance with the design, drawings, and specifications." Operations manual includes updated TARPS. Operations manual was updated following Cell 1 Stage 4 Raise to RL 10,056 m. | This condition is only relevant until 13Nov2020. MRM Tailings Storage Facility Quarterly Report March 2020 – May 2020 states "January 2020 Completion of Cell 1 Stage 4 construction." There is no requirement stated in this condition for submission to the Department or timeframes for completion of the as-constructed report, other than it being required "at completion of construction works". Therefore this part of the condition is compliant. Timeframes are included in condition 46.d. While there was no evidence of the ICE signing off on the updated TSF Operations, Maintenance and Surveillance Manual, correspondence relating to a workshop between the Operator, the ICE and ITRB in July 2020 regarding the TSF OMS Manual was provided. No OFI has been prepared because the 13Nov2020 Authorisation does not require the ICE to approve updates to the TSF OMS and TARPs. Condition 50.e of the 13Nov20 Authorisation requires ITRB review comments to be appropriately addressed for future use of the TSF including OMS Manual and TARPs but not ITRB or ICE approval. | |
| 52.e | 52.e | | The TSF Cell seepage mitigation system is fully operational and optimised within 12 months of recommencing tailings deposition in Cell 1. | | | 1 | | 1 | | N/A | Not Applicable | | | | This condition is only relevant until 13Nov2020. Trigger 12 months from January 2020 that falls outside audit period. No longer a condition in the new Authorisation. | | |
| 56.a | 56.a | | Construction reports including QA and QC data endorsed by the Independent Certifying Engineer (ICE) must be provided to the Department prior to the deposition of tailings within the Cell 2 Raise 5 storage capacity and within 30 days of construction being completed. | | | | | | | | | | | | Sighted MRM Cell 2 TSF Stage 5 Raise to RL 10059m. Sighted email dated 24Aug2020. Construction was completed in 2018 however the as constructed report was not delivered to the DITT until 24Aug2020. MRM TSF Quarterly Report MARCH – MAY 2020. Construction was complete before the audit period. However, the report was submitted in the audit period more than 30 days after construction was completed. This was assessed in the 2020 audit. Part compliance - moderate (due date missed and depositing tailings prior to submission of construction report to DITT). MRM TSF Quarterly Report MARCH – MAY 2020 indicates that deposition was occurring in cell 2 and the as constructed report for Cell 2 TSF Stage 5 Raise to RL 10059m had not been provided to DITT. | This condition is only relevant until 13Nov2020. The Operator advised "The Risk Manager software is primarily used by Glencore Corporate to track safety-related information at each operation globally. MRM has created an Environmental Obligation component to the software which develops registers for each approval (VOA, WDL, EPBC). This allows for actions to be allocated to the relevant people throughout the business, assign due dates which flag to Management if they become overdue, and is able to collate and export information relating to environmental compliance. Updates to several functions have been occurring during 2021 to improve functionality. The Environmental Obligations Register has been operational since 2019, was upgraded mid-2020 and again in late-2021. A screen print out of the action assigned to Condition 56 has been provided. This shows evidence that the action was assigned to the TSF Project Manager to upload the construction report, which is shown at the bottom of the page (dated 14 Nov 2020)." No OFI has been prepared as the Operator has implemented Risk Manager's Environmental Obligations Register, which assigns actions and accountabilities and assists to meet statutory timeframes (eg within 30 days of construction being completed). | |
| 57 | 57 | | The operator is authorised to construct, operate and maintain Cell 2 Stage 6 embankment lift in accordance with: | | | | | | | | | | | | Refer to sub conditions | This condition is only relevant until 13Nov2020. | |
| 57.a | 57.a | | concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.ii.12, ensuring: | | | | | | | | | | | | | Email Operator to DITT subject MRM TSF Cell 2 Stage 6 Lift - Detailed Design and ITRB Endorsement dated 2Sep2019 (before audit period). MCARTHUR RIVER MINE ITRB DOCUMENT COMMENT TRACKING REGISTER McArthur River Mining Pty Ltd Cell 2 TSF Stage 6 Raise to RL 10061 Detailed Design Report dated 1Sep2019. MRM TSF Quarterly Report MARCH – MAY 2020. "The Cell 2 Stage 6 raise to RL 10,061 m design was finalised in July 2019 by GHD, and endorsed by the Independent Tailings Review Board (ITRB). Construction of the Cell 2 Stage 6 raise was subsequently approved by DPIR under VOA 0059-02 (15 August 2019) and commenced on 3 September 2019, upon receipt of the ITRB endorsement. Embankment raise works were completed on 26 May 2020, and the Cell 2 Stage 2 buttress works are ongoing as of 31 May 2020 and are expected to be completed in the 2021 dry season." No inconsistencies with the MMP were observed. | This condition is only relevant until 13Nov2020. Condition 77 in the 13Nov2020 Authorisation is equivalent for construction but does not mention operate or maintain. Condition 77 in the 13Nov2020 Authorisation says develop. The Operator advised "In line with the January 2020 MMP, the following construction activities occurred over the reporting period: • Completion of Cell 2 Stage 6 – 2 m upstream raise to RL 10,061. • Completion of Cell 1 Stage 5 – 3 m upstream raise to RL 10,059. • Completion of the Surprise Creek Seepage Interception Trench. Construction works were completed consistent with the approved designs, the TSF Raising - General Specification for Design and Construction (Appendix I of the January 2020 MMP), and the overall Life of Mine philosophy." The Operator advised the Independent Monitor "Cell 2 Stage 6 was completed May 2020, excluding some buttress works. There is one layer to complete on one section of the wall. MRM will be working towards the construction report for this once complete." |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEFF)
Waste (general, mine rock, tailings)
Community (local Indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | | | |
|----------|----------|------|---|--|--|--|--|--|--|---|-----|-------------------------|---|--|
| 57.a.i | 57.a.i | | Detailed designs follow the approved McArthur River Mining Pty Ltd Tailings Storage Facility Raising General Specification for Design and Construction and must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives; | | | | | | | 1 | 4 | Full Compliance | Email Operator to DITT subject MRM TSF Cell 2 Stage 6 Lift - Detailed Design and ITRB Endorsement dated 2Sep2019 (before audit period). MCARTHUR RIVER MINE ITRB DOCUMENT COMMENT TRACKING REGISTER McArthur River Mining Pty Ltd Cell 2 TSF Stage 6 Raise to RL 10061 Detailed Design Report dated 1Sep2019 (before audit period). Cell 2 Raise 6 Embankment Construction Checklist dated 23May20 (buttress west) Cell 2 Raise 6 Embankment Construction Checklist dated 9Apr20 EMR 2020 -2021 section 2.7.2 "In line with the January 2020 MMP, the following construction activities occurred over the reporting period: • Completion of Cell 2 Stage 6 – 2 m upstream raise to RL 10,061. • Completion of Cell 1 Stage 5 – 3 m upstream raise to RL 10,059. • Completion of the Surprise Creek Seepage Interception Trench. Construction works were completed consistent with the approved designs, the TSF Raising - General Specification for Design and Construction (Appendix I of the January 2020 MMP), and the overall Life of Mine philosophy." The two Cell 2 Raise 6 Embankment Construction Checklists provided shows sign off by the resident engineer and the Operator advised "the examples provided are hold point sign-offs for each layer of each lot". | This condition is only relevant until 13Nov2020. Condition 77 of 13Nov2020 Authorisation includes reference to detailed design but not anything about environmental performance, hold points. The Operator advised "Cell 2 Stage 6 was completed May 2020, excluding some buttress works. There is one layer to complete on one section of the wall. MRM will be working towards the construction report for this once complete." The MRM TSF Cell 2 Stage 6 Lift - Detailed Design report includes evaluation of dam safety and environmental risks as recommended by ANCOLD (2012a), and presents strategies to manage and mitigate risk. A risk matrix is attached to the LOM Report that is consistent with the overall Operator EIS approach, and consists of implementing a 'likelihood and consequence' risk matrix, determining the rating for each identified risk, the control measures used to mitigate that risk, and then an assessment of the residual rating after taking these control measures into account. Section 7 discusses critical issues pertaining to construction, design validation, performance and the ongoing dam safety program for the Stage 6 Cell 2 TSF. Section 2.4 Engineering Hold Points of the TSF Cell 2 Embankment Raise - RL10061m Technical Specification September 2019, revision 0 states "Mandatory Engineering Hold Points shall include those specified to ensure compliance with the intent of the designs and with other specified requirements, and to ensure that critical and/or irreversible activities are not constructed incorrectly." |
| 57.a.ii | 57.a.ii | | The detailed designs must be reviewed and endorsed by the ITRB provided to the department prior to commencement of construction; and | | | | | | | 1 | N/A | Not Applicable | Enclosure 1 – ITRB Review and Endorsement (INDEPENDENT TAILINGS REVIEW BOARD (ITRB) - DOCUMENT COMMENT TRACKING REGISTER 1 September 2019). Ltr-DPIR (ITRB Endorsement Cell 2 Stage 6). ITRB endorsement - GHD's Draft Detailed Design Report for the McArthur River Mining Pty Ltd (MRM) Cell 2 TSF Stage 6 Raise to RL 10061 is endorsed by the ITRB as more than adequate. The Cell 2 TSF Stage 6 Raise to RL 10061 report included detailed design drawings. The ITRB endorsement was provided to DPIR on 02Sep2019 according to the evidence provided. Operator advised construction commenced on 03Sep2019. | Before the audit period. |
| 57.a.iii | 57.a.iii | | Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ITRB must provide and implement a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department. | | | | | | | 1 | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. Operator advised no modifications were made. |
| 57.b | 57.b | | At completion of the construction works the ICE must approve an "as constructed" construction report and updates to the TSF Operations, Maintenance and Surveillance Manual and TARPs. The construction report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied to the Department prior to the deposition of tailings. | | | | | | | 1 | N/A | Not Applicable | The Operator advised the Independent Monitor "Cell 2 Stage 6 was completed May 2020, excluding some buttress works. There is one layer to complete on one section of the wall. MRM will be working towards the construction report for this once complete." However, the EMR 2020 - 2021 states "In line with the January 2020 MMP, the following construction activities occurred over the reporting period: • Completion of Cell 2 Stage 6 – 2 m upstream raise to RL 10,061." | This condition is only relevant until 13Nov2020. Condition 50 in the 13Nov2020 Authorisation is similar but for the ITRB instead of for the ICE. Completion of construction information is inconsistent between the RFI (not complete) and EMR (completed), which impacts the timing of the as constructed report and therefore potential part compliance during the audit period. The Independent Monitor was advised that the construction report will be prepared following construction completion. |
| | | 76 | From the date of authorisation of the Overburden Management Project, tailings must be managed in accordance with the following: | | | | | | | | | Refer to sub conditions | | |
| | | 76.a | be deposited only in Cell 1, Cell 2 or combined Cell 1 and Cell 2; | | | | | | | 1 | 4 | Full Compliance | MRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020. MRM Tailings Storage Facility Quarterly Report September 2020 – November 2020 checked by the Independent Monitor and compliance evident based on "The TSF domain is shown in Figure 2-1, and includes the following: • Cell 2, currently operational tailings storage cell. • Cell 1, currently operational tailings storage cell. • Water Management Dam (WMD) (also referred to as Cell 3), the treated water storage dam. The WMD is situated to the south of Cell 2." | |
| | | 76.b | any construction of tailings lift, as approved in Condition 79, be reviewed and endorsed by independent oversight requirements in Condition 48 and 50 or an alternative independent qualified and experienced third party approved by the Department in writing; | | | | | | | 1 | | - | Refer to compliance scored in conditions 48 and 50. MRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020. MCARTHUR RIVER MINING Tailings Storage Facility Cell 2 Stage 7 Raise to RL 10063 m ITRB 19Feb2021. Email Operator to DITT subject MRM TSF Cell 2 Stage 6 Lift - Detailed Design and ITRB Endorsement dated 2Sep2019 (before audit period). MCARTHUR RIVER MINE ITRB DOCUMENT COMMENT TRACKING REGISTER McArthur River Mining Pty Ltd Cell 2 TSF Stage 6 Raise to RL 10061 Detailed Design Report dated 1Sep2020. MCARTHUR RIVER MINE ITRB DOCUMENT COMMENT TRACKING REGISTER TSF Cell 1 Stage 5 – Raise to RL 10059, Detailed Design Report dated June 2020. Email DITT to Operator subject FW: MRM TSF Cell 2 Raise 7 - Detailed Design and ITRB Endorsement dated 13Apr2021. | Refer to compliance scored in conditions 48 and 50. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
Waste (general, mine rock, tailings)
Community (local Indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

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|-------------------------------|--|---------------------------------|--|--|--|--|--|--|--|--|--|---|---|-------------------------|---|---|
| | | 76.c | construction of the TSF lifts is undertaken in accordance with a valid AAPA certificate; | | | | | | | | | 1 | 4 | Full Compliance | AAPA Cert - C2004_014. AAPA Cert requires overburden storage with a maximum height of 80 m. It does not specify a datum. | The Operator advised that the excavation permits include reference to the AAPA certificate relevant to a TSF lift. Sighted map of different access areas showing blue AAPA certificate exists for works. Orange and red areas not approved. Ground disturbance permit reviews activity against AAPA certificates. Requires community team sign off. Sighted the section that included an APPA certificate number. AAPA certificate includes GIS layer. Community team are responsible for AAPA certificate signoff. All loaders, etc are GPS capable and can see where to work within the bounds. Ground Disturbance permit includes a sign off for completion. Surveyors measure the height of the NOEF to ensure it is not above the height of Barramundi Dreaming annually (MRM NOEF Compliance - Compliance report highlighting the construction height restrictions of the NOEF in relation to the Barramundi Dreaming). MRM NOEF Compliance - Compliance report highlighting the construction height restrictions of the NOEF in relation to the Barramundi Dreaming states "Maximum RL of NOEF is 112.5541m, which is 3,501 below RL max of Barramundi Dreaming (116.0551m). Measurements were taken on 24/04/2021 using high precision GPS methods." |
| | | 76.d | the TSF Seepage Interception Trench is fully operational by end of December 2020; | | | | | | | | | 1 | 4 | Full Compliance | MRM TSF Quarterly Report - September to November 2020 DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) MRM TSF Quarterly Report - September to November 2020 in the executive summary "The following major construction works were completed during the reporting period: • Surprise Creek Seepage Interception Trench, which commenced on 15 August 2020 and was completed on 5 November 2020." DITT Site Inspection Report dated 3Feb2021 "TSF seepage interception trench was fully operational as required under Authorisation 0059;" and as this site inspection was on 2Dec2020 this condition scores full compliance. | The Independent Monitor was advised by the Operator that "The construction of the Surprise Creek Interception Trench was complete on 5 November 2020." |
| | | 76.e | in the event that future review of the designs or as-built structure by independent experts require additional matters to be addressed, the Operator together with the ICE must provide a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department. | | | | | | | | | 1 | 4 | Full Compliance | Email DITT to Operator subject FW: MRM TSF Cell 2 Raise 7 - Detailed Design and ITRB Endorsement dated 13Apr2021. | Cell 2 raise 7 was increased from 10,061.5 m relative level (RL) to 10,063 mRL. Endorsement was obtained from the ITRB on the change and it was submitted to DITT. Email DITT to Operator subject FW: MRM TSF Cell 2 Raise 7 - Detailed Design and ITRB Endorsement dated 13Apr2021 states "DITT acknowledges receipt of the documentation in relation to the TSF Cell 2, Stage 7 raise, in accordance with Authorisation 0059. In accordance with 0059, MRM may begin construction of the above lift." |
| TSF Cell 1 and 2 Construction | | | | | | | | | | | | | | | | |
| | | 77 previously 52, 58, (changed) | From the date of authorisation of the Overburden Management Project, the Operator is approved to develop TSF Cell 1, Cell 2 and Combined Cell 1 and 2 lifts in accordance with: | | | | | | | | | 1 | 4 | Full Compliance | MRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020. | Table 18 MMP. |
| | | 77.a | McArthur River Mining Pty Ltd, Tailings Storage Facility, Design Development – Life of Mine Plan, May 2017, as defined in Schedule B; | | | | | | | | | 1 | 4 | Full Compliance | EMR 2020 -2021. MCARTHUR RIVER MINING Tailings Storage Facility Cell 2 Stage 7 Raise to RL 10063 m. ITRB dated 19Feb2021. EMR 2020 -2021 section 2.7.2 "In line with the January 2020 MMP, the following construction activities occurred over the reporting period: • Completion of Cell 2 Stage 6 – 2 m upstream raise to RL 10,061. • Completion of Cell 1 Stage 5 – 3 m upstream raise to RL 10,059. • Completion of the Surprise Creek Seepage Interception Trench. Construction works were completed consistent with the approved designs, the TSF Raising - General Specification for Design and Construction (Appendix 1 of the January 2020 MMP), and the overall Life of Mine philosophy." MCARTHUR RIVER MINING Tailings Storage Facility Cell 2 Stage 7 Raise to RL 10063 m. ITRB dated 19Feb2021. "The proposed future development of the MRM TSF has been set out in the TSF Life of Mine (LOM) Plan and is summarised in the subject report. This outlines the staged development of Cells 1 and 2 though to the end of production in 2040. The raising of Cell 2 by the construction of the Stage 7 Raise to RL 10063 m in 2021 is in line with the LOM Plan." | The Operator advised that this is undertaken through detailed design process and is verified in the as constructed report. |
| | | 77.b | the approved MMP for the following stages: | | | | | | | | | | | Refer to sub conditions | | |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEFF) | Waste (general, mine rock, tailings) | Community (local indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|---|---|---|-------------|----------------------------|--|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|--|--|
| | | 77.b.ii | Cell 1 Raise 4 – 10,056.0 mRL; | | | | | | | 1 | | | N/A | Not Applicable | Email from Operator to DITT FW: MRM TSF Cell 1 Stage 4 Raise Construction Report dated 21Oct20. Letter ICE to Operator subject TSF Cell 1 Stage 4 Raise Construction Report Independent Certifying Engineer (ICE) Endorsement Letter dated 15Oct2020. MRM Tailings Storage Facility Quarterly Report March 2020 – May 20. MRM Tailings Storage Facility Quarterly Report March 2020 – May 2020 states "January 2020 Completion of Cell 1 Stage 4 construction." so the works were completed before the audit period. Letter ICE to Operator subject TSF Cell 1 Stage 4 Raise Construction Report Independent Certifying Engineer (ICE) Endorsement Letter dated 15Oct2020. states "The Cell 1 Stage 4 raise was completed in accordance with conditions 52 (b) to (c) of Variation of Authorisation 0059-02, dated 10 August 2020 (the VOA). This letter provides ICE approval of the as constructed report, required by condition 52 (d) of the VOA." | Historic item. Works completed before the audit period. |
| | | 77.b.ii | Cell 1 Raise 5 – 10,059.0 mRL; | | | | | | | 1 | | | 4 | Full Compliance | EMR 2020 -2021. MRM TSF Cell 1 Raise 5 to RL 10059.0 m Hold Point Release Form- Buttress Foundation. MRM 20.08.18 Weekly TSF Construction Report. Cell 1 Stage 5 - Layer Checklist. | EMR 2020 -2021 section 2.7.2 "In line with the January 2020 MMP, the following construction activities occurred over the reporting period: • Completion of Cell 2 Stage 6 – 2 m upstream raise to RL 10,061. • Completion of Cell 1 Stage 5 – 3 m upstream raise to RL 10,059. • Completion of the Surprise Creek Seepage Interception Trench. Construction works were completed consistent with the approved designs, the TSF Raising - General Specification for Design and Construction (Appendix I of the January 2020 MMP), and the overall Life of Mine philosophy." |
| | | 77.b.iii - previously 57 changed | Cell 2 Raise 6 – 10,061.0 mRL; | | | | | | | 1 | | | 4 | Full Compliance | EMR 2020 -2021. Cell 2 Stage 6 - Layer Checklist. MRM 20.08.18 Weekly TSF Construction Report. | EMR 2020 -2021 section 2.7.2 "In line with the January 2020 MMP, the following construction activities occurred over the reporting period: • Completion of Cell 2 Stage 6 – 2 m upstream raise to RL 10,061. • Completion of Cell 1 Stage 5 – 3 m upstream raise to RL 10,059. • Completion of the Surprise Creek Seepage Interception Trench. Construction works were completed consistent with the approved designs, the TSF Raising - General Specification for Design and Construction (Appendix I of the January 2020 MMP), and the overall Life of Mine philosophy." |
| | | 77.b.iv | Cell 2 Raise 7 – 10,061.5 mRL; | | | | | | | 1 | | | 4 | Full Compliance | Email DITT to Operator subject FW: MRM TSF Cell 2 Raise 7 - Detailed Design and ITRB Endorsement dated 13Apr2021. Technical Working Group record 25Mar2021. Cell 2 raise 7 was increased from 10,061.5 m relative level (RL) to 10,063 mRL. Endorsement was obtained for ITRB on change and submitted to Regulator with approval from the regulator in email DITT to Operator subject FW: MRM TSF Cell 2 Raise 7 - Detailed Design and ITRB Endorsement dated 13Apr2021. The email stated "DITT acknowledges receipt of the documentation in relation to the TSF Cell 2, Stage 7 raise, in accordance with Authorisation 0059. In accordance with 0059, MRM may begin construction of the above lift." | Design (including changes) was approved by DITT 13Apr2021 towards the end of the audit period. Technical Working Group record 25Mar2021 states "MRM intend to increase the Cell 2, Raise 7 lift on the TSF from 10,061.5 m relative level (RL) to 10,063.0 mRL (i.e. an increase of 1.5 m). * Action – MRM to provide the detailed design for the Cell 2, Stage 7 lift, and endorsement from the Independent Tailings Review Board (ITRB) to the DITT of Industry, Tourism and Trade (DITT) for approval prior to commencing construction." |
| | | 77.b.v | Combined Cell 1 and 2 Raise 1 – 10,062.6 mRL; | | | | | | | 1 | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.vi | Combined Cell 1 and 2 Raise 2 – 10,063.8 mRL; | | | | | | | 1 | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.vii | Combined Cell 1 and 2 Raise 3 – 10,065.0 mRL; | | | | | | | 1 | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.viii | Combined Cell 1 and 2 Raise 4 – 10,066.2 mRL; | | | | | | | 1 | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.ix | Combined Cell 1 and 2 Raise 5 – 10,067.4 mRL; | | | | | | | 1 | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.x | Combined Cell 1 and 2 Raise 6 – 10,068.6 mRL; | | | | | | | 1 | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xi | Combined Cell 1 and 2 Raise 7 – 10,069.8 mRL; | | | | | | | 1 | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xii | Combined Cell 1 and 2 Raise 8 – 10,071.0 mRL; | | | | | | | 1 | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xiii | Combined Cell 1 and 2 Raise 9 – 10,072.2 mRL; | | | | | | | 1 | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xiv | Combined Cell 1 and 2 Raise 10 – 10,073.4 mRL; | | | | | | | 1 | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xv | Combined Cell 1 and 2 Raise 11 – 10,074.6 mRL; | | | | | | | 1 | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xvi | Combined Cell 1 and 2 Raise 12 – 10,075.8 mRL; | | | | | | | 1 | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xvii | Combined Cell 1 and 2 Raise 13 – 10,077.0 mRL; | | | | | | | 1 | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xviii | Combined Cell 1 and 2 Raise 14 – 10,078.0 mRL. | | | | | | | 1 | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 78 | For each lift, the Operator must ensure detailed designs follow the approved McArthur River Mining Pty Ltd Tailings Storage Facility Raising General Specification for Design and Construction; with oversight provided by the ICE consistent with Condition 48. | | | | | | | 1 | | | 4 | Full Compliance | Email DITT to Operator subject FW: MRM TSF Cell 2 Raise 7 - Detailed Design and ITRB Endorsement dated 13Apr2021. Cell 2 raise 7 was increased from 10,061.5 m relative level (RL) to 10,063 mRL. Endorsement was obtained for ITRB on change and submitted to Regulator with approval from the regulator in email DITT to Operator subject FW: MRM TSF Cell 2 Raise 7 - Detailed Design and ITRB Endorsement dated 13Apr2021. The email stated "DITT acknowledges receipt of the documentation in relation to the TSF Cell 2, Stage 7 raise, in accordance with Authorisation 0059. In accordance with 0059, MRM may begin construction of the above lift." | The Operator advised that the detailed designs are written by the ICE. "GHD's Draft Detailed Design Report for the McArthur River Mining Pty Ltd (MRM) TSF Cell 1 Stage 5 Raise to RL 10059 was endorsed by the ITRB as more than adequate on the 02/07/2020." |
| TSF Management | | | | | | | | | | | | | | | | |
| | | 79 - previously 54 | The Operator must operate and maintain the TSF in accordance with the most up-to-date TSF Operations Maintenance and Surveillance manual, ensuring: | | | | | | | 1 | | | 4 | Full Compliance | 21/07/31 Daily Monitoring Sheet. MRM TSF Quarterly Report - September to November 2020. EMR 2020 - 2021 EMR 2020 - 2021 section 2.7.1 states "Tailings were placed using the installed spigot discharge system around the Cell 1 and Cell 2 perimeters, as per the designs and TSF operational guidelines. A total of 3,778,265 t of tailings were deposited into the TSF during the reporting period." | |
| | | 79.a | no discharge of water into the TSF unless | | | | | | | | | | | Refer to sub conditions | | |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

| | | | |
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| | | 79.a.i | it is water contained within the Tailings stream which is at normal operational slurry densities; or |
| | | 79.a.ii | It is endorsed by the ITRB; |
| | | 79.b | all Tailings are deposited sub-aerially to allow proper beaching and drying between deposition cycles; |
| | | 79.c | surface water levels are maintained in the TSF such that they do not come into contact with the embankment internal walls; |
| | | 79.d | phreatic surface is managed to avoid compromising the integrity of the embankment. |
| | | 80 - previously 55 | The Operator must provide quarterly to the Minister a written status report on the seepage and management of seepage from the TSF, including the following: |

| Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|------------------|---|--|
| | | | | | | 1 | | | 4 | Full Compliance | 21/07/31 Daily Monitoring Sheet. MRM TSF Quarterly Report - September to November 2020. MRM TSF Quarterly Report - September to November 2020 states "Figure 3-4 provides daily density readings for the tailings slurry pumped to the TSF over the reporting period. The densities were primarily in the operational target density of between 50 and 55% for September and October, with some densities between 45 – 50% in November. The lower reported densities in November were primarily due to inaccuracies with online instrumentation monitoring and is currently under investigation." Independent Monitor confirms the daily monitoring sheet included density. | The Operator advised "Both density and water level are monitored daily. Density and the water level in Cell 2 are also monitored remotely and in real-time." |
| | | | | | | 1 | | | N/A | Not Applicable | | Operator advised the IM that there were no additional discharges so no approval by the ITRB was required. |
| | | | | | | 1 | | | 4 | Full Compliance | TSF Operations Maintenance and Surveillance Manual version 5 (revised 31Jul2020). EMR 2020 -2021. TSF OMSM in section 4.1 states "The tailings slurry is deposited via three 355 mm OD pipelines that run around the perimeter of the two TSF cells, with the tailings delivered sub-aerially through offtake spigots located at approximately 50 m intervals." EMR 2020 - 2021 section 2.7.1 states "Tailings were placed using the installed spigot discharge system around the Cell 1 and Cell 2 perimeters, as per the designs and TSF operational guidelines. A total of 3,778,265 t of tailings were deposited into the TSF during the reporting period." | The Operator advised "MRM deposit from a perimeter pipe with spigots that develop a beach with decant water in the centre. Sub-aerial deposition is the name of this method." |
| | 1 | | | | | 1 | | | 4 | Full Compliance | 21/07/31 Daily Monitoring Sheet. Email from Cross-solutions to Operator subject Cell 1 and 2 water levels dated 31Jul2021 (outside audit period). TSF Operations Maintenance and Surveillance Manual version 5 (revised 31Jul2020). Independent Monitor confirms the daily monitoring sheet included surface water level. TSF Operations Maintenance and Surveillance Manual version 5 (revised 31Jul2020) includes TARP's for Cell 2 and the WMD with cell 1 TARP's pending construction completion. | The Operator advised "Both density and water level are monitored daily. Density and the water level in Cell 2 are also monitored remotely and in real-time." The Operator advised "The Cell 1 water level is currently picked up daily by surveyors. An example email is attached (refer to Cell 1 and 2 water levels email). Note: Cell 2 level is currently also being picked up because MRM have had to remove the sensor due to construction currently occurring, this is also why the reading is not recorded on the daily sheet." |
| | | | | | | | | | 4 | Full Compliance | TSF Operations Maintenance and Surveillance Manual version 5 (revised 31Jul2020) 21/07/31 Daily Monitoring Sheet. Email from Cross-solutions to Operator subject Cell 1 and 2 water levels dated 31Jul2021 (outside audit period). Table 4-6 of the TSF OMS includes "Maintain as small a decant pond as possible" to "Reduce pore pressures / phreatic surface level in the embankment and reduce the risk of embankment stability". Table 5-13 states "7 x wick drains with piped outlets were installed in the Cell 1 Stage 3 construction process, designed to control the phreatic surface. These drains are monitored daily (dry, damp or flowing), and have historically responded seasonally. Flow has always remained clear." Independent Monitor confirms the daily monitoring sheet included surface water level. EMR 2020- 2021 section 2.7.1 states "The design philosophy of the TSF, as outlined in the January 2020 MMP, is as follows: reduce seepage from the TSF by maintaining a small decant pond, and through optimised tailings management to remove surface water by evaporation. This also assists in controlling pore water pressures in the tailings adjacent to the perimeter embankments." and "The design philosophy was achieved through operational controls throughout the reporting period". | |
| | 1 | | 1 | | | 1 | | 1 | 4 | Full Compliance | MRM TSF Quarterly Report - December 2020 to February 2021 submitted 19Apr21. MRM TSF Quarterly Report - March 20 to May 20_Rev 1 cover letter dated 14Sep20. MRM TSF Quarterly Report - June 20 to August 20_FINAL submitted 26Nov20. MRM TSF Quarterly Report - September to November 2020 submitted 22Feb21. Email Operator to DITT subject FW: MRM TSF Quarterly Report December 2020 to February 2021 dated 19Apr2021. Email Operator to DITT subject MRM TSF Quarterly Report June to August 2020 dated 26Nov2020. Email Operator to DITT subject RE MRM TSF Quarterly Report September to November 2020 dated 22Feb2021. Email DITT to Operator subject RE MRM TSF Quarterly Report September to November 2020 dated 23Feb2021. | |

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEFF)
Waste (general, mine rock, tailings)
Community (local indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEFF) | Waste (general, mine rock, tailings) | Community (local indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|---|---|---|-------------|----------------------------|--|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|--|--|
| | | 80.a | water levels in the TSF; | | 1 | | | | | 1 | | 1 | 4 | Full Compliance | MRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020. Email Operator to DITT subject FW: MRM TSF Quarterly Report December 2020 to February 2021 dated 19Apr2021. Email Operator to DITT subject MRM TSF Quarterly Report June to August 2020 dated 26Nov2020. Email Operator to DITT subject RE MRM TSF Quarterly Report September to November 2020 dated 22Feb2021. Email DITT to Operator subject RE MRM TSF Quarterly Report September to November 2020 dated 23Feb2021. MRM Tailings Storage Facility Quarterly Report September 2020 – November 2020 checked by the Independent Monitor and compliance is evident based on average levels in the TSF in Table 3-1. There are also graphs of water levels in the decant ponds in section 3.2.1. | |
| | | 80.b | all monitoring data associated with the seepage (including geotechnical and environmental monitoring); | | 1 | | 1 | | | 1 | | 1 | 4 | Full Compliance | MRM TSMRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020F. MRM TSF Quarterly Report - September to November 2020 "Water quality results during the reporting period remained within the range of the previous 12 months of data, with no unexpected results detected. Water quality of the Water Management Dam remained of suitable quality for discharge in accordance with Waste Discharge Licence 174-11." MRM TSF Quarterly Report - September to November 2020F Section 3.3 includes water quality data. | |
| | | 80.c | flow rate of each seep; | | 1 | | 1 | | | 1 | | 1 | 4 | Full Compliance | MRM TSMRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020F. MRM Tailings Storage Facility Quarterly Report September 2020 – November 2020 checked by the Independent Monitor and compliance is evident based on seepage management Section 3.2.2 that includes seepage flow rates. | |
| | | 80.d | all actions undertaken during the quarter associated with the seepage and management of Tailings; | | 1 | | 1 | | | 1 | | 1 | 4 | Full Compliance | MRM TSMRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020F. MRM TSF Quarterly Report - September to November 2020F includes Attachment B - TSF Recommendation Instruction and Action Register that meets the requirements of this condition. | |
| | | 80.e | all actions planned for the next quarter associated with seepage and management of Tailings.[1] | | 1 | | 1 | | | 1 | | 1 | 4 | Full Compliance | MRM TSMRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020F. MRM TSF Quarterly Report - September to November 2020F includes Attachment B - TSF Recommendation Instruction and Action Register that meets the requirements of this condition. MRM TSF Quarterly Report - September to November 2020F includes TABLE 3-3. ONGOING OPERATIONAL ACTIONS 2020. | |
| | 58 | | The operator is authorised to construct, but not operate Cell 1 Stage 5 embankment lift in accordance with: | | | | | | | 1 | | | | Refer to sub conditions | | |
| | 58.a | | concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2020, Version 1.0 as defined in Condition 1.(ii)(13), ensuring: | | | | | | | 1 | | | | Refer to sub conditions | | This condition is covered in condition 77 of the 13Nov2020 Authorisation as raise 5. It is included here for context only for other subconditions. |
| | 58.a.i | | Detailed designs follow the approved McArthur River Mining Pty Ltd Tailings Storage Facility Raising General Specification for Design and Construction and must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives; | | | | | | | 1 | | | 4 | Full Compliance | MRM TSF Quarterly Report - September to November 2020 MRM TSF Quarterly Report - September to November 2020 section 4.2 states "The TSF Cell 1 Stage 5 design includes a 3 m embankment raise to RL 10,059 m, along with a small buttress / toe weighting berm. The design was completed in June 2020, and endorsed by the ITRB on 2 July 2020. DITT issued VOA 0059-02, dated 10 August 2020, which approved the Cell 1 Stage 5 raise construction under the 2001 Mining Management Act. Construction works commenced on 12 August 2020. The embankment bulk earthworks were completed during the reporting period. The buttress / toe weighting berm will be completed in December 2020." | This condition is only relevant until 13Nov20. Condition 77 of the 13Nov2020 Authorisation includes reference to detailed design but not anything about "environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives." |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|------------------|--|---|
| | 58.a.ii | | The detailed designs must be reviewed and endorsed by the ITRB and provided to the Department prior to commencement of construction; and | | | | | | | 1 | | | 4 | Full Compliance | GHD's Draft Detailed Design Report for the McArthur River Mining Pty Ltd (MRM) TSF Cell 1 Stage 5 Raise to RL 10059 was endorsed by the ITRB as more than adequate on the 02/07/20. Email Operator to DITT subject MRM TSF Cell 1 Stage 5 Lift - Detailed Design and ITRB Endorsement dated 7Jul20 Evidence of submission to DITT on 7/07/20 has been provided. | This condition is only relevant until 13Nov20. |
| | 58.a.iii | | Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ITRB must provide and implement a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department. | | | | | | | 1 | | | N/A | Not Applicable | | This condition is only relevant until 13Nov20. Similar to conditions 50 and 76 of the 13Nov20 Authorisation. However, this condition requires action by the ITRB while the others are actions for the ICE. There were changes made to the Cell 2 stage 7 lift in the audit period, which are audited for the period after 13Nov20 so not included in this condition. |
| | 58.b | | at completion of the construction works the ICE must approve an "as constructed" construction report and updates to the TSF Operations, Maintenance and Surveillance Manual and TARPs. The construction report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied to the Department. | | | | | | | 1 | | 1 | N/A | Not Applicable | | This condition is only relevant until 13Nov20. Discontinued condition and construction was not complete until the new Authorisation was in effect. |
| Geochemical, Geotechnical and Hydrogeological Assessments and Investigation Drilling | | | | | | | | | | | | | | | | |
| 60 | 61 | | All documentation relating to the geochemical assessment and alluvial investigation is to be made available to the Department on request. | | | | 1 | | | 1 | | 1 | N/A | Not Applicable | | This condition is only relevant until 13Nov20. Operator advised there have not been requests from the DITT. |
| | 81 - previously 59 | | The Operator is authorised to undertake Drilling Investigations as outlined in relevant approved plans defined in Schedule B and approved MMP, ensuring adherence to industry best practice: | | | | 1 | | | | | | 4 | Full Compliance | 2020-21 EMR - Appendix T - 2020 Hydrogeological Drilling and Field Campaign. January 2020 MMP. | The Operator advised "The 2020 Hydrogeological Drilling and Field Campaign was undertaken in accordance with the approved January 2020 Mining Management Plan," Section 4.2.1 of the January 2020 MMP "These activities will be used to investigate aspects such as: • ore and waste sequencing; • waste characterisation; • resource definition; • alluvium characterisation; and • potential mineralisation within and external to the existing operational areas." The executive summary of the EMR 2020 - 2021 stated "Exploration activities and a regional drilling program for hydrogeological testing, characterisation of overburden and the installation of geotechnical and environmental monitoring sites." and section 2.2 "MRM undertook a series of regional drilling programs during the reporting period within MLN 1121, MLN 1122, MLN 1123, and MLN 1124, which included 20 drill holes for waste characterisation, geotechnical investigation, and resource development (Appendix A). MRM completed a total of 4,697 metres (m) of drilling, comprising 15 diamond core holes, 2 diamond tailed RC holes and 3 RC holes. The drilling program was designed to: • develop mineral resources and waste characterisation within the Life of Mine Open Pit; • investigate geological structures and rock strengths throughout the Life of Mine Open Pit and immediately adjacent; and • install vibrating wire piezometers (VWP) along the western wall of the Open Pit". The Independent Monitor did not observe anything in the EMR 2020 - 2021 to contradict that the campaign was conducted in accordance with plans defined in Schedule B, including the January 2020 MMP. |
| | 81.i | | in order to collect samples for waste rock characterisation and geochemical and geotechnical analyses; | | | | 1 | | | 1 | | 1 | 4 | Full Compliance | January 2020 MMP. | Section 4.2.1 of the January 2020 MMP "These activities will be used to investigate aspects such as: • ore and waste sequencing; • waste characterisation; • resource definition; • alluvium characterisation; and • potential mineralisation within and external to the existing operational areas." Refer additional comments in condition 81 above. |
| | 81.ii | | to characterise available construction and rehabilitation materials available within the Mine Levee Wall (including the pit) and areas surrounding the TSF and NOEF; | | | | | | 1 | | | 1 | 4 | Full Compliance | January 2020 MMP. | Section 4.2.1 of the January 2020 MMP "These activities will be used to investigate aspects such as: • ore and waste sequencing; • waste characterisation; • resource definition; • alluvium characterisation; and • potential mineralisation within and external to the existing operational areas." Refer additional comments in condition 81 above. |
| | 81.iii | | to enable geochemical assessment of the overburden emplacement facility and underlying sediments; | | | | 1 | | | 1 | | 1 | 4 | Full Compliance | January 2020 MMP. | Section 4.2.1 of the January 2020 MMP "These activities will be used to investigate aspects such as: • ore and waste sequencing; • waste characterisation; • resource definition; • alluvium characterisation; and • potential mineralisation within and external to the existing operational areas." Refer additional comments in condition 81 above. |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
 Surface Water (River, Creek, Artificial dams)
 Marine Waters (Bing Bong, marine sediments)
 Groundwater
 Aquatic fauna (fish river)
 Vegetation & Rehabilitation (terrestrial, diversion & NOEFF)
 Waste (general, mine rock, tailings)
 Community (local Indigenous & public)
 Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | | | | |
|--------------------|--------------------|--|--|--|--|--|--|--|--|--|---|-----|-------------------------|---|--|
| | 81.iv | to obtain hydrogeological information associated with pit inflows, groundwater inputs into the underground void and installation of additional monitoring bores to inform site management. | | | | | | | | | 1 | 4 | Full Compliance | EMR 2020 - 2021 - Appendix T - 2020 Hydrogeological Drilling and Field Campaign. The Independent Monitor was advised by the Operator that the characterisation data is the bore logs in EMR 2020 - 2021 - Appendix T - 2020 Hydrogeological Drilling and Field Campaign. | EMR 2020 - 2021 - Appendix T - 2020 Hydrogeological Drilling and Field Campaign "The overall objective of the 2020 hydrogeological drilling and field program was to continue to further characterise the groundwater systems at the Mine, quantify aquifer parameters and further refine the groundwater component of the source-pathway-receptor model to better understand potential impacts from MRM's operations on the receiving environment. and Table 1-1 refers to installation of monitoring bores as a target and objective." Refer additional comments in condition 81 above. |
| | 82 | The Operator must ensure the disturbances from the drilling and site investigation activities are rehabilitated consistent with industry best practice. | | | | | | | | | | 3 | Part Compliance (High) | Exploration Management Plan SPC-3100001 May 2021, Version 2. (after audit period) Permit to Clear Procedure. Excavation and Trenching Procedure. | Exploration Management Plan SPC-3100001 May 2021, Version 2 "Section 4.1 of the Exploration Management Plan states Rehabilitation requirements. Requirements can include (but not limited to): - Drill holes encountering multiple or confined aquifers will be grouted with concrete; - Drill samples/spoil will be returned down drill holes, buried in sumps, or removed from site;" The Operator advised "In the new permit system, which was rolled out last year, the permit holder of the respective permit is required to sign off on a post site inspection. The purpose for the post site inspection is to identify if any of the permit conditions haven't been met (e.g. Rehab of disturbed site etc.). No post-inspection sign off forms are available from the reporting period as no exploration drillings works have been completed yet. The Exploration Management Plan was only finalised in May 2021, with the first exploration drilling commencing under the Plan in September 2021 (note outside the audit period). As such, no rehabilitation has been required at this stage." No OFI has been prepared as the Operator has developed and is implementing an Exploration Management Plan for rehabilitation for disturbances from the drilling and site investigation activities. |
| | 83 - previously 60 | Characterisation data from the drilling must be kept and available to the Minister on request and reported in the Operator's EMR. | | | | | | | | | 1 | 4 | Full Compliance | EMR 2020 - 2021 - Appendix T - 2020 Hydrogeological Drilling and Field Campaign. The Independent Monitor was advised by the Operator that the characterisation data is the bore logs in EMR 2020 - 2021 - Appendix T - 2020 Hydrogeological Drilling and Field Campaign. | The Operator advised the Independent Monitor that characterisation data is on MRM's server (bore logs). There has been no request from DITT to provide it. |
| | 84 | All documentation relating to the investigations undertaken is to be made available to the Department on request. | | | | | | | | | 1 | N/A | Not Applicable | | Operator advised they have not had any requests from the DITT. Documentation retained within the Mining DITT on MRM's server. |
| | 85 | On completion of the investigation the disturbances are to be rehabilitated in accordance with the approved MMP and the basis for the proposed adjustment of total security adjustments required under Condition 11, are provided in the annual Unplanned Closure Plan report to the satisfaction of the Department. | | | | | | | | | | N/A | Not Applicable | | The investigation is not complete. A formal report will be issued once complete. Not going to seek to relinquish security from these areas unless Operator able to demonstrate it is rehabilitated. Full security remains in place. |
| Exploration | | | | | | | | | | | | | | | |
| | 86 - previously 11 | The Operator must ensure that: | | | | | | | | | | | Refer to sub conditions | | |
| | 86.a | works are undertaken in accordance with management systems detailed in the approved MMP; | | | | | | | | | | 4 | Full Compliance | 2020-2021 Drilling Register 2020-2021 Drilling Register showed that the exploration drillholes were all grouted. | January 2020 MMP states "Following the completion of the drilling program and prior to the wet season, drill hole collars will be surveyed, plugged and backfilled with clean fill. Compacted ground will be ripped, with stockpiled topsoil and vegetation spread over the cleared area." The Operator advised "The 2020-2021 Drilling Register provided lists information on the drillhole completion methods. The Exploration Drillholes ("Hole_Purpose" = Resource) were all grouted." |
| | 86.b | an environmental management plan is in place that addresses: | | | | | | | | | | | Refer to sub conditions | Exploration Management Plan SPC-3100001 May 2021, Version 2. (after audit period) | |
| | 86.b.i | chemical use and storage (e.g. hydrocarbons, drilling fluids); | | | | | | | | | | 4 | Full Compliance | Exploration Management Plan SPC-3100001 May 2021, Version 2. (after audit period) 210926 - Environ Inspect - Exploration Drilling (after audit period) FRM-2600122-2020_DRILLING_JSA The JSA provided included mainly safety controls but did include "Appropriate bunding and storage, spill mats available, containers and packaging in good condition, spill response plan in place, dispose of rubbish as per site procedures PR-016 Chemical & Hydrocarbons Mgt. Procedure PR-019 Waste Management Procedure" The JSA is considered sufficient in terms of meeting the intent of an environmental management plan related to chemical use and storage in the audit period. | Section 3.1.2 of the Exploration Management Plan (from after the audit period) says "Hydrocarbon spills will be minimised using liners and drip trays under machinery, and appropriately sized spill-kits available in the event of a spill; * Hazardous substances (including hydrocarbons) will be stored and handled in accordance with relevant Australian standards; * Hydrocarbons will be stored in lined and banded areas" and "Spill kits are located on drill sites for the duration of drilling activities and maintained in accordance with MRM's General Spill Response Procedure (PRO-2600047)." |

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15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
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Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
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 Marine Waters (Bing Bong, marine sediments)
 Groundwater
 Aquatic fauna (fish river)
 Vegetation & Rehabilitation (terrestrial, diversion & NOEFF)
 Waste (general, mine rock, tailings)
 Community (local Indigenous & public)
 Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEFF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|---|---|---|-------------|----------------------------|--|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|---|---|
| | | 86.b.ii | erosion and sediment control; | | 1 | | | | | | | | 3 | Part Compliance (High) | Exploration Management Plan SPC-3100001 May 2021, Version 2. (after audit period) There was no evidence provided of an environmental management plan or equivalent document addressing erosion and sediment control for during the audit period. | Section 3.1.1 of the Exploration Management Plan (from after the audit period) says "During the planning and construction of the drill area and when necessary, access tracks, the following will be considered: [...] *Vegetation clearing during, and immediately after rainfall events, will be avoided; *Vegetation clearing will be kept to a minimum required to safely traverse vehicles and drill rigs along tracks and drill pads; [...] *Methods to control erosion and sediment flow;" and "Appropriately size sumps and tanks to contain sufficient volumes of water, sediment and drilling fluids encountered during drilling;" The rehabilitation requirements are included "Access tracks will be rehabilitated, including pushing in all windrows, unless otherwise agreed in writing by the land holder or appropriate third party; * Appropriate erosion and sediment controls will be installed where erosion is evident or likely to occur; * Access through watercourses will be removed and banks restored; * All previously disturbed areas will be stable, with no evidence of active soil erosion" OFI: Implement the Exploration Management Plan that now includes environmental controls and retain evidence (e.g. Job Safety Analysis (JSA), environmental inspections, etc). |
| | | 86.b.iii | dust; | 1 | | | | | | | | | 3 | Part Compliance (High) | Exploration Management Plan SPC-3100001 May 2021, Version 2. (after audit period) There was no evidence provided of an environmental management plan or equivalent document addressing dust management for during the audit period. | Section 3.1.2 of the Exploration Management Plan (from after the audit period) says "Controls to minimise airborne dust". OFI: refer condition 86.b.ii. |
| | | 86.b.iv | associated risks common for exploration works; | | | | | | | | | | 3 | Part Compliance (High) | Exploration Management Plan SPC-3100001 May 2021, Version 2. (after audit period) There was no evidence provided of an environmental management plan or equivalent document addressing general environmental risks for during the audit period. | There are controls for various other common risks included in the Exploration Management Plan (from after the audit period). OFI: refer condition 86.b.ii. |
| | | 86.c | rehabilitation is undertaken for locations not needed for further use; | | | | | | 1 | | | | N/A | Not Applicable | | The Operator advised that there are no locations not needed for further use. |
| | | 86.d | a rehabilitation report including details regarding the status of disturbance rehabilitated drill holes and the basis for the proposed adjustment of total security in accordance with Conditions 10, 11 and 12, to the satisfaction of the Department. | | | | | | 1 | | | | N/A | Not Applicable | | The Operator advised that there has not been a proposed adjustment of total security related to rehabilitated drill holes. There is no rehabilitation report. |
| Non-mineral Waste Management | | | | | | | | | | | | | | | | |
| 12 | 12 | | The Operator is authorised to complete works to prepare and construct a Centralised Waste Facility (CWF) for management of general, contaminated and putrescible wastes, in accordance with: | | | | | | | | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020. No detailed designs have been prepared. Condition is superseded by new Authorisation. |
| 12.a | 12.a | | concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12, ensuring: | | | | | | | 1 | | | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. No detailed designs have been prepared. |
| 12.a.i | 12.a.i | | Detailed designs follow the approved concepts for the facility (including 100 year ARI flood immunity, CCL and protective armour, drainage works and bio-security control). The detailed design must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives; | | | | | | | 1 | | | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. No detailed designs have been prepared. |
| 12.a.iii | 12.a.iii | | The detailed designs must be reviewed and endorsed by an Independent Certifying Engineer (ICE) without limitation on responsibility and provided to the department prior to commencement of construction. | | | | | | | 1 | | | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. No detailed designs have been prepared. |
| 13 | 13 | | An ICE must warrant and accept both the design and construction works, without limitation on responsibility: | | | | | | | | | | | Refer to sub conditions | | |
| 13.e | 13.e | | at completion of the construction works the ICE must approve an "as-constructed" construction report that is to be submitted to the Department. The report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied; and | | | | | | | 1 | | 1 | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. Construction has not commenced. |
| 13.f | 13.f | | the existing waste facilities must be decommissioned and rehabilitated, but only after an approval of rehabilitation plan by the Department. The rehabilitation plan must include details on proposed adjustment of total security as a result of the works. | | | | | | | 1 | | | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. Construction has not commenced. |
| | | 87 | The Operator is authorised to complete works to prepare and construct a Centralised Waste Facility (CWF) for management of general, contaminated and putrescible wastes, in accordance with: | | | | | | | | | | | Refer to sub conditions | | CWF has not been constructed. Operator currently investigating needs and priorities for this and other infrastructure potentially at the same location. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
Waste (general, mine rock, tailings)
Community (local indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | | | | |
|--|------|-------------------------------|---|--|--|---|--|--|--|---|---|-----|-------------------------|--|--|
| | | 87.a | concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Schedule B, ensuring detailed designs: | | | | | | | 1 | | N/A | Not Applicable | | CWF has not been constructed. Operator currently investigating needs and priorities for this and other infrastructure potentially at the same location. |
| | | 87.a.i | follow the approved concepts for the facility (including 100 year ARI flood immunity, CCL and protective armour, drainage works and biosecurity control); | | | | | | | 1 | | N/A | Not Applicable | | CWF has not been constructed. Operator currently investigating needs and priorities for this and other infrastructure potentially at the same location. |
| | | 87.a.ii | the structure design and construction is undertaken in accordance with independent oversight consistent with Conditions 48 and 50; | | | | | | | 1 | | N/A | Not Applicable | | CWF has not been constructed. Operator currently investigating needs and priorities for this and other infrastructure potentially at the same location. |
| | | 87.a.iii - previously 12.a.ii | include allowances for the installation of an adequate number of monitoring bores at suitable locations to monitor the environmental performance of the structure with respect to contaminant seepage. These monitoring locations must be integrated and reported within the site-wide water monitoring requirements. | | | 1 | | | | 1 | | N/A | Not Applicable | | CWF has not been constructed. Operator currently investigating needs and priorities for this and other infrastructure potentially at the same location. |
| | | 88 | The Operator must ensure the non-mineral waste facility, landfill or equivalent previously in use is rehabilitated following approval by the Department of a rehabilitation plan. | | | | | | | 1 | | N/A | Not Applicable | | Future item. Still in use. |
| Rehabilitation Trials | | | | | | | | | | | | | | | |
| | | 89 - previously 14 | The Operator is authorised to undertake the following rehabilitation trials, in accordance with concepts defined in relevant documents in Schedule B and the approved MMP: | | | | | | | | | | Refer to sub conditions | | |
| | | 89.a | Construction Test Pads (CTP) on NOEF West stage; | | | | | | | 1 | 1 | 4 | Full Compliance | EMR 2020 -2021. DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) EMR 2020 - 2021 section 2.5.1 states "NOEF West stage: Continued construction of the MS-NAF Halo and advection barriers on the top and southwest faces; conducted the Geosynthetic Liner Constructability Trial on the western face." | The Operator advised that construction test pads "were completed during the reporting period. A report is currently in draft for the trial and is not available for distribution." Independent Monitor advised by the Operator that all runoff from rehabilitation trial areas are contained in the water management system, as required by the January 2020 MMP. DITT Site Inspection Report dated 3Feb2021 states "Deteriorating weather conditions prevented further inspection of NOEF. Instead, recent drone footage undertaken for NOEF was shown to DITT staff, which indicated a second BGM trial underway at the batter of the north western corner of the NOEF." |
| | | 89.b | PAF(RE) Cell and Cover System Performance on NOEF Southeast stage; | | | | | | | 1 | 1 | 4 | Full Compliance | EMR 2020 -2021. NOEF PAF(RE) Cell Field Trial - Phase 1 Summary Report - 2019/2020 Monitoring Period dated March 2021. DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) EMR 2020 - 2021 states "completed construction of Phase 1 of the PAF(RE) Trial Cell." Section 3.1 of the NOEF PAF(RE) Cell Field Trial - Phase 1 Summary Report - 2019/2020 Monitoring Period also states "A brief summary of the construction works for Phase 1 of the Field Trial is provided as follows: [...] A Construction of temporary surface water management infrastructure. To meet regulatory requirements, namely assessment of the WSC performance during the summer wet-season period, the Phase 1 aspect of the Field Trial was intended to be completed prior to onset of the 2019/2020 wet season. However, the construction period was extended primarily due to delays in obtaining sufficient quantities of the most reactive material available. By delaying construction of the PAF core until which time as the most reactive material was available provided the best opportunity to test the proposed waste placement strategy against a worst case scenario. As a result, the Phase 1 landform was not completed prior to the wet season." DITT Site Inspection Report dated 3Feb2021 states "A bituminous gravel material (BGM) trial, consistent with OMP and Authorisation 0059 was observed on top of the NOEF." | Independent Monitor advised by the Operator that all runoff from rehabilitation trial areas are contained in the water management system, as required by the January 2020 MMP. January 2020 MMP states "Construction of a PAF (RE) cell as per the OMP EIS design, on an impervious geosynthetic-lined base. The PAF (RE) cell will be constructed in 3 x 2 m lifts and will include fine-grained low-air-permeability barriers (advection barriers) and a wet season cover, replicating the OMP EIS design. The PAF (RE) lifts will be instrumented for temperature, moisture and gas analysis. It will be left to stand for at least one wet season (2019/20) to determine the effectiveness of both the wet season cover and the low-air-permeability barriers. PAF (RE) was selected for the cover system trial because it represents the most reactive material that will be encapsulated by the NOEF cover system." |
| | | 89.c | Mine Levee revegetation. | | | | | | | 1 | 1 | N/A | Not Applicable | | The Operator advised "No works were completed for the Mine Levee revegetation project during the reporting period, due to several delays which have caused the project timing to be too close to the commencement of the NOEF revegetation trial. Therefore, MRM will utilise the outcomes of the NOEF revegetation trials, as the area provides the most appropriate substrate for testing." |
| | | 90 - previously 14 | The Operator must ensure all contaminated runoff is contained and managed within the water management circuit and as detailed in the Water Management Plan. | | | 1 | | | | | | 4 | Full Compliance | The Operator advised that the NOEF rehab trial area runoff all drains to within the on site water management system. Specifically the plateau surface water management system was not in place prior to the wet season (NOEF PAF(RE) Cell Field Trial - Phase 1 Summary Report - 2019/2020 Monitoring Period dated March 2021.). The Operator advised this did not allow any uncontrolled runoff outside of the water management system. | The NOEF is contained within the water management system on site. |
| Bing Bong Loading Facility | | | | | | | | | | | | | | | |
| | | 91 | Dredging activities at the Bing Bong Port Facility are authorised, subject to: | | | | | | | | | | Refer to sub conditions | | Operator advised no dredging has occurred in the audit period. A dredging management plan is being prepared potentially for dredging that may occur in 2022. |
| | | 91.a | submission to the department of a Dredging and Dredge Spoil Management Plan; | | | 1 | | | | | | N/A | Not Applicable | | Operator advised no dredging has occurred in the audit period. A dredging management plan is being prepared potentially for dredging that may occur in 2022. |
| | | 91.b | approval of the Plan by the Department prior to commencement of dredging. | | | 1 | | | | | | N/A | Not Applicable | | Operator advised no dredging has occurred in the audit period. A dredging management plan is being prepared potentially for dredging that may occur in 2022. |
| Environmental Monitoring and Management | | | | | | | | | | | | | | | |
| 61 | 62 | | The Operator must collect and maintain the following to the satisfaction of the Minister: | | | | | | | | | | Refer to sub conditions | | |
| 61.a | 62.a | | all environmental monitoring data which is contemplated in this document or the MMP or reasonably required for the proper implementation of this document or the MMP; and | | | | | | | | | 1 | 4 | Full Compliance | Operator does not dispose of records. Records are kept on an offsite Glencore server. All raw environmental monitoring data and laboratory analysis results from the lab are uploaded into the Monitor Pro Database. This condition is only relevant until 13Nov2020. Most monitoring programs are reported in the EMR. |

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEFF)
Waste (general, mine rock, tailings)
Community (local Indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEFF) | Waste (general, mine rock, tailings) | Community (local Indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|---|---|---|-------------|----------------------------|--|--------------------------------------|---------------------------------------|------------------------|-------|-------------------------|---|---|
| 61.b | 62.b | | any other environmental monitoring records and data prepared or obtained by or in the possession of the Operator at any time in connection with the Mine (including for example, monitoring records or data submitted to the Commonwealth government). | | | | | | | | | 1 | 4 | Full Compliance | Data is retained on Operator server in folders. If the water team request monitoring of water quality of the dams, Environment might go out and collect a sample and those results are uploaded into MonitorPro. Potable water samples are also done by the environment team. All data is recorded and stored permanently. | This condition is only relevant until 13Nov2020. |
| 62 | 63 | | The Operator must ensure data contemplated by condition 58 is provided to a mining officer upon request and will not be destroyed without the written permission of the Minister. | | | | 1 | | | 1 | | 1 | 4 | Full Compliance | Glencore Zinc HSEC Management System Procedure MSP-03 : Compliance (Legal and Other Requirements) and Document Control version 1 dated 30Jun2014. | This condition is only relevant until 13Nov2020. The Operator advised there had been no request from DITT. The Glencore Zinc HSEC Management System Procedure MSP-03 : Compliance (Legal and Other Requirements) and Document Control includes "Maintaining compliance verification records associated with evaluation and monitoring activities e.g. report findings, corrective actions, training and communication;" and "All Glencore Zinc managed sites shall implement processes to ensure HSEC: *documentation is:-controlled;-available;-understandable; and -relevant external documentation is registered and current. *records are:-accurate;-legible;-identifiable;-accessed through suitable privacy protocols and restrictions (where required);-securely stored;-readily retrievable; and-have designated retention times, and assigned owners." Note, in 15Aug2019 Authorisation this condition referenced condition 58 which is condition 59 in the 10Aug2020 Authorisation and is condition 81 in the 13Nov2020 Authorisation. OBS: The Glencore Zinc HSEC Management System Procedure MSP-03 : Compliance (Legal and Other Requirements) and Document Control version 1 dated 30Jun2014 had a review date of 30Jun2015. The Operator may consider reviewing and updating this document. |
| 66 | 67 | | The Operator must amend the MMP to include a livestock management plan clearly detailing how the ongoing exclusion of cattle from the Exclusion Area will be managed and monitored. The plan is to include monitoring schedules and remedial actions should monitoring detect cattle within the Exclusion Area, it should also detail the staff member or position responsible for ensuring compliance with the plan. | | | | | | | | | 1 | 4 | Full Compliance | EMR 2020 - 2021. Cattle Management Plan (September 2019) January 2019 MMP included the April 2017 to April 2018 Cattle Management Plan. Section 5 of the Cattle Management Plan (September 2019) discusses cattle management including fencing, fence maintenance, mustering and aerial inspections. Figure 7 of the Cattle Management Plan (September 2019) provides a flow chart of cattle management actions. Section 8 of the Cattle Management Plan (September 2019) has a table of responsibilities. | This condition is only relevant until 13Nov2020. April 2017 to April 2018 Cattle Management Plan included in the January 2019 MMP. The April 2018 Cattle Management Plan Figure 3 shows the cattle fence and electric fence surrounding the site (47km of fence), muster yard and lick blocks. Fence maintenance is included in Section 3.1.2. Fences and gates are inspected weekly with maintenance work undertaken as required. The fence will be replaced every 10 years. Section 5 of the April 2018 Cattle Management Plan includes responsibilities for verifying that actions are undertaken as described in the management plan by the Senior Rehabilitation Advisor and communicating roadblocks to compliance by the Manager - Environment, Safety & People and Senior Rehabilitation Advisor. Section 3.2 of the April 2018 Cattle Management Plan states opportunistic cattle monitoring is undertaken weekly during the wet season whilst a helicopter is undertaking other work at site. All cattle sightings are reported to the Rehabilitation team and sightings are recorded in the Cattle Register. Mustering undertaken approximately every 6 weeks in the dry season. The EMR 2020 - 2021 section 3 includes the Cattle Management Plan as "one of the suite of environmental management plans to manage the performance of the Mine". Cattle Management Plan (September 2019) was submitted in the January 2020 MMP. |
| 67 | 68 | | The Operator must remove all livestock and undertake all necessary actions or works to ensure the permanent exclusion of cattle from the Exclusion Area within MLN 1121, MLN 1122, MLN1123 and MLN1124. | | | | | | | | 1 | | 4 | Full Compliance | Internal email dated 26/07/2021 1:02 PM FW: IM VoA Audit RFI - Rehab. | This condition is only relevant until 13Nov2020. Figure 12 in the EMR 2020 - 2021 shows the cattle fence and electric fence. Section 3.10.5 mentions cattle muster events. Internal email dated 26/07/2021 1:02 PM FW: IM VoA Audit RFI - Rehab tabulated the fence inspections and cattle musters and showed: * 5 musters across the dry season in the audit period * 36 fence inspections across the audit period. |
| 69 | 70 | | For the purposes of managing dust, to the satisfaction of the Minister: | | | | | | | | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
Surface Water (River, Creek, Artificial dams)
Marine Waters (Bing Bong, marine sediments)
Groundwater
Aquatic fauna (fish river)
Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
Waste (general, mine rock, tailings)
Community (local indigenous & public)
Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Air Quality (dust & sulphur dioxide, transport) | Surface Water (River, Creek, Artificial dams) | Marine Waters (Bing Bong, marine sediments) | Groundwater | Aquatic fauna (fish river) | Vegetation & Rehabilitation (terrestrial, diversion & NOEF) | Waste (general, mine rock, tailings) | Community (local indigenous & public) | Monitoring & Reporting | Score | Compliance Level | Evidence | Comments | |
|---|---|---|--|---|---|---|-------------|----------------------------|---|--------------------------------------|---------------------------------------|------------------------|-------|------------------------|--|--|---|
| 69.a | 70.a | | the Operator must employ dust mitigation and monitoring measures at the Mine and in the course of all mining activities which generate dust, to minimise dust emission and impact on the Receiving Environment; | 1 | | | | | | | | 1 | 4 | Full Compliance | EMR 2020 - 2021. January 2020 MMP. Complaints log. EMR 2020 - 2021 Appendix E - Ambient Air Monitoring Report May 2020 – April 2021. The EMR 2020 - 2021 Table ES-5 shows investigations did occur related to dust impacts and Section 3.2.1 states "The objective of the monitoring program is to measure the levels of dust and concentration of COPCs in the ambient air near the operational areas of the Mine and the Bing Bong Loading Facility to determine the effectiveness of the air quality controls" and "Twenty-seven dust deposition gauges (21 near the Mine [including two control sites] and six near the BBLF [including one control site])". Table 13 of the EMR 2020 - 2021 shows that there has been progress on the mitigation measures identified in the EMR 2019 - 2020. The EMR 2020-2021 states in Section 3.2.2 "The MiniVol monitoring at the Mine and BBLF ceased in September 2020 and the TEOM01 and TEOM03 monitors were removed in January 2021 in accordance with the revised Air Quality Management Plan (AQMP)." and "Due to equipment malfunctions, equipment communications issues and NT border restrictions due to the COVID-19 pandemic, the real-time dust (also referred to as 'e-sampler') monitoring data was not available for majority of the year, and thus has been excluded from this EMR. The E-sampler monitoring ceased in September 2020 in accordance with the revised Air Quality Management Plan (AQMP)." Independent Monitor notes that there is no real-time dust (e-sampler) monitoring required by the AQMP. EMR 2020-2021 Section 3.2.5 discusses removing monitoring point DDG22, which is consistent with the AQMP as it was not included. | This condition is only relevant until 13Nov2020. Operator advised they have water carts on site. The water carts and binders are only used within the operational area. Air Quality Management Plan (2017) was in place prior to 13Nov2020 and is relevant to this condition. No dust incidents or complaints were reported. | |
| 69.b | 70.d | | If dust is entering the Receiving Environment resulting in or having the potential to cause environmental harm the Operator must undertake works or change its systems or practices to reduce dust to levels which no longer cause potential or actual environmental harm; and | 1 | | | | | | | | | 3 | Part Compliance (High) | Complaints Register 2021. EMR 2020 - 2021. The EMR 2020 - 2021 Table ES-5 shows investigations did occur related to dust impacts in terms of assessment related to air quality, soils, aquatic fauna - metals and fluvial sediments. They indicated a potential for environmental harm specifically related to within or directly adjacent operational areas. Table 13 of the EMR 2020 - 2021 shows that there has been progress on the mitigation measures identified in the EMR 2019 - 2020. There is evidence of investigations occurring and implementation of some mitigation measures during the audit period. However, it appears not all proposed measures in the EMR 2019 - 2020 have been completed in the audit period. Hence, the potential for environmental harm remains. | This condition is only relevant until 13Nov2020. Dust binder trial in prep. The complaints log shows no dust related complaints in the audit period. Letter from Operator to DITT Re: McArthur River Mine – 2019-20 Environmental Monitoring Report dated 31 August 2020 "[...] MRM undertook a holistic assessment of multiple monitoring programs and results identified that deposited dust from the Mill and haulage of materials across the Barney Creek bridge are the main contributors to elevated metals in fluvial sediment and biota along Barney Creek. The corrective actions and further investigations are outlined in Table 42 of the EMR and are planned to be carried out during the next reporting period to reduce the levels of deposited dust associated with these sources." No OFI has been prepared as this condition no longer exists in the 13Nov20 Authorisation. Evidence of implementation of mitigation measures in Table 13 of the EMR 2020 - 2021 will be part of the 2022 Independent Monitor audit including related to implementation of the Adaptive Management Plan. The Operator should continue to undertake the dust mitigation measures included in Table 13 of the EMR 2020 - 2021. | |
| 69.c | 70.c | | Any dust suppressant must be suitable for the location where it is to be used. | 1 | | | | | | | | | 4 | Full Compliance | Applied 3-324 Speciality Wetting Agent/Dust Suppressant ITW POLYMERS & FLUIDS SDS. EMR 2020 - 2021 The Operator advised that more sensitive locations (e.g. near to waterways) are benign material only. They are only concerned about suppressing dust in operational areas as it is non-benign. Runoff at the bridge is captured. Operational areas all drain to the water management system. The EMR 2020 - 2021 has the dust binder trial occurring in Q3 2021, outside of the audit period and Table 13 says "A scope of works has currently been developed for the trial of dust suppression binder 'Applied 3324 Dust Suppressant 100 ppm in Water' (Chemwatch code 5454-24), a suppression binding agent which is considered not to be hazardous. MRM are currently implementing the Change Management Procedure prior to commencing the trial." | This condition is only relevant until 13Nov2020. | |
| | | 92 | Environmental monitoring for the McArthur River Mine site (including BBLF) must be undertaken in accordance with requirements in Schedule D and reported as part of Condition 9. | | | | | | | | | | 1 | 4 | Full Compliance | EMR 2020 - 2021 Additional evidence is provided under the individual conditions from Schedule D. | |
| Adaptive Management | | | | | | | | | | | | | | | | | |
| | | 93 | Within 12 months of the date of authorisation of the Overburden Management Project, the Operator must submit a revised AMP as required under Conditions 45. | | | | | | | | | | 1 | N/A | Not Applicable | The trigger date for this condition was after the audit period and so this condition is N/A. The Operator advised that they resubmitted the AMP to DITT in August 2021. | Future item as not required until 13Nov2021. |
| | | 94 | The revised AMP must: | | | | | | | | | | | | Refer to sub conditions | | |
| | | 94.a | address the comments from the Independent Monitor or independent third party review of the draft AMP and ensuring compliance with Condition 45; | | | | | | | | | | | N/A | Not Applicable | | Future item as not required until 13Nov2021. The trigger date for this condition was after the audit period and so this condition is N/A. The Operator advised that they resubmitted the AMP to DITT in August 2021. |
| | | 94.b | be consistent with the AMP required under the Waste Management and Pollution Control Act 1998 and Environment Protection and Biodiversity Conservation Act 1999; | | | | | | | | | | | N/A | Not Applicable | | Future item as not required until 13Nov2021. |
| | | 94.c | be reviewed by a Department approved independent third-party at the discretion of the Minister; | | | | | | | | | | | N/A | Not Applicable | | Future item as not required until 13Nov2021. |
| | | 94.d | be approved by the Minister; | | | | | | | | | | | N/A | Not Applicable | | Future item as not required until 13Nov2021. |
| | | 94.e | once approved, be implemented in full. | | | | | | | | | | | N/A | Not Applicable | | Future item as not required until 13Nov2021. |
| | | 95 | Any material changes to the AMP required by Condition 94 must be re-approved by the Minister. | | | | | | | | | | | N/A | Not Applicable | | Future item. AMP not required until 13 Nov2021. |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

Air Quality (dust & sulphur dioxide, transport)
 Surface Water (River, Creek, Artificial dams)
 Marine Waters (Bing Bong, marine sediments)
 Groundwater
 Aquatic fauna (fish river)
 Vegetation & Rehabilitation (terrestrial, diversion & NOEF)
 Waste (general, mine rock, tailings)
 Community (local Indigenous & public)
 Monitoring & Reporting

Score

Compliance Level

Evidence

Comments

| Mine Closure | | | | | | | | | | | | | | | | | | | | |
|------------------------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|-------------------------|---|--|---|
| | 96 | From the date of authorisation of the Overburden Management Project, the Operator must submit an updated Mine Closure Plan with each MMP that builds upon the closure concepts defined in the Overburden Management Project. | | | | | | | | | | | | | | N/A | Not Applicable | Future item. No MMPs in the audit period. | | |
| | 97 | The Mine Closure Plan required under Condition 96 must: | | | | | | | | | | | | | | | Refer to sub conditions | Future item. No MMPs in the audit period so the trigger for the Mine Closure Plan has not occurred. | | |
| | 97.a | detail how key mine domains will be rehabilitated to achieve the Overburden Management Project closure objectives; | | | | | | | | | | | | | | | Not Applicable | Future item. No MMPs in the audit period so the trigger for the Mine Closure Plan has not occurred. | | |
| | 97.b | address outcomes of the reviews by independent technical and closure panels in accordance with Condition 21 with respect to mine closure; | | | | | | | | | | | | | | | Not Applicable | Future item. No MMPs in the audit period so the trigger for the Mine Closure Plan has not occurred. | | |
| | 97.c | incorporate relevant outcomes from rehabilitation trials defined in Condition 89. | | | | | | | | | | | | | | | Not Applicable | Future item. No MMPs in the audit period so the trigger for the Mine Closure Plan has not occurred. | | |
| | 98 | Five years prior to the planned closure of the mine, the Operator must: | | | | | | | | | | | | | | | Refer to sub conditions | Future item. Mine closure more than 5 years away. | | |
| | 98.a | finalise the Mine Closure Plan required under Condition 96; | | | | | | | | | | | | | | | Not Applicable | Future item. Mine closure more than 5 years away. | | |
| | 98.b | submit to the Department the plan for approval by the Minister; | | | | | | | | | | | | | | | Not Applicable | Future item. Mine closure more than 5 years away. | | |
| | 98.c | following approval, the Mine Closure Plan must be implemented by the Operator in full. | | | | | | | | | | | | | | | Not Applicable | Future item. Mine closure more than 5 years away. | | |
| Unplanned Mine Closure | | | | | | | | | | | | | | | | | | | | |
| | 99 | From the date of authorisation of the Overburden Management Project, the Operator must annually submit to the Department an Unplanned Mine Closure Plan on or before 31 August, starting 2021, to the Department, which is accompanied by a related security estimate. | | | | | | | | | | | | | | | 4 | Full Compliance | Email from Operator to DITT dated 16Apr21 MRM 2021 Unplanned Closure Plan and Independent Security Assessment. Enclosure 1 - MRM Unplanned Closure Plan 2021_FINAL_April. Enclosure 2 - MRM Security Calculation_2021_210416_Final. Enclosure 4 - Phronis Independent Security Audit Report 2021. Unplanned Closure Plan submitted annually to the DITT by the Operator with revised security included. Independent Monitor confirmed email evidence of submission via email 16Apr21 stated "In accordance with Condition 11 of Variation of Authorisation 0059, dated 13 November 2020, please find the attached cover letter requesting a revision to McArthur River Mining Pty Ltd's (MRM) security held by the DITT of Industry, Tourism and Trade (DITT).". | Unplanned Mine Closure Plan was submitted early for 2021 activities. The Operator advised "The revised Unplanned Closure Plan and associated security calculation enables the continuation of operations over the next approximately 12 month period. The total cost of the revised security calculation is \$405,116,668 (including the 10% discount), which is approximately \$5.1 million higher than the current security held by DITT." |
| | 100 | The Operator must comply with the clauses pertaining to it in Schedule C - Independent Monitoring Assessment Conditions. | | | | | | | | | | | | | | 1 | N/A | Not Applicable | Assessed through individual conditions in Schedule C. | |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste Management | Open Pit/Underground Workings | Tailings Storage Facility | Water Management and Storages | Overburden Placement Facilities | Exploration | Waterways (including river diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|--------------------|---------------------------------|----------------------------------|---------------------------|----------------------------------|------------------------------------|-------------|--|----------------------------|-------|---------------------------|--|--|
| SCHEDULE A | | | | | | | | | | | | | | | | |
| Definitions | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 - subsections changed | In this document, unless the contrary intention appears: | | | | | | | | | | | - | | Note that sub-conditions 1.a to 1.z are not listed as they are all definitions and are unable to be audited for compliance. |
| Interpretation | | | | | | | | | | | | | | | | |
| 2 | 2 | 2 - subsections changed | In this document, unless the contrary intention appears: | | | | | | | | | | | - | | Note that sub-conditions 2.a to 2.h are not listed as they are all interpretations and are unable to be audited for compliance. |
| General | | | | | | | | | | | | | | | | |
| 3 | 3 | 3 | Subject to any Conditions contained in the Act and this document,[4] the Operator must comply with the commitments and activities contained in the MMP including the implementation of all systems referred to in the MMP.[5] | 1 | | | | | | | | | 4 | Full Compliance | 2020-2021 Reconciliation of Commitments and Actions Environmental Monitoring Report – Appendix B. Ground Disturbance Permit_FRM-2600196. | Assessed by evaluation of all other conditions. EMR does include coverage of commitments in Appendix B 2020-2021 Reconciliation of Commitments and Actions. |
| 4 | 4 | 4 | The Operator may only conduct mining activities identified in the MMP within the Mine subject to any Conditions contained in the Act, this document and the Conditions commitments and systems contained in the MMP. | 1 | | | | | | | | | 4 | Full Compliance | PRO-2200033 Permit to Clear Procedure and Forms MINING MANAGEMENT PLAN - APPENDIX D January 2020. Sighted Ground Disturbance Permit 10Apr21 to 10May21. EMR 2020 - 2021. | Assessed by evaluation of all other conditions. The Operator advised that PRO-2200033 Permit to Clear Procedure and Forms are followed. The Operator advised that Ground Disturbance Permits to clear obtained within the reporting period are checked against the MMP for consistency. Operational update is provided in the EMR report and the EMR consistently references the January 2020 MMP. The Independent Monitor confirmed that the Permit to Clear requires authorisation from specific authorised positions, which include environmental specialists. The independent Monitor confirmed that the Permit to Clear includes "Proved [sic] the section or page number of the MMP which contains the description of work to which the clearing permit application relates." and "Once you have obtained the necessary information from the MMP tick this box to verify that the clearing is authorised under the MMP to the best of your knowledge." The EMR also provides a summary of major operational activities that occurred during the reporting period and the Independent Monitor did not identify any inconsistent with the MMP. |
| | | 5 | The mine site is to be developed and operated in accordance with relevant legislation e.g. Environment Protection and Biodiversity Conservation Act 1999, Northern Territory Aboriginal Sacred Sites Act 1984, Territory Parks and Wildlife Conservation Act 1976 and Heritage Act 2011. | 1 | | | | | | | | | 4 | Full Compliance | PRO-2200033 Permit to Clear Procedure and Forms MINING MANAGEMENT PLAN - APPENDIX D January 2020 Sighted Ground Disturbance Permit 10/4/21 to 10/5/21. EMR 2020 - 2021 Cultural Heritage Management Stakeholder Engagement Report 14Feb2021. EMR 2020 - 2021 Appendix 1 - Purple-crowned Fairy-wren Translocation Report. EMR 2020 -2021 states in section 1.3 "Reporting in this EMR covers the period of 1 May 2020 to 30 April 2021 [...]. The Mine operated in accordance with VOA 0059 dated 15 August 2019, 10 August 2020, and 13 November 2020, and the following approval documents over the reporting period: • EPBC Act Approval 2014/7210 (dated 12 June 2019), and subsequent variation (dated 18 December 2020). • EPBC Act Approval 2003/954 (dated 20 February 2009). • Waste Discharge Licence (WDL) 174-11 (dated 28 April 2019)." EMR 2020 - 2021 executive summary states "The Mine and BBLF operate in accordance with Variation of Authorisation 0059 and the January 2020 Mining Management Plan (MMP) and its approved amendments." | MMPs take the various legislation into account so operating in accordance with the MMP (checks via clearing permits) covered the legislation. OMP was referred under the EPBC Act and approved June 2019. The independent Monitor confirmed that the Permit to Clear includes "Proved [sic] the section or page number of the MMP which contains the description of work to which the clearing permit application relates." and "Once you have obtained the necessary information from the MMP tick this box to verify that the clearing is authorised under the MMP to the best of your knowledge." The EMR 2020 - 2021 includes the outcome of the monitoring programs that are undertaken over the audit period and supports commitments to the mine being in accordance with relevant legislation. |
| Mining management plan and reporting | | | | | | | | | | | | | | | | |
| 6 | 6 | 6 | The Operator must on 31 August 2021 and on each anniversary of that date (or such other date as nominated by the Operator and approved by the Minister), review the approved MMP and if necessary, amend the MMP. [6] | 1 | | | | | | | | | 3 | Part Compliance (High) | EMR 2019-2020, 31Aug20 EMR 2020-2021, 31Aug21. Section 2.3.2 Waste Characterisation and Identification of EMR 2019-2020 (dated 31Aug2020) states compliance with the MMP. The Operator advised "MRM submitted the January 2020 MMP to DITT on 31 January 2020, which was approved on 13 November 2020. As the January 2020 MMP covered approximately four year of operations, there was little benefit in completing an annual review on 31 August as per Condition 6." Although outside the audit period, the Executive Summary of the EMR August 2021 says "In consideration of the results presented in this EMR, the MMP has been reviewed and it was determined that no updates are currently required in order for MRM's key environmental management objectives to continue to be achieved." There was no evidence for review of the approved MMP on 31 August 2020, which was the relevant date in the audit period. | While the due date of 31Aug21 is after the audit period, previous Authorisations that were relevant in the audit period had this condition requiring the review on 31Aug annually. Operator advised that as part of the Ground Disturbance Permit checks the MMP is reviewed. As part of annual budget review informal review of MMP and budget allows for any MMP amendments. OBS: The EMR 2020 - 2021 includes the text that the approved MMP has been reviewed. However, a reference to review of the approved MMP was not included in the EMR 2019 - 2020. OFI: Continue to review the approved MMP annually on 31 August and include a reference to that in the EMR. If the EMR is not submitted on 31 August, the Operator should correspond with the Minister confirming the annual review of the approved MMP has occurred. |
| 7 | 7 | 7 | The Operator must submit quarterly all environmental monitoring data [7] which has been collected since the previous data submission. The data submission must be provided in the approved form (being an MS Excel template that can be provided on request) and include laboratory and field data for the following: | | | | | | | | | | | Refer to sub conditions | | |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Placement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General Non-mineral Waste Management Open Pit/Underground Workings Tailings Storage Facility Water Management and Storages Overburden Placement Facilities Exploration Waterways (including river diversion) Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|-----------------------|---|-------|---------------------|---|--|
| 7.a | 7.a | 7.a | surface water; | 1 | 1 | 4 | Full Compliance Email submission Operator to DITT (MRM DPIR Data Q1 2020) Email submission Operator to DITT (MRM DPIR Data Q2 2020) Email submission Operator to DITT (MRM DITT Data Q3 2020) Email submission Operator to DITT (2102002 MRM Environmental Monitoring Data Q4 2020) Email submission Operator to DITT (MRM Quarterly Data - Q1 2021) Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020) Email receipt DITT to Operator (DITT Receipt of Data Q3 2020) Email receipt DITT to Operator Re: MRM Quarterly Data - Q1 2021 2004 - 2006 DPIR Data 2007 - 2009 DPIR Data 2010 - 2012 DPIR Data 2101 - 2103 DITT Data Email from MRM to DITT 10/11/2020 "No sampling could be completed during Q3 2020 at off-site surface water monitoring locations SW08, SW27, SW28 and SW32 due to COVID-19 travel restrictions." Email from MRM to DITT 10/11/2020 "Total metals, cations, and anions were not reported for a number of sampling events in late July / early August 2020 owing to laboratory issues during that period." Email submission MRM to DITT (MRM DPIR Data Q2 2020) Continuous EC data has been provided from the 2019/2020 wet season. Continuous EC data is not available for SW04, SW12, and SW10 due to equipment failures during the wet season. | OBS: In the 2007 - 2009 DPIR Data spreadsheet a number of dust depositional gauge sampling locations have the sample matrix as water when it should be dust. |
| 7.b | 7.b | 7.b | groundwater; | 1 | | 4 | Full Compliance Email submission Operator to DITT (MRM DPIR Data Q1 2020). Email submission Operator to DITT (MRM DPIR Data Q2 2020). Email submission Operator to DITT (MRM DITT Data Q3 2020). Email submission Operator to DITT (2102002 MRM Environmental Monitoring Data Q4 2020). Email submission Operator to DITT (MRM Quarterly Data - Q1 2021). Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020). Email receipt DITT to Operator (DITT Receipt of Data Q3 2020). 2004 - 2006 DPIR Data. 2007 - 2009 DPIR Data. 2010 - 2012 DPIR Data. 2101 - 2103 DITT Data. Level measurement data tab for 2010 - 2012 DPIR Data showed groundwater results and groundwater bores are also included in the analysis data - filtered tab. | |
| 7.c | 7.c | 7.c | dust | 1 | | 4 | Full Compliance Email submission Operator to DITT (MRM DPIR Data Q1 2020). Email submission Operator to DITT (MRM DPIR Data Q2 2020). Email submission Operator to DITT (MRM DITT Data Q3 2020). Email submission Operator to DITT (2102002 MRM Environmental Monitoring Data Q4 2020). Email submission Operator to DITT (MRM Quarterly Data - Q1 2021). Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020). Email receipt DITT to Operator (DITT Receipt of Data Q3 2020). 2004 - 2006 DPIR Data. 2007 - 2009 DPIR Data. 2010 - 2012 DPIR Data. 2101 - 2103 DITT Data. 2010 - 2012 DPIR Data Dust monitoring for BBDDG8. Spot checks for comparisons between the monitoring undertaken and reported in these submissions were undertaken and no January data for DDG27 or DDG47 and HVAS01 added weekly from 19Feb21 in 2101 - 2103 DPIR is consistent with the EMR 2020 - 2021 Appendix E - Ambient Air Monitoring Report May 2020 - April 2021. Duplicates and blanks are included. | OBS: In the 2007 - 2009 DPIR Data spreadsheet a number of dust depositional gauge sampling locations have the sample matrix as water when it should be dust. |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden Emplacement | Facilities | Exploration | Waterways (including river | diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|------------------------|------------|-------------|----------------------------|------------|----------------------------|-------|------------------------|---|---|
| 7.d | 7.d | 7.d | soil; | | 1 | | | | | | | | | | | | | 3 | Part Compliance (High) | Sighted email of Q1 submission noting that soils and sediment are only sampled annually and will following in Q2 submission. Email submission Operator to DITT (MRM DPIR Data Q1 2020). Email submission Operator to DITT (MRM DPIR Data Q2 2020). Bing Bong Dredge Spoil Saline Impact Assessment 2020 Rev 0. EMR 2020 - 2021 Appendix D - Soil Monitoring Report May 2020 – April 2021. Soils sampling occurred in the audit period and did not appear to be submitted in any quarterly submissions. The Operator advised DITT "Sediment and soil sampling occurs once per annum and is scheduled to occur in the coming weeks. MRM will provide this data to the Department in the next quarterly submission." However, the soil data do not appear to be submitted in the Q2 data submission. Bing Bong Dredge Spoil Saline Impact Assessment 2020 Rev 0 included soils samples from 23rd and 24th of May 2020 that do not appear to be submitted. This sampling is required by the WDL every three years as part of the Bing Bong Vegetation Monitoring and was in the monitoring schedule included in the Water Management Plan and in the EMR. EMR 2020 - 2021 Appendix D - Soil Monitoring Report May 2020 – April 2021 states "Soil samples collected in October 2020 were analysed and a summary of the long-term data records is also presented to identify any trends in the short and long term data." | EMR 2020 - 2021 Table 34 states "The Soil Monitoring Program will be discontinued. Soil sampling will be undertaken on a case-by-case basis." OFI: Submit all quarterly monitoring data inclusive of soil sampling to the Department in the required format. |
| 7.e | 7.e | 7.e | sediments; | | 1 | | | | | | | | | | 1 | | | 3 | Part Compliance (High) | Sighted email of Q1 submission noting that soils and sediment are only sampled annually and will follow in Q2 submission. Email submission Operator to DITT (MRM DPIR Data Q1 2020). Email submission Operator to DITT (MRM DPIR Data Q2 2020). Email submission Operator to DITT (MRM DITT Data Q2). An improvement has occurred in that sediment samples for May 2021 have been submitted (outside the audit period). However, there is no evidence of sediment samples being submitted in the audit period. | Sediment samples are collected on an annual basis, and results are submitted to the DITT once per year. The Operator advised the DITT "Sediment and soil sampling occurs once per annum and is scheduled to occur in the coming weeks. MRM will provide this data to the DITT in the next quarterly submission." No OFI has been included as the requirement to include annual sediment results in the relevant quarterly data submissions has been addressed since quarter two in 2021. |
| 7.f | 7.f | 7.f | gas; and | | 1 | | | | | | | | | | | | | 4 | Full Compliance | Email submission Operator to DITT (MRM DPIR Data Q1 2020). Email submission Operator to DITT (MRM DPIR Data Q2 2020). Email submission Operator to DITT (MRM DITT Data Q3 2020). Email submission Operator to DITT (2102002 MRM Environmental Monitoring Data Q4 2020). Email submission Operator to DITT (MRM Quarterly Data - Q1 2021). Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020). Email receipt DITT to Operator (DITT Receipt of Data Q3 2020). 2004 - 2006 DPIR Data. 2007 - 2009 DPIR Data. 2010 - 2012 DPIR Data. 2101 - 2103 DITT Data. Two SO2 monitoring locations were included in each of the four submissions. There is no June data submitted. The DITT was advised via email submission Operator to DITT (MRM DPIR Data Q2 2020) "Due to equipment faults experienced with SO2VAN01, data is not available from 13 May – 18 May 2020. SO2Village equipment was sent off-site for maintenance during May 2020, SO2Village was offline for part of Q2 2020. SO2Village equipment is expected to be back online during Q3 2020." The EMR 2020-2021 "The SO2Village monitor was offline from 15 March 2020 to 23 July 2020, due to an instrument fault followed by the equipment being taken offline for calibration." | |
| 7.g | 7.g | 7.g | water transfers and discharges (including dates, times and volumes).[8] | | 1 | | | | | | | | | | | | | 3 | Part Compliance (High) | Email submission Operator to DITT (MRM Quarterly Data - Q1 2021) Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020) Email receipt DITT to Operator (DITT Receipt of Data Q3 2020) 2101 - 2103 DITT Data The recommendation in the 2020 AEPAR for the Operator to submit water transfer data quarterly has been implemented in the submission of the last quarter of the audit period. However, the condition is only considered a part compliance due to the data not being transferred for the first three quarters. Water discharge is included in the spreadsheets where discharges occurred (2010 - 2012 DPIR Data and 2101 - 2103 DITT Data). Provision of water discharge data is compliant. | No OFI has been included as the requirement to include water transfers in the quarterly data submissions has been addressed since quarter one in 2021. |

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden Emplacement | Facilities | Exploration | Waterways (including river | diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|------------------------|------------|-------------|----------------------------|------------|----------------------------|-------|-------------------------|--|---|
| | | 8 | From the date of authorisation of the Overburden Management Project, the Operator must provide an "as built" construction report, for the structures that the approved MMP specifies require "as built" construction reports, at the completion of each structure approved as per the MMP, within 30 days upon construction being finalised. | 1 | | | | | | | | | | | | | | N/A | Not Applicable | The Operator advised "Jan 2020 MMP Appendix G 'NOEF Management Plan' section 10.1 outlines the requirements of the NOEF design and as-built reporting. Specifically: "At the completion of the works, an as-built report will be produced that compiles all the relevant proof that the construction was as per design, or where differences were present, how they were managed and why the design objectives will still be met by the final works. The as-built reports are also required by the Authorisation." This section does not include a specific list of structures that require an as-built report, however the requirement is related to the specific NOEF LOM Stages. These are listed in Section 4.2.3.3 of the Jan 2020 MMP, and include: - West - Central West - North West - North East - Central East - South East - Mine Infrastructure Area (not for waste rock emplacement). Note that as none of these stages have been completed, there is no requirement for an as-constructed report to be provided to the Department." | Future item. Advised by the Operator that no stages of NOEF were completed in the audit period and are not expected to be completed for years to come (including installation of the approved cover system) therefore no as-constructed reports are available. In the interim, ICE sign off sheets provided. MMP states when an "as built" construction report is required. |
| | | 9 | The Operator must submit on or before 31 August 2021 and on each anniversary of that date (or such other date as nominated by the Operator and approved by the Minister), an EMR for the previous year in the reporting period as agreed with the Department. | 1 | | | | | | | | | | | | | | 4 | Full Compliance | Sighted email from Operator to Regulator of EMR 2019-2020 submitted 31 August 2021. | EMR for 2020-2021 was submitted 31 August 2021. |
| Security and levy | | | | | | | | | | | | | | | | | | | | | |
| | | 10 - previously 8 | The Operator must provide to the Minister a security of \$400,003,226 in the form of cash or an unconditional bank guarantee prior to undertaking any mining activities authorised by this Variation of Authorisations 0059-01 and 0059-02. [9] | 1 | | | | | | | | | | | | | | 4 | Full Compliance | Letter from DPIR to Operator dated 10Aug20 Re: Variation of Authorisation 0059 and Mining Management Plan Approval (10Aug2020_Security Reassessment). Letter from DPIR to Operator dated 15Aug19 Re: Variation of Authorisation 0059-01 and 0059-02 and Security Request (15Aug2019_Security.) Letter DITT to Operator subject Re: Variation of Authorisation 0059, Unplanned Closure Plan Approval and Security Request dated 18Jun2021. The previous Authorisations required the following: 15Aug2019: \$519,728,466 and 10Aug2020: \$519,669,461. Letter from DPIR to Operator dated 15Aug19 stated "In accordance with Condition 8 of the Schedule, the security for the McArthur River Mine has been reviewed in relation to activities proposed in the January 2019 Amendment, and I advise that an additional security of \$33,045,183 is required. Due to the staged approvals provided for this MMP Amendment, DPIR currently holds \$33,045,183 in credit. This credit will be claimed as part of meeting the security requirements of the MMA, equating to total security held for the McArthur River Mine at \$519,728,466. As such no further security is required and you may commence activities approved under the MMP amendment." The Independent Monitor confirms this as compliance. Letter from DPIR to Operator dated 10Aug20 stated "In accordance with condition 8 of the schedule the security for McArthur River Mine has been reassessed and it has been determined that the security amount required to be held against the project has reduced by \$59,005." The Independent Monitor confirms this as compliance. | Letter DITT to Operator dated 18Jun2021, while outside the audit period, states "As such, you are required to either: (a) provide the additional security amount of \$5,113,442; or (b) provide a replacement bank guarantee for the total amount of \$405,116,668." This is sufficient to support that the security had been in place. |
| | | 11 | The security provided for under Condition 10 will be reassessed, and may be revised, following the submission, assessment and approval of an: | | | | | | | | | | | | | | | | Refer to sub conditions | | |
| | | 11.a | independent third party assessment of the security by a qualified person approved by the Minister (also refer Condition 40); | 1 | | | | | | | | | | | | | | 4 | Full Compliance | Letter from Operator to DITT dated 3Feb2020 RE: INDEPENDENT THIRD-PARTY ASSESSMENT OF MCARTHUR RIVER MINE SECURITY (outside the audit period) Letter from DITT to Operator 11Feb2020 Re: Independent Third-party Assessment of McArthur River Mine Security (outside the audit period) Email from Operator to DITT dated 10Jul20 MRM Security - Independent Third-Party Assessment (20200710 MRM-DPIR Security - Independent Third-Party Assessment) Enclosure 4 - Phronis Independent Security Audit Report 2021 Email from DITT to Operator dated 10Jul20 MRM Security - Independent Third-Party Assessment (20200710 DPIR receipt - MRM Security - Independent Third-Party Assessment). | The letter from DITT to Operator 11Feb2020 Re: Independent Third-party Assessment of McArthur River Mine Security shows that the independent third party was approved by DITT before the audit period. Email from Operator to DITT dated 10Jul20 MRM Security - Independent Third-Party Assessment stating "In summary, Phronis Consulting concludes that "The Audit indicates the MRM Security Calculation to be in alignment with the Unplanned Closure Plan, the Quantities and Costs per UOM to be reasonable and the total estimated cost of \$444,448,029.29 to be sound". Independent Monitor confirms this is in the Phronis Independent Security Audit Report 2021. The email from the DITT to the Operator dated 10Aug20 stated "DPIR acknowledges receipt of documents in relation to the independent third-party assessment of the MRM security." |
| | | 11.b | amended MMP; | 1 | | | | | | | | | | | | | | 4 | Full Compliance | No MMP amendments were submitted in the audit period. However January 2020 MMP was approved as Authorisation 0059 13Nov20. | The 13Nov20 Authorisation revised the security as included in condition 10. |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden | Emplacement | Facilities | Exploration | Waterways (including river | diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|------------|-------------|------------|-------------|----------------------------|------------|----------------------------|-------|-------------------------|--|---|
| | | 11.c | amendment to the Unplanned Closure Plan. | 1 | | | | | | | | | | | | | | | 4 | Full Compliance | Email from Operator to DITT dated 16Apr21 MRM 2021 Unplanned Closure Plan and Independent Security Assessment. Enclosure 1 - MRM Unplanned Closure Plan 2021_FINAL_April. Enclosure 2 - MRM Security Calculation_2021_210416_Final. Enclosure 4 - Phronis Independent Security Audit Report 2021. | Unplanned Closure Plan submitted annually to the DITT by the Operator with revised security included. Independent Monitor confirmed email evidence of submission via email 16Apr21 stated "In accordance with Condition 11 of Variation of Authorisation 0059, dated 13 November 2020, please find the attached cover letter requesting a revision to McArthur River Mining Pty Ltd's (MRM) security held by the DITT of Industry, Tourism and Trade (DITT)". Although outside the audit period, the increase in security is included in a new Authorisation version issued after the end of the audit period. |
| | | 12 | The revised security amount to be provided under Condition 10 is to be provided prior to creating the new disturbance, covered under the revised security as per written notification from the Department. For the avoidance of doubt, the Operator must provide the revised security amount in the form of cash or an unconditional bank guarantee to the Minister. | 1 | | | | | | | | | | | | | | | N/A | Not Applicable | | As the security only decreased in the audit period, this condition is not applicable. |
| | | 13 - previously 10 | Each financial year, upon receipt of a written notice by the Minister as to the levy payable for that financial year, the Operator must pay a levy to the Mining Remediation Fund of an amount calculated in accordance with the Act and as stated by the Minister in the notice. [10] | 1 | | | | | | | | | | | | | | | 4 | Full Compliance | Invoice reminder notice dated 21Sep20 with due date 30Sep20 Amount: \$5,197,283.00 Transaction Receipt - Processing date: 26/10/2020 Total amount: \$5,197,283.00. Internal Operator email to obtain the levy and evidence of payment (RE MRM levy payments). Processing date: 26Oct20 Total amount: \$5,197,283.00. Independent Monitor confirmed evidence of written notice of levy to be paid of \$5,197,283.00 due on 30Sep20 and remittance for the same amount on 26Oct20. | OBS: Correct Mining Remediation Fund levy amount was paid, however it was paid after the due date stated on the levy notice. |
| Overburden Management Project | | | | | | | | | | | | | | | | | | | | | | |
| | | 113 | From the date of this approval, new areas of the NOEF foundation development (i.e. areas at base level) that do not currently contain PAF wastes must include an engineered low permeability liner of 0.5m thickness and maximum saturated hydraulic conductivity of 1 x 10 ⁻⁹ metres per second above which future PAF wastes are to be stored. | | | | | | | | | | | 1 | | | | | 4 | Full Compliance | Letter from ICE to Operator dated 23Apr20 subject NOEF Central East Foundation Investigation - ICE Review. EMR 2020 - 2021. Figures showing survey data on 21Nov20 and from 28Nov20. ICE Review of NOEF Central East Foundation Investigation 23 April 2020 is from before the audit period but "The report describes investigations that have been carried out by MRM to further assess the hydraulic properties of the foundation below existing developed areas of NOEF Central East". The report also states "The report findings are endorsed and GHD considers that the investigation provides sufficient evidence that the existing stockpile foundation meets the design intent and satisfies (and likely exceeds) the minimum 0.5 m thick, minimum 1x10 ⁻⁹ m/s CCL specification". Section 2.5.2 of the EMR states "The CE stage was constructed as per the OMP EIS methodology and consistent with the approved MMP, including the development of: • a minimum 0.5 m thick low permeability liner with a maximum saturated hydraulic conductivity of 1 x 10 ⁻⁹ metres per second" and "The testing showed that 100% of the CCL lots constructed were in conformance with the required permeability specification and zero failures were observed". Table 8 of the EMR 2020-2021 NOEF Central East Stage Compacted Clay Liner Testing has the minimum required number of tests for permeability was 17 and that 17 were conducted. | This condition is only relevant from 20Aug2020 until 13Nov2020. Note: very similar to condition 20 of 13Nov20 Authorisation however, only relevant to until the 13Nov20 Authorisation commenced. Foundation works was only completed in the NOEF Central East (CE) stage in the relevant part of the audit period (i.e., before 13Nov20). This is supported by the EMR 2020-2021. Construction of the CE Stage foundation was undertaken between 1 April and 12 November 2020. The Operator advised "Survey data as at the 14th November 2020 shows that non-benign material was being placed in NE Alpha during the period 1 April - 12 Nov2020, however only on areas with an engineered low permeability liner. Weekly survey data from the 21st November still shows only tipping on top of the engineered low permeability liner, while survey from the 28th November, shows tipping from areas of the engineered liner over in-situ foundation clays. The survey data has been provided, as well as an interpretation." |
| | | Explanatory note: | The following conditions were introduced in the previous variation, dated 15 August 2019 to reflect the intent of the thirty recommendations made by the NT EPA in the making of their Assessment Report 86 published July 2018. The NT EPA articulated an overarching environmental objective to be achieved during operation of the Mine: to ensure the health of McArthur River is protected along its whole length at all times from mine related impacts. The Minister accepted the recommendations as overarching conditions for the life of the project and have been retained to achieve transparency. | | | | | | | | | | | | | | | | | | | Explanatory note and therefore not audited. |
| | | 14 - previously 107 | The Operator must ensure activities related to the McArthur River Overburden Management Project are implemented in accordance with: | | | | | | | | | | | | | | | | | Refer to sub conditions | | |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Placement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

| | | | | | | | | | | | | | |
|--|--|--|---|--|--|--|--|--|--|-----|-------------------------|---|---|
| | 14.a | all environmental commitments and safeguards identified in the final Environmental Impact Statement for the McArthur River Mine Overburden Management Project (draft Environmental Impact Statement, Supplement to the draft Environmental Impact Statement and additional information); | 1 | | | | | | | 3 | Part Compliance (High) | <p>2020-2021 Reconciliation of Commitments and Actions Environmental Monitoring Report – Appendix B.</p> <p>In total 230 commitments are identified in the EMR. Of these, 161 commitments appear to be ongoing (i.e., relating to ongoing committed activity at the Mine), six commitments appear to be complete (i.e., no further action required), and 63 commitments appear to be not currently relevant (e.g., commitments relating to specific actions during closure stage).</p> <p>Of the 161 ongoing commitments, the 2020/2021 EMR update provided by the Operator indicates that nine commitments may be incompletely addressed. These relate to the following activities :</p> <ul style="list-style-type: none"> •Geochemical investigations have not been undertaken for the WOEf and BBLf •Groundwater quality monitoring has not been undertaken adjacent to Djirrinmini waterhole; however, proposed groundwater quality monitoring has been included in the draft 2021/2022 monitoring schedule •While a gauging station was installed on the Glyde River it is not operational due to several site-specific challenges and there have been delays to installation of a gauging station at an alternate site •The Fire Management Plan requires update to address management of specific fauna as described in the OMP EIS, noting this update is planned for 2022 •Vegetation trials on the southern levee wall were not undertaken due to delays in approval of the MMP; however, trials are now intended to be completed on the NOEF in late 2021 •A Gouldian Finch Monitoring Program is yet to be developed •Dust management measures are yet to be added to site inductions to brief employees and contractors on air quality management requirements. •The Operator intends to continue to operate internal corporate Health Safety Environment and Community Audits for the Mine rather than internal and external audits. | <p>2020-2021 Reconciliation of Commitments and Actions Environmental Monitoring Report – Appendix B includes the OMP EIS Commitment Description, Jan 2020 MMP Update and 2020/21 EMR Update. Source documents for the commitments of OMP Supplementary EIS and OMP Draft EIS are included. Although the EMR is prepared after the audit period, the detail included is evidence for this condition.</p> <p>It is notable that the reporting against commitments in the 2020-2021 EMR has improved on previous years, with the inclusion of information regarding the source of the commitment, applicable project phase, timeline and frequency providing enhanced detail for the commitments in comparison with information previously provided.</p> <p>OFIs are not included here as they are provided in the Commitments - Operator Review section in the AEPAR.</p> |
| | 14.b | recommendations in the NT EPA Assessment Report 86 where they are approved under an MMP; | 1 | | | | | | | N/A | Not Applicable | <p>NT EPA recommendations workbook</p> <p>The NT EPA recommendations audit of DITT identified that the majority of the NT EPA recommendations have been transferred directly and all of the recommendations, to varying extents, are included in Conditions of the Authorisation.</p> | <p>Given the NT EPA recommendations audit of the Department identified that all NT EPA recommendations are included as conditions in the Authorisation, audit of this condition is covered under other relevant Authorisation conditions.</p> |
| | 14.c | if there is any inconsistency between the above documents, the most recent authorisation shall prevail to the extent of any inconsistency. | 1 | | | | | | | N/A | Not Applicable | | <p>The Independent Monitor is not aware of any inconsistency.</p> |
| | 15 - previously 108 | The Operator must provide written notice to the Minister and NT EPA if it alters or proposes to alter the McArthur River Mine Overburden Management Project and/or commitments, safeguards or mitigation measures in the Environmental Impact Statement in such a manner that the environmental significance of the action may have changed, in accordance with clause 14A of the Environmental Assessment Administrative Procedures 1984. | 1 | | | | | | | N/A | Not Applicable | | <p>Operator advised none have occurred.</p> |
| | 16 - previously 109 | Within 18 months of the date of authorisation of the Overburden Management Project, unless otherwise agreed in writing by the Department, the Operator must submit a plan to the Department for review, that: | | | | | | | | N/A | Not Applicable | | <p>Future item - Due 18 months from 13Nov2020</p> |
| | 16.a | Enables measurement of total loads of lead and zinc and is consistent with requirements of Condition 27; | | | | | | | | N/A | Not Applicable | | <p>Future item - Due 18 months from 13Nov2020</p> |
| | 16.b | Quantifies and ensures annual loads of lead and zinc discharged to the McArthur River in future years (July to June) do not exceed the loads discharged in 2017-2018 (as per Condition 68(e)) taking into account seasonal variations in rainfall, and subject to future annual load calculations; | | | | | | | | N/A | Not Applicable | | <p>Future item - Due 18 months from 13Nov2020</p> |
| | 16.c | addresses recommendations and outcomes arising from audits of loads by the Independent Monitor; | | | | | | | | N/A | Not Applicable | | <p>Future item - Due 18 months from 13Nov2020</p> |
| | 16.d | include sufficient detail to inform the development of monitoring and management measures (including but not limited to early warning alerts and intervention levels), as part of the site wide AMP (Condition 45); | | | | | | | | N/A | Not Applicable | | <p>Future item - Due 18 months from 13Nov2020</p> |
| | 16.e | once approved by the Department, be implemented by the Operator by the Operator. | | | | | | | | N/A | Not Applicable | | <p>Future item - Due 18 months from 13Nov2020</p> |
| | 17 - previously 110, there are changes | Within 18 months date of authorisation of authorisation of the Overburden Management Project, the Operator must: | | | | | | | | | Refer to sub conditions | | <p>Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS.</p> |
| | 17.a | submit a plan to the Department for review, that shall include: | | | | | | | | N/A | Not Applicable | | <p>Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS.</p> |
| | 17.a.i | site-specific trigger values determined in accordance with Australian and New Zealand Guidelines for Fresh and Marine Water Quality, 2018 framework, incorporating ANZECC (2000) guidelines, at appropriate monitoring locations, in accordance with Condition 27; | | | | | | | | N/A | Not Applicable | | <p>Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS.</p> |
| | 17.a.ii | a commitment that creeks on the mine site to show long-term improving trends in water quality within 20 years after cessation of mining; | | | | | | | | N/A | Not Applicable | | <p>Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS.</p> |
| | 17.a.iii | methodology to calculate contaminant loads and contaminant concentrations entering creeks and the McArthur River using system modelling that must: | | | | | | | | N/A | Not Applicable | | <p>Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS.</p> |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste Management | Open Pit/Underground Workings | Tailings Storage Facility | Water Management and Storages | Overburden Placement Facilities | Exploration | Waterways (including river diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|--|---|--------------------|------------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------------|-------------|---------------------------------------|----------------------------|-------|------------------|--|---|
| | | 17.a.iii.a | use suitable site-specific data collected as part of Condition 26; | | | | | | | | 1 | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.a.iii.b | be subject to review by the relevant independent panel; | | | | | | | | 1 | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.a.iii.c | detail specific assumptions to be tested including but are not limited to: | | | | | | | | 1 | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.a.iii.c.i | groundwater flow paths; | | | | | | | | 1 | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.a.iii.c.ii | attenuation of metals from mine-derived wastes; | | | | 1 | | 1 | | 1 | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.b | once approved by the Department, implement the plan; | 1 | | | | | | | 1 | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 17.c | incorporate the relevant findings from the plan into the AMP. | 1 | | | | | | | | | N/A | Not Applicable | | Future item - Due 18 months from 13Nov2020. Finalising ecotox report July 2021 for submission to DEPWS. |
| | | 18 - previously included in 111 | The Operator must provide a written response to the Department, if an independent technical panel's, required under Condition 21, review of the models and modelling outputs, and the data collection programs that informed the model development at Condition 17(a)(iii) address recommendations for improvements. All relevant outputs must be used to inform and update the AMP. | | 1 | | 1 | | 1 | | | | N/A | Not Applicable | | Future item. Panels do not exist yet. In the process of assisting the DITT with setting up the panels as of July 2021. |
| | | 19 - previously 112, changed | Every three (3) years from the date of authorisation of the Overburden Management Project, an independent environmental audit of the Quality Assurance (QA) and Quality Control (QC) procedures and waste rock identification and handling performance must be undertaken and: | 1 | | | | | 1 | | | | N/A | Not Applicable | | Future item. Only 3 years from 13Nov2020. |
| | | 19.a | the results of the audit be provided within six (6) weeks to the Department and to the relevant independent panel; | 1 | | | | | 1 | | | | N/A | Not Applicable | | Future item. Only 3 years from 13Nov2020. |
| | | 19.b | the Operator must provide a written response to the satisfaction of the Department where findings from the audit and review by the relevant panel includes matters that need to be addressed or areas for improvement. | 1 | | | | | 1 | | | | N/A | Not Applicable | | Future item. Only 3 years from 13Nov2020. |
| | | 20 - previously 113 for OMP, 25.a.ii for CENOEF, changed | From date of authorisation of the Overburden Management Project, new areas of the NOEF foundation development (i.e. areas at base level) that do not currently contain PAF wastes must include a low permeability liner of 0.5m thickness and maximum saturated hydraulic conductivity of 1 x 10-9 metres per second above which future PAF, NAF and benign materials are to be stored. | | | | | | 1 | | | | 4 | Full Compliance | MRM Inspection and Test Plan (ITP) Week 14 Apr. 11 – Apr. 17, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNNHC Week 15). MRM Inspection and Test Plan (ITP) Week 16 Apr. 16 – Apr. 24, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNNHC Week 16). Letter from ICE to Operator dated 23Apr20 subject NOEF Central East Foundation Investigation - ICE Review. EMR 2020-2021. ICE NOEF Construction Progress Report May 2020 dated July 2020. ICE Peer Review of NOEF Monthly Construction Progress Reports (September 2020 dated December 2020, January 2021 dated August 2021, February 2021 dated September 2021, March 2021 dated October 2021, April 2021 dated November 2021). MRM Inspection and Test Plans (ITPs) (ITP_CEB1_B001_MSNNHC Week 15 and ITP_CEB1_B001_MSNNHC Week 16) include reference to NOEF Design and Construction Guidelines but do not look to specify "low permeability liner of 0.5m thickness and maximum saturated hydraulic conductivity of 1 x 10-9 metres per second". Section 2.5.2 of the EMR states "The CE stage was constructed as per the OMP EIS methodology and consistent with the approved MMP, including the development of: • a minimum 0.5 m thick low permeability liner with a maximum saturated hydraulic conductivity of 1 x 10-9 metres per second" and "The testing showed that 100% of the CCL lots constructed were in conformance with the required permeability specification and zero failures were observed". Table 8 of the EMR 2020-2021 NOEF Central East Stage Compacted Clay Liner Testing has the minimum required number of tests for permeability was 17 and that 17 were conducted. NOEF Construction Progress Report May 2020 section 2.3.1 "The Central East Alpha and Bravo Stage expansion will feature a sloping low permeability foundation, designed to enhance the movement of infiltration through the NOEF, to seepage extraction points, on the eastern perimeter" | The Operator advised "During the audit period, foundation works was only completed in the NOEF Central East (CE) stage." This is supported by the EMR 2020-2021. Independent Certifying Engineer (ICE) Review of NOEF Central East Foundation Investigation 23 April 2020 is from before the audit period but "The report describes investigations that have been carried out by MRM to further assess the hydraulic properties of the foundation below existing developed areas of NOEF Central East". The report also states "The report findings are endorsed and GHD considers that the investigation provides sufficient evidence that the existing stockpile foundation meets the design intent and satisfies (and likely exceeds) the minimum 0.5 m thick, minimum 1x10-9 m/s CCL specification". While related to the CCL layer along Cell 2A's northern batter toe, the following from ICE Peer Review of NOEF Monthly Construction Progress Reports April 2021 is indicative of the ICE ensuring low permeability of the liners, "2021_NCR_CEB_02 was issued on 23 April for Lot 2A. The CCL layer was too thin along Cell 2A's northern batter toe, in some places it was found to be as low as 300 mm. MRM requested to leave the layer, as the CCL layer is likely to have a lower permeability that 1 x 10-9 m/s, with historical results indicating a likely permeability in the range of one or two orders of magnitude lower than the Specification. Additionally, beneath the CCL through the batter toe area exists 1 – 2 m of in-situ clay, with historical permeability testing of in-situ clays saw 100% with permeability lower than the requisite 1 x 10-9 m/s." OBS: Consider including permeability acceptance criteria in the ITPs and Peer Review of NOEF Monthly Construction Progress Reports. |
| | | 21 - previously 114 | The Operator must provide funding and assist the Department to establish and operate an independent panel(s) of experts to advise on matters affecting the environmental performance of the NOEF, TSF and mine closure planning. | 1 | | | 1 | | 1 | | | | 4 | Full Compliance | Sighted submission of Terms of Reference to DITT for review dated 6 July 2021 (outside audit period). Email Operator to DAWE - MRM Independent Panels - Terms of Reference (DAWE) 6Jul21 Email Operator to DITT - MRM Independent Panels - Terms of Reference (DITT) 6Jul21 | Operator advised that during the audit period there was no request from the DITT for funding or assistance. Operator submitted Terms of Reference to the DITT. |
| | | 22 - previously 115 | Within 12 months of date of authorisation of the Overburden Management Project, the Operator must submit a report to the Department for review, detailing the results of relevant studies undertaken to inform the requirements for implementation (including timelines) of a NOEF groundwater seepage interception and recovery system that: | | | | | | 1 | | | | N/A | Not Applicable | | Future item. Twelve months from 13Nov2020. |
| | | 22.a | controls seepage to the Barney Creek diversion channel and the McArthur River; | | | | | | | | | | N/A | Not Applicable | | Future item. Twelve months from 13Nov2020. |
| | | 22.b | achieves a recovering trend in the Barney Creek diversion channel and the old McArthur River channel (at SW06) water quality within 20 years of cessation of mining; | | | | | | | | | | N/A | Not Applicable | | Future item. Twelve months from 13Nov2020. |
| | | 22.c | facilitates achieving requirements of Conditions 16 and 17. | | | | | | | | | | N/A | Not Applicable | | Future item. Twelve months from 13Nov2020. |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

| Condition/Requirement | Governance/General | Non-mineral Waste Management | Open Pit/Underground Workings | Tailings Storage Facility | Water Management and Storage | Overburden Placement Facilities | Exploration | Waterways (including river diversion) | Bing Bong Loading Facility |
|-----------------------|--------------------|------------------------------|-------------------------------|---------------------------|------------------------------|---------------------------------|-------------|---------------------------------------|----------------------------|
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Score Compliance Level Evidence Comments

| | | | | | | | | | | | | |
|------------------------------|--|---|---|---|--|---|--|---|--|-----|-------------------------|---|
| 23 | Within 24 months of date of authorisation of the Overburden Management Project, the Operator must submit a NOEF geosynthetic liner cover system plan to the Department for review. The plan must: | | | | | 1 | | | | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. 2.5 Overburden Emplacement. 2.5.1 Emplacement Areas. The following activities were undertaken during the reporting period: • NOEF West stage: Continued construction of the MS-NAF Halo and advection barriers on the top and southwest faces; conducted the Geosynthetic Liner Constructability Trial on the western face. |
| 23.a | outline a process (including timelines) to test and evaluate (i.e. criteria) the constructability and effectiveness of geosynthetic liner cover options including a geosynthetic liner /compacted clay layer combination; | | | | | 1 | | | | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| 23.b | include implementation of trials on rehabilitated stages of the NOEF; | | | | | 1 | | | | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| 23.c | identify relevant performance parameters must be monitored, including but not limited to: | | | | | 1 | | | | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| 23.c.i | slope stability during extreme events; | | | | | 1 | | | | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| 23.c.ii | cover performance as a result of heat effects; | | | | | 1 | | | | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| 23.c.iii | tolerance of the geosynthetic liner to expected differential settlement; | | | | | 1 | | | | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| 23.c.iv | veracity of cover longevity predictions; | | | | | 1 | | | | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| 23.c.v | likely long-term maintenance requirements. | | | | | 1 | | | | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| 23.d | Include reporting of trial results and monitoring outcomes: | | | | | 1 | | | | | Refer to sub conditions | Future item. Twenty-four months from 13Nov2020. |
| 23.d.i | within three years from the submission of the plan; | | | | | 1 | | | | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| 23.d.ii | every three years thereafter, to the relevant independent panel and the Community Reference Group for review, and shall be audited by the Independent Monitor. The Operator must provide a written response to the Department, if review from the relevant panels and Community Reference Group require matters to be addressed; | | | | | 1 | | | | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| 23.d.iii | must be used to inform the AMP and closure planning for the mine. | 1 | | | | 1 | | | | N/A | Not Applicable | Future item. Twenty-four months from 13Nov2020. |
| 23.e | The NOEF geosynthetic liner cover system plan, once approved by the Department, must be implemented by the Operator. | 1 | | | | 1 | | | | N/A | Not Applicable | Future item. The plan has not been submitted to the DITT so is not approved. |
| 24 -previously 117, changed | Within five (5) years of the date of authorisation of the Overburden Management Project, the Operator must submit a strategy to the Department that details the long-term disposal management of tailings into the mine pit void, submerged under a suitable depth of pit water. The plan must: | 1 | 1 | 1 | | | | | | N/A | Not Applicable | Future item. Five years from 13Nov2020. |
| 24.a | include strategies on the tailings reprocessing and assessment of residual chemical contaminants that may likely impact on meeting the requirements of Condition 16; | 1 | | 1 | | | | | | N/A | Not Applicable | Future item. Five years from 13Nov2020. |
| 24.b | be reviewed by the relevant independent panel. | 1 | | 1 | | | | | | N/A | Not Applicable | Future item. Five years from 13Nov2020. |
| 25 | Once approved by the Department, the strategy developed in accordance with Condition 24 must be used to develop a plan five (5) years prior to cessation of mining, for approval by the Department. Any requirement to vary the approved disposal strategy or plan must be: | 1 | | | | | | | | N/A | Not Applicable | Future item. Condition triggered by condition 24, which is not until required until five years from 13Nov2020. |
| 25.a | applied for in writing to the Minister; | 1 | | | | | | | | N/A | Not Applicable | Future item. Condition triggered by condition 24, which is not until required until five years from 13Nov2020. |
| 25.b | based on leading practice and site conditions; | 1 | | | | | | | | N/A | Not Applicable | Future item. Condition triggered by condition 24, which is not until required until five years from 13Nov2020. |
| 25.c | supported by the relevant independent panel; | 1 | | | | | | | | N/A | Not Applicable | Future item. Condition triggered by condition 24, which is not until required until five years from 13Nov2020. |
| 25.d | notified to the NT EPA in accordance with Condition 15. | 1 | | | | | | | | N/A | Not Applicable | Future item. Condition triggered by condition 24, which is not until required until five years from 13Nov2020. |
| 26 - previously 118, changed | Within 12 months of date of authorisation of the Overburden Management Project, the Operator must review and synthesise all available and relevant information to submit a revised water monitoring plan (surface water and groundwater) to the Department for review, ensuring the plan is capable of identifying and quantifying impacts of mining activities on the environmental values and beneficial uses of the McArthur River. | 1 | | | | | | 1 | | N/A | Not Applicable | Resubmitted a Water Management Plan to DITT on 23 June 2021 that addressed some of these conditions. This revision is required as part of WDL and was issued to DITT for information. |
| 27 - previously 118, changed | The plan required under Condition 26 must: | | | | | | | | | | Refer to sub conditions | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. |
| 27.a | allow for assessment of compliance with Condition 16 and include sufficient detail to inform/develop/update the AMP; | 1 | | | | | | 1 | | N/A | Not Applicable | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. |
| 27.b | at a minimum: | | | | | | | | | | Refer to sub conditions | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. |
| 27.b.i | quantify loads of lead and zinc entering the McArthur River each year; | | | | | | | 1 | | N/A | Not Applicable | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. |
| 27.b.ii | quantify impacts to water quality and trends in groundwater to determine that objectives and targets are being met, including the effectiveness of source control to reduce loads to as low as is reasonably practicable; | | | | | | | 1 | | N/A | Not Applicable | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. |
| 27.b.iii | develop appropriate future trigger values for waterways on the mine site and the McArthur River in accordance with the ANZECC Guidelines. In the interim, the trigger values in the most current WDL shall be used; | | | | | | | 1 | | N/A | Not Applicable | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. |
| 27.c | be prepared in consultation with the NT EPA; | 1 | | | | | | 1 | | N/A | Not Applicable | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste Management | Open Pit/Underground Workings | Tailings Storage Facility | Water Management and Storages | Overburden Placement Facilities | Exploration | Waterways (including river diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|--------------------|------------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------------|-------------|---------------------------------------|----------------------------|-------|-------------------------|---|---|
| | | 27.d | be prepared in consultation with the relevant independent panel; | 1 | | | | | | | 1 | | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. |
| | | 27.e | once approved by the Department, be implemented by the Operator; | 1 | | | | | | | 1 | | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. |
| | | 27.f | be subject to consultation with the relevant independent panel in the event that the plans requires updating (e.g.to maintain the currency of the monitoring network); | 1 | | | | | | | 1 | | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. |
| | | 27.g | ensure results of the program: | | | | | | | | | | | Refer to sub conditions | | |
| | | 27.g.i | are reported annually to the Department; | 1 | | | | | | | 1 | | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. |
| | | 27.g.ii | are audited by the Independent Monitor every three years; | 1 | | | | | | | 1 | | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. |
| | | 27.g.iii | be published on the Operator's website. | 1 | | | | | | | 1 | | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not required until 12 months from 13Nov2020. |
| | | 28 - previously 119, changed | Within 18 months of date of authorisation of the Overburden Management Project, the Operator must submit a research and investigation program to the Department for review that establishes the concentration of mine-derived contaminants at which chronic and acute impacts to biota of relevance to the McArthur River system occur using recognised and accepted eco-toxicological testing, and: | 1 | | | | | | | 1 | | N/A | Not Applicable | | Future item. 18 months from 13Nov2020. Will use the Ecotox results to feed into this requirement. |
| | | 28.a | the results of this program must be integrated with other relevant programs monitoring programs and management plans; | 1 | | | | | | | 1 | | N/A | Not Applicable | | Future item. 18 months from 13Nov2020. Will use the Ecotox results to feed into this requirement. |
| | | 28.b | the plan once approved by the Department must be implemented by the Operator. | 1 | | | | | | | 1 | | N/A | Not Applicable | | Future item. 18 months from 13Nov2020. Will use the Ecotox results to feed into this requirement. |
| | | 29 - previously 120, changed | Within 18 months of date of authorisation of the Overburden Management Project, the Operator must submit an aquatic ecosystem monitoring program to the Department for review that provides improved understanding of aquatic ecosystems in the McArthur River from changing water flows, levels and quality, including available dry season habitat. The program must: | 1 | | | | | | | 1 | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. Aquatic report issued to Commonwealth June 2021 and will be used as a basis for this condition. |
| | | 29.a | assess impacts of the mine on water levels in refuge pools/waterholes, upstream and downstream of the mine, including in the McArthur River diversion channel; | | | | | | | | 1 | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. Aquatic report issued to Commonwealth June 2021 and will be used as a basis for this condition. |
| | | 29.b | assess impacts of the mine on water quality in refuge pools/waterholes in the dry season; | | | | | | | | 1 | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. Aquatic report issued to Commonwealth June 2021 and will be used as a basis for this condition. |
| | | 29.c | assess impacts of the mine on the health of aquatic biota in the McArthur River using non-lethal sampling methods; | | | | | | | | 1 | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. Aquatic report issued to Commonwealth June 2021 and will be used as a basis for this condition. |
| | | 29.d | be designed to be integrated with requirements of the AMP consistent with Condition 45; | | | | | | | | 1 | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. Aquatic report issued to Commonwealth June 2021 and will be used as a basis for this condition. |
| | | 29.e | once approved by the Department, be implemented by the Operator. | | | | | | | | 1 | | N/A | Not Applicable | | Future item. Has not been submitted to the DITT for approval so has not been approved. Aquatic report issued to Commonwealth June 2021 and will be used as a basis for this condition. |
| | | 30 - previously 121 | At all times, the Operator must conduct works consistent with the Northern Territory Aboriginal Sacred Sites Act 1989 and valid AAPA certificate. All conditions of the AAPA certificate must be complied with (including but not limited to NOEF height restrictions), and evidence produced to demonstrate compliance, when requested by the Minister. | 1 | | | | | 1 | | | | 4 | Full Compliance | PRO-2200033 Permit to Clear Procedure and Forms MINING MANAGEMENT PLAN - APPENDIX D January 2020. Sighted Ground Disturbance Permit 10/4/21 to 10/5/21. EMR 2020-2021. MRM NOEF Compliance - Compliance report highlighting the construction height restrictions of the NOEF in relation to the Barramundi Dreaming. | Sighted map of different access areas showing blue AAPA certificate exists for works. Orange and red areas not approved. Ground disturbance permit reviews activity against AAPA certificates. Requires community team sign off. Sighted the section that included an APPA certificate number. AAPA certificate includes GIS layer. Community team are responsible for AAPA certificate signoff. All loaders, etc are GPS capable and can see where to work within the bounds. Ground Disturbance permit includes a sign off for completion. Surveyors measure the height of the NOEF to ensure it is not above the height of Barramundi Dreaming annually (MRM NOEF Compliance - Compliance report highlighting the construction height restrictions of the NOEF in relation to the Barramundi Dreaming). MRM NOEF Compliance - Compliance report highlighting the construction height restrictions of the NOEF in relation to the Barramundi Dreaming states "Maximum RL of NOEF is 112.5541m, which is 3,501 below RL max of Barramundi Dreaming (116.0551m). Measurements were taken on 24/04/2021 using high precision GPS methods." EMR Executive Summary says "Several sacred sites, designated by the Aboriginal Areas Protection Authority (AAPA), under the Northern Territory Aboriginal Sacred Sites Act 1989, have been registered and recorded around the Mine. Seven sacred sites have been identified by the AAPA as being potentially groundwater-dependent. The seven sacred sites have been reviewed for potential groundwater impact over the reporting period. MRM and external expert review have concluded that no sacred sites were impacted by mine influenced drawdown or mine-derived seepage over the reporting period. Ongoing monitoring and evaluation are in place." EMR 2020-2021 section 2.5.2 "No disturbance has occurred in the area of the MRM4 Cultural Site. The MRM4 Cultural Site has an exclusion fence constructed around it, ranging from approximately 5 m to 85 m offset from the actual site,". |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste Management | Open Pit/Underground Workings | Tailings Storage Facility | Water Management and Storages | Overburden Placement Facilities | Exploration | Waterways (including river diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|--------------------|------------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------------|-------------|---------------------------------------|----------------------------|-------|-------------------------|---|---|
| | | 31 - previously 122 | The Operator must not disturb or encroach within 5m of archaeological site MRM4, until a design of the NOEF is agreed in writing by the Department. Consultation between the Operator and Minister for Arts, Culture and Heritage must be undertaken prior to seeking endorsement of the design. | 1 | | | | | 1 | | | | 4 | Full Compliance | EMR 2020-2021. EMR 2020-2021 shows where the NOEF has been developed (and therefore that it is not near MRM4) and Plate 2 "MRM4 Area Fence and Signage" shows the Cultural Heritage Site MRM4 site that says Do not Enter and Plates 3 and 4 show that the MRM4 Area is not disturbed. Section 2.5.2 of the EMR 2020 - 2021 states "No disturbance has occurred in the area of the MRM4 Cultural Site. The MRM4 Cultural Site has an exclusion fence constructed around it, ranging from approximately 5 m to 85 m offset from the actual site, with appropriate signage as per Plate 2." | The Operator advised that ground disturbance permit checks are undertaken against MRM4. |
| | | 32 - previously 123 | Within six months of date of authorisation of the Overburden Management Project, the Operator must provide a report to the Minister, and AAPA or the Minister for Arts, Culture and Heritage (where relevant) that demonstrates the consultation process undertaken or provide a plan to the Minister that details consultation activities and timeliness to identify and engage with appropriate custodians and traditional owners with an interest in land that would be or maybe affected by the Overburden Management Project. | 1 | | | | | 1 | | | | N/A | Not Applicable | Cultural Heritage Management Stakeholder Engagement Report 14Feb2021. | Future item. Not required until 6 months from 13Nov2020, which is outside the audit period. |
| | | 33 - previously 124, changed | Within 12 months of date of authorisation of the Overburden Management Project, the Operator must develop or revise and submit to the Department for review an existing air quality plan that monitors sulfur dioxide emissions at an appropriate location between the NOEF and sensitive receptors determined in consultation with NT EPA. | 1 | | | | | 1 | | | | N/A | Not Applicable | Email Operator to DITT dated 20Feb20 subject MRM Air Quality Management Plan - January 2020 MMP submission. Email NT EPA to Operator dated 17Jul20 RE Proposed sulphur dioxide monitoring location (Recommendation 19). Letter NT EPA to Operator dated 17Jul20 Re: Proposed sulfur dioxide monitoring location (Recommendation 19 of Assessment Report 86). | Future item. Within 12 months from 13 Nov2020. Email from Operator to DITT dated 20Feb20. "Please note, in accordance with our Variation of Authorisation Condition 123, MRM will engage with the NT EPA to ensure that the revised location of the SO2 monitor is appropriate for assessing potential impacts to sensitive receptors. Confirmation and evidence of consultation will be provided to DPIR once agreement with the NT EPA has been reached, on or prior to the date outlined in Condition 123." Note condition 33 of the 13Nov20 version of the authorisation was condition 123 in the 15Aug20 version of the authorisation. Letter NT EPA to Operator dated 17Jul20 Re: Proposed sulfur dioxide monitoring location (Recommendation 19 of Assessment Report 86) advises that "In conclusion, I consider that the proposed monitoring location appears to be consistent with the nature and intent of Recommendation 19 of Assessment Report 86, provided that it meets the requirements of AS/NZS 3580.1.1:2016: Methods for sampling and analysis of ambient air – Part 1.1: Guide to siting air monitoring equipment and other relevant Australian Standards. Monitoring of sulfur dioxide concentration must be undertaken in accordance with AS/NZS 3580.4.1-2008." Condition 33 does not require approval from DITT, only submission. OBS: In order to remove ambiguity around compliance, the Operator may consider requesting DITT confirm that the AQMP meets conditions 33 and 34 of the Authorisation. OBS: In order to remove ambiguity around compliance, the Operator may consider requesting DITT confirm that the AQMP meets conditions 33 and 34 of the Authorisation. |
| | | 34 - previously 124, changed | The air quality monitoring plan required under Condition 33 must include: | | | | | | | | | | | Refer to sub conditions | | |
| | | 34.a | objectives, locations, frequency of monitoring, trigger values and reporting commitments to manage and protect any potential air quality risk to human health outside of the mineral lease; | 1 | | | | | 1 | | | | N/A | Not Applicable | Email Operator to DITT dated 20Feb20 subject MRM Air Quality Management Plan - January 2020 MMP submission. Air Quality Management Plan 31 January 2020, AQMP Rev.0. | Future item. Plan in condition 33 not required until 12 months from 13 Nov2020. The Independent Monitor confirms objectives in section 1.6, locations on Figure 4 and frequency is discussed in sections 4.1, 4.2 and 4.3. Section 1.2 of the AQMP states this AQMP excludes: "Operational Trigger Action Response Plans (TARPs). This detail can be found in the Adaptive Management Plan (MRM, 2020a)." The AQMP does not include trigger values or reporting requirements, other than stating who is responsible for external reporting in section 1.4 and section 4.1 related to Sulphur Dioxide Monitoring stating "Validated raw data is provided to the NT DPIR each quarter. Analysis is undertaken and reported annually." and section 4.2 related to depositional dust monitoring and section 4.3 related to high volume air sampler monitoring state "Analysis of monitoring data will be undertaken and reported annually, [...]" |
| | | 34.b | evidence of consultation with the NT EPA to be provided at the time of the plan submission; | 1 | | | | | 1 | | | | N/A | Not Applicable | Email Operator to DITT dated 20Feb20 subject MRM Air Quality Management Plan - January 2020 MMP submission. Email NT EPA to Operator dated 17Jul20 RE Proposed sulphur dioxide monitoring location (Recommendation 19). Letter NT EPA to Operator dated 17Jul20 Re: Proposed sulfur dioxide monitoring location (Recommendation 19 of Assessment Report 86). | Future item. Plan in condition 33 not required until 12 months from 13 Nov2020. Evidence that the Operator proposed to undertake consultation with the NT EPA was provided in the plan at the time of submission. The Independent Monitor has seen evidence of consultation subsequent to submission of the plan and is aware that the Department has received the letter NT EPA to Operator dated 17Jul20 Re: Proposed sulfur dioxide monitoring location. |
| | | 34.c | once approved by the Department, be implemented by the Operator. | 1 | | | | | 1 | | | | N/A | Not Applicable | | Future item. Plan in condition 33 not required until 12 months from 13 Nov2020. However, implementation of the AQMP is assessed under Schedule D condition 6.c. |
| | | 35 - previously 124, changed | The results of the air quality plan for each reporting frequency must be: | | | | | | | | | | | Refer to sub conditions | | |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste Management | Open Pit/Underground Workings | Tailings Storage Facility | Water Management and Storages | Overburden Placement | Facilities | Exploration | Waterways (including river diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|--------------------|------------------------------|-------------------------------|---------------------------|-------------------------------|----------------------|------------|-------------|---------------------------------------|----------------------------|-------|-------------------------|---|---|
| | | 35.a | made available on the Operator's website. Initial monitoring results to be reported within 6 months of the plan being accepted by the Department or an alternative timeframe as agreed in writing with the Department; | 1 | | | | | | 1 | | | | N/A | Not Applicable | Sighted real time data on Operator's website 21Sep21. | Future item outside of the audit period. Due on 13May21. DITT advised "The air quality plan in question is the one submitted as part of the MMP on January 2020, and included in the AMP, and approved by Minister Manison on 13 November 2020". Real time data is available to the public online (October 2021). |
| | | 35.b | incorporated where relevant in the AMP. | 1 | | | | | | 1 | | | | N/A | Not Applicable | EMR 2020 - 2021 Appendix E Ambient Air Monitoring Report May 2020 – April 2021 | Future item. The reporting frequency is the audit period so incorporation of results of the audit period into the AMP falls outside the audit period. There is also no timeframe specified for incorporation into the AMP. DITT advised "The air quality plan in question is the one submitted as part of the MMP on January 2020, and included in the AMP, and approved by Minister Manison on 13 November 2020". |
| | | 36 - previously 125, changed | Within 24 months of date of authorisation of the Overburden Management Project, the Operator must submit a monitoring and management plan to the Department for review that manages risks of metal toxicity from human consumption of aquatic fauna obtained from the McArthur River. The plan must: | | | | | | | | | 1 | | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov2020. |
| | | 36.a | determine if aquatic fauna obtained from any reach of the McArthur River, that may be impacted by the mine's operations, is safe to eat; | | | | | | | | | 1 | | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov2020. |
| | | 36.b | include demonstrated evidence of consultation with NT EPA; | | | | | | | | | 1 | | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov2020. |
| | | 36.c | detail public reporting of the monitoring results, including at appropriate locations in the Borrooloola region; | | | | | | | | | 1 | | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov2020. |
| | | 36.d | include provisions for implementation and maintenance of signage at waterways at the MRM site in accordance with the requirements of Condition 62 until the risk of contamination from consumption of this aquatic fauna is demonstrated to be acceptable by the Department; | | | | | | | | | 1 | | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov2020. |
| | | 36.e | once approved by the Department, be implemented by the Operator. | 1 | | | | | | | | 1 | | N/A | Not Applicable | | Future item as the report is not approved by the DITT. |
| | | 37 - previously 126, changed | Within 24 months of date of authorisation of the Overburden Management Project, the Operator must submit a plan to the Department for review that outlines monitoring program for management of Largetooth Sawfish. The plan must: | | | | | | | | | 1 | | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov2020. |
| | | 37.a | include a sampling strategy for Largetooth Sawfish that is non-lethal; | | | | | | | | | 1 | | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov2020. |
| | | 37.b | include details of parameters and criteria, from which the results could be used to define specific (measurable and time-bound) performance indicators to abate a significant decline in Largetooth Sawfish movement; | | | | | | | | | 1 | | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov2020. |
| | | 37.c | include trigger levels for investigation and implementation of management measures; | | | | | | | | | 1 | | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov2020. |
| | | 37.d | once approved by the Department, be implemented by the Operator. | | | | | | | | | 1 | | N/A | Not Applicable | | Future item as the report is not approved by the DITT. |
| | | 38 - previously 127, changed | Within six months following the establishment of the required panels and groups in accordance with Condition 21, the Operator must: | | | | | | | | | | | | Refer to sub conditions | | Future item. Panels and groups not set up. |
| | | 38.a | develop environmental objectives for a Care and Maintenance Plan in consultation with the relevant Independent Panels, CRG, custodians and traditional owners; | 1 | | | | | | | | | | N/A | Not Applicable | | Future item. Panels and groups not set up. |
| | | 38.b | submit this to the Department for review. | 1 | | | | | | | | | | N/A | Not Applicable | | Future item. Panels and groups not set up. |
| | | 39 - previously 127, changed | Within five years of date of authorisation of the Overburden Management Project, the environmental objectives arising from Condition 38 must be used to develop a Care and Maintenance Plan in consultation with the Department. | 1 | | | | | | | | | | N/A | Not Applicable | | Future item. Within five years from 13 Nov2020. |
| | | 40 - previously 128, changed | The Operator must facilitate an independent third-party assessment of the security for rehabilitation of disturbances resulting from authorised activities in the approved MMP that is consistent with requirements under Conditions 10, 11 and 12, to the satisfaction of the Department, and every 3 years thereafter if the security has been re-calculated or adjusted. | 1 | | | | | | | | | | 4 | Full Compliance | Email from Operator to DITT dated 10Jul20 MRM Security - Independent Third-Party Assessment (20200710 MRM-DPIR Security - Independent Third-Party Assessment). Enclosure 4 - Phronis Independent Security Audit Report 2021. Email from DITT to Operator dated 10Jul20 MRM Security - Independent Third-Party Assessment (20200710 DPIR receipt - MRM Security - Independent Third-Party Assessment). Internal memo dated 18 June 2021 Re: Vary Authorisation 0059 McArthur River Mining Pty Ltd - McArthur River Mine (outside audit period but assessment of the plan that was submitted in the audit period). | Email from Operator to DPIR dated 10Jul20 MRM Security - Independent Third-Party Assessment stating "In summary, Phronis Consulting concludes that "The Audit indicates the MRM Security Calculation to be in alignment with the Unplanned Closure Plan, the Quantities and Costs per UOM to be reasonable and the total estimated cost of \$444,448,029.29 to be sound". Independent Monitor confirms this is in the Phronis Independent Security Audit Report 2021. The email from DPIR to the Operator dated 10Aug20 stated "DPIR acknowledges receipt of documents in relation to the independent third-party assessment of the MRM security." |
| | | 41 - previously 128, changed | The Operator, consistent with Condition 40, must: | | | | | | | | | | | | Refer to sub conditions | | |
| | | 41.a | commission a qualified person to review the security amount whose appointment is accepted by the Minister; | 1 | | | | | | | | | | 4 | Full Compliance | Letter from Operator to Department dated 3Feb2020 RE: INDEPENDENT THIRD-PARTY ASSESSMENT OF MCARTHUR RIVER MINE SECURITY (outside the audit period) Letter from Department to Operator 11Feb2020 Re: Independent Third-party Assessment of McArthur River Mine Security (outside the audit period) | Letter dated 11Feb2020 from the DPIR approved the independent third-party auditor. |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

Governance/General
 Non-mineral Waste Management
 Open Pit/Underground Workings
 Tailings Storage Facility
 Water Management and Storages
 Overburden Placement Facilities
 Exploration
 Waterways (including river diversion)
 Bing Bong Loading Facility

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | | | | | | | |
|--|--|------------------------------|--|---|--|--|--|--|--|--|--|--|--|--|-----|-------------------------|--|--|
| | | 41.b | ensure that the security is reviewed and delivered to the Department within six months of acceptance of the qualified person. | 1 | | | | | | | | | | | 4 | Full Compliance | Email from DITT to Operator dated 10Jul20 DPIR receipt - MRM Security - Independent Third-Party Assessment. Email from Operator to DITT dated 10Jul20 MRM-DPIR Security - Independent Third-Party Assessment. Email Operator to DITT subject MRM 2021 Unplanned Closure Plan and Independent Security Assessment dated 16Apr2021 Enclosure 1 - MRM Unplanned Closure Plan 2021_FINAL_April Enclosure 2 - MRM Security Calculation_2021_210416_Final Enclosure 4 - Phronis Independent Security Audit Report 2021 DITT acknowledged receipt of the independent third-party review of the security amount on 10Jul20, which is within six months of the acceptance of the qualified person on 11Feb20. The 16Apr2021 submission of the security included a third party review that was not required by a condition of the Authorisation and therefore there is no compliance issue associated with it not being undertaken within six months of acceptance of the qualified person. | |
| | | 42 - previously 129, changed | For every approved MMP and MMP amendment, the Operator must provide a revised copy of the approved document that removes commercially sensitive information, includes an overview and environmental section, and is suitable for publication on the Department's website, or provide written approval to make the complete documents publicly accessible. | 1 | | | | | | | | | | | 4 | Full Compliance | Email from Operator to Department dated 7Jul20 Re MRM - 2020 Mining Management Plan - Public Version. Email from Operator to Department dated 24Jun20 Re MRM 2020 Mining Management Plan - Public Version. | Independent Monitor confirmed that the January 2020 MMP with commercially sensitive information removed is on the Department's website (checked 22Sep21). Emails provided between Operator and Department show that the January 2020 MMP including an overview and environmental section, with commercially sensitive information removed, was provided to the Department. |
| | | 43 - previously 130 | The Operator must assist, as required, the Department to establish and operate a Community Reference Group (CRG). | 1 | | | | | | | | | | | 4 | Full Compliance | Email from Operator to Department dated 31Mar20 Re MRM Community Reference Group - Establishment and Terms of Reference. | The email stated "As discussed at our previous Technical Working Group meeting please find attached for your consideration a draft process for the establishment of the MRM Community Reference Group (CRG) required by NT EPA Recommendation 26 and VOA Condition 129. The attached includes a draft terms of reference for use by DPIR and the CRG, which has been based on the NSW Community Consultative Committee Guideline and with consideration of the ICMM's Handling and Resolving Local-level Concerns and Grievances." |
| | | 44- previously 131 | Within 18 months of date of authorisation of the Overburden Management Project, the Operator must undertake a synthesis of all environmental monitoring programs (Condition 26) that assess impacts of mining activities on the environmental values and beneficial uses of the McArthur River, in accordance with NT EPA's overarching environmental outcome. The revised monitoring programs must: | 1 | | | | | | | | | | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 44.a | use outputs generated for review and synthesis of water monitoring programs, as part of addressing Condition 26; | 1 | | | | | | | | | | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 44.b | demonstrate how all monitoring data collected under various monitoring programs and management plans were considered and synthesised (e.g. conceptual site models, trend analysis); | 1 | | | | | | | | | | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 44.c | be incorporated in the AMP. | 1 | | | | | | | | | | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 45 - previously 132, changed | Within 18 months of date of authorisation of the Overburden Management Project, the Operator must submit an AMP to the Department: | 1 | | | | | | | | | | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 45.a | The AMP must include the following key elements: | | | | | | | | | | | | | Refer to sub conditions | | AMP submitted to DEPWS March 2021 and provided to DITT out of courtesy. |
| | | 45.a.i | clear, measurable environmental objectives for all significant environmental risks and potential impacts; | 1 | | | | | | | | | | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 45.a.ii | measurable performance indicators to show that objectives are on target to be met; | 1 | | | | | | | | | | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 45.a.iii | pre-determined triggers to warn of potential for performance indicators to be exceeded, as informed by monitoring; | 1 | | | | | | | | | | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 45.a.iv | realistic and achievable contingency interventions to maintain performance indicators if triggers are consistently exceeded; | 1 | | | | | | | | | | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 45.a.v | clearly defined management measures/actions that are capable of being implemented in a timely way to meet performance indicators and environmental objectives; | 1 | | | | | | | | | | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 45.a.vi | monitoring in accordance with relevant Recommendations in NT EPA Assessment Report 86 to determine whether management measures are effective and to inform the need for adjustments to management measures or need for alternatives; | 1 | | | | | | | | | | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 45.a.vii | a continual feedback system to inform appropriate actions to be initiated when triggered and environmental objectives are always being met; | 1 | | | | | | | | | | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 45.a.viii | continual development of new management actions as required based on knowledge gained from experience at the site and elsewhere across industry. | 1 | | | | | | | | | | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 45.b | The AMP must be reviewed by the Independent Monitor or an appropriately qualified, independent third party, and updated with inputs from the CRG (once established under Condition 43); | 1 | | | | | | | | | | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 45.c | all review findings and CRG input requirements are to be provided to the Department for approval. | 1 | | | | | | | | | | | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 46 - previously 133, changed | Unless agreed otherwise in writing by the Department, the AMP must: | | | | | | | | | | | | | Refer to sub conditions | | Future item. Not triggered as condition 45 not triggered. |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste Management | Open Pit/Underground Workings | Tailings Storage Facility | Water Management and Storages | Overburden Placement Facilities | Exploration | Waterways (including river diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|--------------------|------------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------------|-------------|---------------------------------------|----------------------------|-------|----------------------------|--|---|
| | | 46.a | clearly set out the required management objectives and performance indicators; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.b | provide clarity on the triggers for changes to management actions, and responsibility and evidentiary basis for decision-making; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.c | establish the timeframe for initiation of certain actions if triggers are exceeded, including decisions to discontinue an activity and clarify responsibility and evidentiary basis for decision-making; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.d | establish a process for adjusting triggers that includes the regulator; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.e | establish transparent monitoring, reporting and review requirements; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.f | establish processes to achieve transparency and stakeholder engagement in AMP design and implementation that includes NT EPA, DAWE and CRG; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.g | set out the mechanism for periodic review by Independent Monitor, which must not exceed a frequency of every three years; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.h | be provided to the Department for re-approval in the event that any material changes are made to the AMP. | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 47 - previously 134 | The Operator must provide written notice to the Minister and to the NT EPA (under clause 14A of the Environmental Assessment Administrative Procedures 1984) where trends indicate performance indicators and environmental objectives will not, or are unlikely to be, met by implementing the AMP. | 1 | | | | | | | | | N/A | Not Applicable | | EMR will include trend analysis. But this condition is related to AMP that is not triggered. |
| Independent oversight | | | | | | | | | | | | | | | | |
| Appointment of ICE | | | | | | | | | | | | | | | | |
| | | 48 - previously 21 for CWNOEF Alpha and Bravo and 24 for Charlie changed, 46 for TSF changed, partially 27 for CENOEF | The Operator must appoint an Independent Certifying Engineer (ICE) to: | | | | | | | | | | | Refer to sub conditions | | The Operator advised that the following activities were undertaken during the reporting period • NOEF West stage: Continued construction of the MS-NAF Halo and advection barriers on the top and southwest faces; conducted the Geosynthetic Liner Constructability Trial on the western face. • NOEF Central West (CW) stage: Continued construction of the MS-NAF Halo and advection barriers on the top face and stockpiling of materials on CW Alpha and Bravo; continued construction of CW Charlie stage as per OMP EIS methodology. • NOEF Central East (CE) stage: Construction of the Foundation, Base, Core and Halo zones and PAF(RE) Cell in as per OMP EIS methodology. ITP examples for CE included in the folder: • NOEF Northeast (NE) stage: Commenced clearing and topsoil stripping of the NE Alpha stage. • NOEF Southeast (SE) stage: Stockpiling of benign materials for later use as advection barrier layers in the NOEF construction: completed construction of Phase 1 of the PAF(RE) Trial Cell. OBS: There is a DITT opportunity to tidy up wording of the ICE condition to specify where or for what construction activities condition 48 is required (e.g. NOEF, TSF, other). |
| | | 48.a | warrant and accept both the design and construction works, without limitation on responsibility; | 1 | | | 1 | 1 | | | | | 2 | Part Compliance (moderate) | Central East Alpha/Bravo – Subgrade, Basal CCL and Benign Rock Fill ITP signed off by the ICE- Completed July 2020 (CEA 3D ITP). ICE NOEF Construction Progress Report May 2020 dated July 2020. ICE Peer Review of NOEF Monthly Construction Progress Reports (July 2020 dated September 2020, September 2020 dated December 2020, November 2020 dated January 2021, January 2021 dated August 2021, February 2021 dated September 2021, March 2021 dated October 2021, April 2021 dated November 2021). NOEF Independent Certifying Engineer Role Proposal for Services McArthur River Mining Pty Ltd 18 June 2021 (3219254-PRO-0_NOEF ICE Proposal) (after audit period). MRM Tailings Storage Facility Quarterly Report September to November 2020 The Peer Review of NOEF Monthly Construction Progress Reports listed above state in Section 1 "The regulator (Department of Primary Industry and Resources, or DIPR) requires MRM to have an appropriately qualified independent engineer to be involved in the design and construction process. GHD have therefore been engaged by MRM to provide Engineering Services and Certification for the various projects associated with the NOEF." No evidence was provided to demonstrate that the ICE warrants and accepts both the design and construction works for the TSF or specifically without limitation on responsibility for the NOEF in the audit period. | The Operator advised the Independent Monitor that the ICE are not willing to accept liability for all the works without limitation. The NOEF ICE Role Proposal 18 June 2021 (after audit period) states "– We explicitly note that the description of the ICE described in Clause 48(a) of the Northern Territory Government's Variation of Authorisation (VOA, dated 13 November 2020) – which says "ICE to warrant and accept both the design and construction works, without limitation on responsibility" – does not apply to our agreed scope with MRM. As per previous correspondence and discussions with MRM, it would be impractical and cost-prohibitive for us to attempt to comply with VOA Clause 48(a)." The proposal further states Table 5 "a) the Contractor does not accept any liability for work or services performed by other parties prior to its appointment as Independent Certifying Engineer;". TSF quarterly reports prepared by the Operator do refer to activities undertaken by the ICE but are not sufficient for evidence for this condition. Similarly evidence included against condition 77 includes progress reports prepared by the Operator and ITPs signed off by the Resident Engineer/Field Engineer but were not performed by the ICE. OFI: Obtain confirmation regarding the ICE's agreement to warrant and accept both the design and construction works, without limitation on responsibility. Otherwise, the Operator should obtain approval of the ICE's limitation on responsibility position with DITT. OFI: Include the following statement in the monthly ICE reports: "The Independent Certifying Engineer warrants and accepts both the design and construction works, without limitation on responsibility" or an agreed level of limitation related to works by other parties prior to its appointment as ICE. OFI: Retain evidence that the ICE warrants and accepts both the design and construction works for more than the NOEF (e.g. TSF or other construction on site), without limitation on responsibility. |

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Placement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

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|--|--|------|--|---|--|---|---|--|--|--|--|-----|------------------------|---|---|
| | | 48.b | be present during all phases of construction where required in the approved MMP (including at hold points) and oversee and certify the works that they meet design specifications; | 1 | | 1 | 1 | | | | | 3 | Part Compliance (High) | <p>Central East Alpha/Bravo – Subgrade, Basal CCL and Benign Rock Fill ITP signed off by the ICE- Completed July 2020 (CEA 3D ITP).</p> <p>ICE NOEF Construction Progress Report May 2020 dated July 2020.</p> <p>ICE Peer Review of NOEF Monthly Construction Progress Reports (July 2020 dated September 2020, September 2020 dated December 2020, November 2020 dated January 2021, January 2021 dated August 2021, February 2021 dated September 2021, March 2021 dated October 2021, April 2021 dated November 2021).</p> <p>NOEF ICE Scope of Works 2020 Proposal.</p> <p>The ICE has prepared reports during NOEF phases of construction and have advised that works are in accordance with the specifications and design intent based on the NOEF monthly construction progress reports and have raised some items identified below (Section 5.2 of the Peer Review of NOEF Monthly Construction Progress Report March 2021 dated October 2021):</p> <p>*Overall design questions, design surfaces, or as-constructed surfaces are missing for the following ITPs</p> <p>*Missing information, including signatures, update specifications or additional measurements were found in the following ITPs</p> <p>*Measurements above the required maximum of 7.5 m for a core lift or 2 m for a PAF RE cell, or more than 0.5 m from the design surface were found in the following ITPs.:</p> <p>The Peer Review of NOEF Monthly Construction Progress Reports listed above state in Section 1 "The regulator (Department of Primary Industry and Resources, or DIPR) requires MRM to have an appropriately qualified independent engineer to be involved in the design and construction process. GHD have therefore been engaged by MRM to provide Engineering Services and Certification for the various projects associated with the NOEF."</p> <p>No evidence of ICE supervision of construction other than for the NOEF (e.g. TSF) was provided.</p> | <p>July and September 2020 Reports Section 5 "GHD's site presence, routine inspections of works and presence during witness and hold points, has allowed for an assessment of the performance of the project team and the extent to which the specification requirements are being met, for the construction activities." and Section 6 "Based on the daily site inspections and observations, investigations and geotechnical testing results, it is the opinion of GHD that the Central East expansion is being constructed in accordance with the specifications and design intent." The November 2020 and March 2021 reports have similar paragraphs to Section 5. The July 2020 Report also stated in section 3 "GHD's site engineer maintained a part time site presence for the duration of the reporting period, allowing for routine inspections of the construction works and verification of required witness and hold points."</p> <p>September 2020 Report section 5.2 "All works completed in this reporting period are within the design intent. The CW Charlie Flood Proofing works are being constructed as the design and specification for the BGM installation is being finalised by MRM. The works are to be confirmed against the final design and specification."</p> <p>The Operator advised "The TSF project receives ICE sign-off as a whole for the final construction report when completed, but no reports have been finalised at this stage." Examples of foundation hold point release forms, layer checklists, construction progress report and weekly construction reports were provided by the Operator. The Operator advised that they will be addressed to the ICE for final sign off when complete.</p> <p>OFI: Retain evidence that the ICE is present during all phases of construction where required in the approved MMP (including at hold points) and oversees and certifies that the works meet design specifications for more than the NOEF (e.g. TSF or other construction on site). The ICE should prepare reviews of the TSF and any other construction to demonstrate progressive compliance.</p> <p>OFI: Progressively implement actions raised by the ICE throughout construction to address issues to allow close out of Inspection and Test Plans (ITP).</p> |
| | | 48.c | approve re-commencement of construction at defined hold points; | 1 | | 1 | 1 | | | | | 3 | Part Compliance (High) | <p>ICE NOEF Construction Progress Report May 2020 dated July 2020.</p> <p>ICE Peer Review of NOEF Monthly Construction Progress Reports (July 2020 dated September 2020, September 2020 dated December 2020, November 2020 dated January 2021, January 2021 dated August 2021, February 2021 dated September 2021, March 2021 dated October 2021, April 2021 dated November 2021).</p> <p>ITP for CWB MS NAF Temporary Halo Cover (Cap) V1 Part 4 week 18 ICE signed 29Sep20 (ITP_CWB_101_MS NAF Cap Part 4 B_W18). (relevant to the first two days of the audit)</p> <p>CEB_2B_ITP_CCL signed and CEB_2C_ITP_CCL signed (ITP examples for Central East Bravo Foundation Cell 2B and 2C prepared date 24Feb21 and signatures in March and April 2021) No overall ICE signoff and Placement of Benign Material hold point not signed by ICE.</p> <p>CEA_3D ITP - Complete (ITP example for Central East Alpha/Bravo Foundation Cell 3D Floor prepared date 24Jun20 and signatures in July 2020).</p> <p>Some NOEF ITPs were not signed as approved by the ICE at the top of the form and had some hold points unsigned by the ICE as mentioned above. Others were generally for before the audit period and signed off 6 months after the date of the activity (e.g. ITP for works week 18, 25 April to 2 May that the ICE signed 29Sep20).</p> <p>No evidence of ICE supervision of construction other than for the NOEF (e.g. TSF) was provided.</p> | <p>July report Section 4.1 "GHD's site engineer maintained a part-time site presence for the duration of the reporting period, allowing for routine inspections of the construction works and verification of required witness and hold points."</p> <p>OFI: Confirm that the ICE is approving recommencement of construction at defined hold points and include a statement that the ICE "approved re-commencement of construction at defined hold points" for the NOEF, TSF and any other construction in relevant monthly ICE reports.</p> <p>OBS: NOEF ITPs for March to May 2020 were only signed off in September 2020.</p> |
| | | 48.d | approve any material changes to the design during construction; | 1 | | 1 | 1 | | | | | 4 | Full Compliance | <p>ICE NOEF Construction Progress Report May 2020 dated July 2020.</p> <p>ICE Peer Review of NOEF Monthly Construction Progress Reports (July 2020 dated September 2020, September 2020 dated December 2020, November 2020 dated January 2021, January 2021 dated August 2021, February 2021 dated September 2021, March 2021 dated October 2021, April 2021 dated November 2021).</p> <p>Monthly construction reports include a section on "Design/Specification Changes and Non-conformance". Specifically the July report included:</p> <p>* "CCL Layer for Central East Alpha lot 3E batter was placed thicker than design tolerance of 500 mm (-0 to +200 mm)."</p> <p>* "The additional drainage line that was installed through cells 7E and 7H was the result of discussions between MRM and GHD after it was noted that the underdrain only extended to cell 7D."</p> <p>There were no material changes to the TSF design during construction in the audit period.</p> | <p>EMR 2020 -2021 section 2.7.2 related to the TSF "In line with the January 2020 MMP, the following construction activities occurred over the reporting period:</p> <ul style="list-style-type: none"> • Completion of Cell 2 Stage 6 – 2 m upstream raise to RL 10,061. • Completion of Cell 1 Stage 5 – 3 m upstream raise to RL 10,059. • Completion of the Surprise Creek Seepage Interception Trench. <p>Construction works were completed consistent with the approved designs, the TSF Raising - General Specification for Design and Construction (Appendix I of the January 2020 MMP), and the overall Life of Mine philosophy."</p> |
| | | 48.e | verify any monitoring equipment/structure installed or to be installed as part of the construction as specified in the relevant detailed designs remains functional at the conclusion of the construction works; | 1 | | 1 | 1 | | | | | N/A | Not Applicable | <p>Future item.</p> <p>The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available."</p> <p>OBS: Include reference to this requirement in the ICE construction reports, namely verification that any monitoring equipment/structure installed or to be installed as part of the construction as specified in the relevant detailed designs remains functional at the conclusion of the construction works.</p> | |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Placement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

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| | | 48.e.i | in the event such equipment becomes non-functional, then replacement or an ICE approved alternative must be implemented by the Operator; | 1 | | | 1 | 1 | | | | | | N/A | Not Applicable | | Future item. The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available." |
| | | 48.f | agree in writing, if the Operator wish to appoint an Operator's project manager/resident engineer as an onsite representative, and agree in writing that this does not diminish the ICE's responsibility or liability for the project; | 1 | | | 1 | 1 | | | | | | N/A | Not Applicable | | The Operator advised the Independent Monitor that they did not wish to appoint an Operator's project manager/resident engineer as an onsite representative in the audit period. |
| | | 48.g | on completion of construction, provide a certified "as-constructed" construction report detailing: | 1 | | | 1 | 1 | | | | | | N/A | Not Applicable | | Future item. The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available." |
| | | 48.g.i | all the works undertaken; | 1 | | | 1 | 1 | | | | | | N/A | Not Applicable | | Future item. The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available." |
| | | 48.g.ii | evidence of: | | | | | | | | | | | | Refer to sub conditions | | |
| | | 48.g.ii.a | hold-point sign-offs; | 1 | | | 1 | 1 | | | | | | N/A | Not Applicable | | Future item. The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available." |
| | | 48.g.ii.b | testing carried out (including but not limited to field tests, laboratory tests and statistical tests); | 1 | | | 1 | 1 | | | | | | N/A | Not Applicable | | Future item. The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available." |
| | | 48.g.ii.c | acceptance criteria applied and compliance of the test results with the acceptance criteria; | 1 | | | 1 | 1 | | | | | | N/A | Not Applicable | | Future item. The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available." |
| | | 48.g.ii.d | where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised. | 1 | | | 1 | 1 | | | | | | N/A | Not Applicable | | Future item. The Operator advised "As-constructed reports will be completed once the relevant stage of the NOEF has been completed. As there are no stages complete so far, no as-construction reports are available." |
| | | 49 | The Operator must ensure that the ICE holds appropriate public and professional indemnity insurance to cover the scope of works associated with the scope of work certified. | 1 | | | | | | | | | | 3 | Part Compliance (High) | GHD Certificate of Placement – Public and Products Liability (GHD Pty Ltd (PPL)_AUD05m). GHD Certificate of Placement – Professional Indemnity (GHD Pty Ltd_AUD05m). NOEF ICE Role Proposal for Services 18 June 2021 (after audit period) GHD Certificate of Placement – Public and Products Liability from: 4.00pm 31 May 2020 to: 4.00pm 31 May 2021 - \$5,000,000 each and every occurrence – Public Liability and \$5,000,000 each and every occurrence in the aggregate – Products Liability. GHD Certificate of Placement – Professional Indemnity AUD 5,000,000 any one claim and in the aggregate 1 December 2019 at 4.00pm to 1 December 2020 at 4.00pm. No evidence was provided to demonstrate Professional Indemnity insurance from 1Dec20 to 30Apr20 | The Operator advised "GHD maintains Public and Professional Indemnity insurances that are consistent with the levels stipulated in the MRM-GHD Umbrella Agreement UMB010– Consultancy Services. The Umbrella Agreement is included at the end of the NOEF ICE Proposal provided for Condition 48." This contract is dated 18Jun21 and therefore is for after the audit period. No OFI has been prepared as there is evidence from the NOEF ICE Role Proposal for Services 18 June 2021 that appropriate public and professional indemnity insurance is required under the contract clause 12.1 (b). |
| Independent Tailings Review Board | | | | | | | | | | | | | | | | | |
| | | 50 - previously 47, 48 and 49, 50 | The Operator must: | | | | | | | | | | | | Refer to sub conditions | | No action but included for context of the subconditions. |
| | | 50.a | convene an advisory board (Independent Tailings Review Board or ITRB); | | | | 1 | | | | | | | 4 | Full Compliance | Sighted meeting minutes 8 April 2021. 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5. 20.10.02 ITRB Document Comment Tracking Register - Pbox Bleed Water. 21.01.22 ITRB Meeting Minutes. 21.03.20 ITRB Document Comment Tracking Register - TSF Cell 2 Stage 7. 21.04.08 ITRB Site Meeting Minutes. Evidence of meeting minutes and document tracking register from throughout the audit period was reviewed by the Independent Monitor demonstrating that the ITRB exists and Dr. Tamie Weaver, Prof. David Williams and Dr. Bruce Brown were the ITRB. | |
| | | 50.b | ensure the ITRB: | | | | | | | | | | | | Refer to sub conditions | | |
| | | 50.b.i | membership includes independent geotechnical, tailings, and groundwater specialists; | | | | 1 | | | | | | | 4 | Full Compliance | Curriculum vitae for ITRB members Dr. Tamie Weaver and Prof. David Williams Letter Operator to Department subject RE: MRM ITRB - Appointment of New Tailings Independent review board (ITRB) member. Curriculum vitae for ITRB members Dr. Tamie Weaver and Prof. David Williams show their experience to meet this condition. Dr. Bruce Brown's relevant experience that meets this condition is included in the letter Operator to Department subject RE: MRM ITRB - Appointment of New Tailings Independent review board (ITRB) member. | |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

Governance/General
 Non-mineral Waste Management
 Open Pit/Underground Workings
 Tailings Storage Facility
 Water Management and Storages
 Overburden Placement Facilities
 Exploration
 Waterways (including river diversion)
 Bing Bong Loading Facility

Score

Compliance Level

Evidence

Comments

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|-----------------------|----|----------|---|--|--|--|---|--|--|--|--|--|-----|-------------------------|---|--|
| | | 50.b.ii | meets regularly to advise on operation of the TSF and any future modifications to its design; | | | | 1 | | | | | | 4 | Full Compliance | 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5. 20.10.02 ITRB Document Comment Tracking Register - Pbox Bleed Water. 21.01.22 ITRB Meeting Minutes. 21.03.20 ITRB Document Comment Tracking Register - TSF Cell 2 Stage 7. 21.04.08 ITRB Site Meeting Minutes. | Evidence of meeting minutes and document tracking registers from throughout the audit period were reviewed by the IM. 21.04.08 ITRB Site Meeting Minutes included "For future auditing requirements, document ITRB site visits and meetings, responsibilities, and how they are being met." |
| | | 50.b.iii | is required to meet within 90 days from commencement of construction to allow sufficient time for review of subsequent modification to the TSF; | | | | 1 | | | | | | 4 | Full Compliance | 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5 21.03.20 ITRB Document Comment Tracking Register - TSF Cell 2 Stage 7 MRM Tailings Storage Facility Quarterly Report DECEMBER 2020 TO FEBRUARY 2020 section 2 states "Cell 1, Stage 5 construction to 10059 m, which commenced on 12 August 2021. The embankment raise was completed in November 2020, with the buttress and toe-berm completed in December 2020." Note: reference to 12Aug2021 should be 12Aug2020. This demonstrates that the ITRB did meet (document tracking date 2Jul2020) within 90 days of construction commencement (12Aug20). As the TSF Cell 2 Stage 7 ITRB is dated 20Mar2021, within 90 days falls after the audit period and therefore the Operator is compliant. | |
| | | 50.c | provide details of the members of the ITRB panel and meeting frequency to the Department for endorsement by the Department; | | | | 1 | | | | | | 4 | Full Compliance | Email Operator to Department 30Oct2017 MRM DPIR Meeting with ITRB. The ITRB members are Dr. Tamie Weaver, Prof. David Williams and Dr. Bruce Brown, which is consistent with the individuals listed in the Email Operator to Department 30Oct2017 MRM DPIR Meeting with ITRB. The Department advised the Independent Monitor in the 2020 audit that they had endorsed the members of the ITRB and there have been no changes in the audit period. | |
| | | 50.d | together with the ICE, provide a written response to the satisfaction of the Department, in the event that future review of the designs by independent experts require additional matters to be addressed; | | | | 1 | | | | | | N/A | Not Applicable | | Not applicable as review of the designs by independent experts has not occurred. |
| | | 50.e | ensure ITRB endorses any future modifications to the TSF in writing, with all ITRB review comments appropriately addressed for both construction and future use of the structure. This includes, but is not limited to: | | | | 1 | | | | | | 4 | Full Compliance | 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5. 20.10.02 ITRB Document Comment Tracking Register - Pbox Bleed Water. 21.01.22 ITRB Meeting Minutes. 21.03.20 ITRB Document Comment Tracking Register - TSF Cell 2 Stage 7. 21.04.08 ITRB Site Meeting Minutes. 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5 "GHD's Draft Detailed Design Report for the McArthur River Mining Pty Ltd (MRM) TSF Cell 1 Stage 5 Raise to RL 10059 is endorsed by the ITRB as more than adequate." 21.03.20 ITRB Document Comment Tracking Register - TSF Cell 2 Stage 7 "GHD's Detailed Design Report Revision B Draft for the McArthur River Mining Pty Ltd (MRM) Cell 2 TSF Stage 7 Raise to RL 10063 m is endorsed by the ITRB as being more than adequate." | OBS: 21.03.20 ITRB Document Comment Tracking Register - TSF Cell 2 Stage 7 was only signed by one ITRB member (out of 3 members), typically all members signed the Document Comment Tracking Register. |
| | | 50.e.i | Studies and/or trials to inform future construction and/or operation of the structure; | | | | 1 | | | | | | N/A | Not Applicable | | The Operator advised the Independent Monitor that there have been no studies or trials in the audit period to inform future construction and/or operation of the TSF. |
| | | 50.e.ii | The TSF Operations, Maintenance and Surveillance (OMS) manual, including the Trigger, Action and Response Plan (TARP) is updated regularly to accommodate any relevant changes to the structure that may impact on its stability and performance. | | | | 1 | | | | | | 3 | Part Compliance (High) | TSF Operations, Maintenance and Surveillance (OMS) manual version 5 dated 31 July 2020 (Revision following re-commissioning Cell 1, changeover to MRM prepared document). 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5. TSF Operations, Maintenance and Surveillance (OMS) manual Section 2.2.5 states "The ITRB shall meet and review annually as a minimum, and must consider when there is a change to the Consequence Category assessment, modifications to the design or operations of the structure or issues of concern noted in the annual dam safety inspections." This 31 July 2020 OMS appears to have been updated for the Cell 1 Stage 4 Raise based on page 1 of the document, "Revision following Cell 1 Stage 4 Raise to RL 10,056 m". Therefore it did not appear to have been updated based on the ITRB comments on the Cell 1 Stage 5 raise. In 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5 the ITRB in item 25 required OMS update and response from Operator included that OMS would be updated. Item 7 also noted the requirement to update and review the OMS before commissioning. MRM Tailings Storage Facility Quarterly Report December 2020 – February 2021 states in section 2 "Cell 1, Stage 5 construction to 10059 m, which commenced on 12 August 2020. The embankment raise was completed in November 2020, with the buttress and toe-berm completed in December 2020." The Independent Monitor was not provided with evidence that the ITRB's comments related to the OMS from 20.07.02 ITRB Document Comment Tracking Register - Cell 1 Stage 5 had been addressed in the OMS before commissioning and therefore as a subcondition to 50.e this is only part compliant. | OFI: Ensure the Independent Tailings Review Board (ITRB) review comments on the TSF Operations, Maintenance and Surveillance (OMS) manual are incorporated into the OMS before new construction commissioning. |
| Waste Rock Management | | | | | | | | | | | | | | | | |
| 16 | 16 | | From the commencement of this variation to Authorisation Non-benign Waste is to be permanently placed: | | | | | | | | | | | Refer to sub conditions | | Included for context for old sub conditions |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Placement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

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| 16.b | 16.b | on a compacted clay liner (CCL) or engineered low permeability material that slopes towards a Perimeter Runoff Dam (PROD) or a storage structure, as defined in 37(a); | | | | | | | | | | | 4 | Full Compliance | <p>NOEF Central East Lot 4F Floor ITP signed 23Jun20 and 24Jun20 (CE_Alpha ITP Lot 4F Floor_Finished). NOEF Central East CEA 2D Floor ITP signed 29Jul20 and 30Jul20 (CEA 2D ITP - complete). Letter from ICE to Operator dated 23Apr20 subject NOEF Central East Foundation Investigation - ICE Review. EMR 2020 - 2021. NOEF Construction Progress Report April 2020 dated June 2020 (although the April 2020 report was before the audit period this is considered evidence given it is dated June 2020).</p> <p>NOEF Construction Progress Report April 2020 dated June 2020 "The Central East Alpha and Bravo Stage expansion will feature a sloping low permeability foundation designed to enhance the movement of infiltration through the NOEF to seepage extraction points on the eastern perimeter."</p> <p>ICE signoff sheets for all basal clay liners reviewed. Central East Alpha/Bravo – Subgrade, Basal CCL and Benign Rock Fill (CE_Alpha ITP Lot 4F Floor_Finished) signed off in June 2020 included "The CCL layer shall: [...] Minimum thickness of 500 mm, and shall be compacted in maximum horizontal layers of 300 mm (after compaction) and to at least 98% of SMDD or HILF." and related to CCL Placement "Minimum of 500 mm (-0 mm/ +100 mm) thickness and self-shedding profile achieved" and included permeability testing. Central East Alpha/Bravo – Subgrade, Basal CCL and Benign Rock Fill (CEA 2D ITP - complete) signed off July 2020 was similar to the NOEF Central East Lot 4F Floor ITP.</p> <p>Section 2.5.2 of the EMR states "The CE stage was constructed as per the OMP EIS methodology and consistent with the approved MMP, including the development of:</p> <ul style="list-style-type: none"> a minimum 0.5 m thick low permeability liner with a maximum saturated hydraulic conductivity of 1 x 10⁻⁹ metres per second" and "The testing showed that 100% of the CCL lots constructed were in conformance with the required permeability specification and zero failures were observed". Table 8 of the EMR 2020-2021 NOEF Central East Stage Compacted Clay Liner Testing has the minimum required number of tests for permeability was 17 and that 17 were conducted. | <p>This condition is only relevant until 13Nov2020. Specifically needs to be "engineered" fill for this timeframe.</p> <p>ICE Review of NOEF Central East Foundation Investigation 23 April 2020 is from before the audit period but "The report describes investigations that have been carried out by MRM to further assess the hydraulic properties of the foundation below existing developed areas of NOEF Central East". The report also states "The report findings are endorsed and GHD considers that the investigation provides sufficient evidence that the existing stockpile foundation meets the design intent and satisfies (and likely exceeds) the minimum 0.5 m thick, minimum 1x10⁻⁹ m/s CCL specification".</p> <p>RFI to condition 113 about "engineered" liner.</p> |
| 16.c | 16.c | and encapsulated in a minimum of a 600mm thick CCL, or engineered low permeability material, upon construction being finalised; and | | | | | | | | | | | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. The condition is not applicable because construction was not finalised before 13Nov2020. |
| 16.d | 16.d | the encapsulation CCL or engineered low permeability material must be covered by benign material to protect it from erosion and desiccation. | | | | | | | | | | | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. The condition is not applicable because construction was not finalised before 13Nov2020. |
| 17 | 17 | PAF (HC) and PAF (RE) waste rock cells, if not finalised, will have interim alluvium covers placed prior to the 1st November each year. | | | | | | | | | | | N/A | Not Applicable | | <p>Condition not included in 13Nov2020 authorisation. Considered superseded by the current Authorisation. This condition is only relevant until 13Nov2020.</p> <p>This condition has been removed from the 13Nov2020 Authorisation, which is recognition from DITT that it was impractical and that the requirement was not necessary to mitigate potential environmental risk.</p> |
| 18 | 18 | The Operator must only place PAF (HC) and PAF (RE) Waste Rock at the following locations: | | | | | | | | | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020. |
| 18.a | 18.a | NOEF West A, B, C and D; | | | | | | | | | | | N/A | Not Applicable | <p>EMR 2020 - 2021. EMR 2020 - 2021 Section 2.5.1 states "Smaller amounts of waste were emplaced on West A, B, C and D and CW Alpha/Bravo (as planned) as a cover to protect the PAF cell from erosion and construct the drainage appropriately. " The EMR 2020 - 2021 table 6 showed that the waste was not PAF (HC) and PAF (RE) Waste Rock so this sub-condition is N/A.</p> | This condition is only relevant until 13Nov2020. |
| 18.b | 18.b | Central West NOEF (CWNOEF) Alpha and Bravo stages, but only after the Western Perimeter Runoff Dam (WPROD) has been designed, constructed and commissioned in accordance with all requirements of the Minister; | | | | | | | | | | | 4 | Full Compliance | <p>EMR 2020 - 2021. WPROD was completed in July 2017 (before the audit period commenced) and Independent Monitor sighted a completion report dated 14Jul2017. Operator advised waste was placed in Central West NOEF (CWNOEF) Alpha and Bravo stages.</p> <p>EMR 2020 - 2021 Section 2.5.1 states "Smaller amounts of waste were emplaced on West A, B, C and D and CW Alpha/Bravo (as planned) as a cover to protect the PAF cell from erosion and construct the drainage appropriately. "</p> | This condition is only relevant until 13Nov2020. |
| 18.c | 18.c | Central West NOEF (CWNOEF) Charlie stage, only after approval under the EPBC Act; and | | | | | | | | | | | 4 | Full Compliance | <p>EMR 2020 - 2021. There was EPBC Act approval so this location was acceptable. Note which approval number - RFI.</p> <p>EMR 2020 - 2021 in Table 6 shows waste was placed in Central West NOEF during the audit period. EMR 2020 - 2021 Section 2.5.1 states "During the reporting period, the majority of the overburden was placed in the CW Charlie and Central East stages of the NOEF (as planned). Smaller amounts of waste were emplaced on West A, B, C and D and CW Alpha/Bravo (as planned) as a cover to protect the PAF cell from erosion and construct the drainage appropriately. "</p> | It was difficult to distinguish between the placement of waste at Alpha and Bravo stages or Charlie stages as they were listed together in Table 6 of the EMR 2020-2021. The latest Authorisation approved 13Nov2020 no longer contains this condition as all areas are approved. |
| 18.d | 18.d | Central East NOEF (CENOE) Alpha and Bravo, but only after: | | | | | | | | | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020 and is covered by the subconditions. |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden | Emplacement | Facilities | Exploration | Waterways (including river | diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments | |
|---|---|---|---|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|------------|-------------|------------|-------------|----------------------------|------------|----------------------------|-------|------------------|-------------------------|---|---|
| 18.d.i | 18.d.i | | approval under the EPBC Act; | | | | | | | | | | | 1 | | | | | | 4 | Full Compliance | EPBC 2014-7210 | This condition is only relevant until 13Nov2020. There was EPBC Act approval so this location was acceptable (EPBC 2014-7210). EMR 2020 - 2021 in Table 6 shows waste was placed in Central East NOEF during the audit period. EMR 2020 - 2021 Section 2.5.1 states "During the reporting period, the majority of the overburden was placed in the CW Charlie and Central East stages of the NOEF (as planned)." |
| 18.d.ii | 18.d.ii | | the completion of construction in accordance with Conditions 25 and 27; and | | | | | | | | | | | 1 | | | | | | 4 | Full Compliance | Refer conditions 25 and 27. | This condition is only relevant until 13Nov2020. The Operator advised "the placement of waste in the CENOEF is considered part of the construction of the entire stage. The requirement of Condition 18dii is that construction of the CENOEF stage, including the emplacement of PAF (HC) and PAF (RE) waste rock, is completed in accordance with the design concepts within the January 2019 MMP Amendment (Condition 25)." |
| 18.d.iii | 18.d.iii | | commissioning of the Eastern Perimeter Runoff Dam (EPROD) in accordance with Conditions 43, 44 and 45. | | | | | | | | 1 | | 1 | | | | | | | 3 | Part Compliance (High) | EMR 2020 - 2021. Email Department to Operator subject MRM - Commissioning of EPROD dated 20Mar 2020. The Operator advised "Stage 1 Commissioning of EPROD was conducted between March 2020 and June 2020. Approval was then provided by the ICE for subsequent filling of the dam above the Stage 1 commissioning level, and with low pH water. Lack of available suitable water has resulted in Stage 2 Commissioning (i.e. controlled filling to Full Supply Level (FSL)) not being completed yet. Note: EPROD has not been used to capture water from the CENOEF stage yet, and won't be for the coming wet season either. Water from the CENOEF stage has been and will continue to be in the near term, directed into the CE Alpha/CE Bravo sumps, from where it is pumped to alternative PRODS. Waste placement commenced in CENOEF in June 2020 in accordance with the MMP and concept designs / ITPs approved and endorsed by the ICE. Once the stage has been completed, the Construction Report will be drafted and endorsed by the ICE." The EMR 2020 - 2021 Section 4.1.1 says the following related to EPROD "The dam was subsequently emptied to complete full commissioning between 17 August and 23 October 2020. The dam underwent a period of controlled filling as part of the commissioning process from 23 October to 20 December 2020. The dam has been exclusively operated as a turkey's nest (no reporting catchment) and used to store and manage PbOx impacted water." No evidence that the EPROD construction report required in condition 45 has been submitted to the Department | This condition is only relevant until 13Nov2020. Email Department to Operator subject MRM - Commissioning of EPROD dated 20Mar 2020 from Department to Operator stated "Looking at the Authorisation relating to EPROD, Condition 45 requires the ICE to certify the construction reports and data and submission of these information to this Department prior to commencement of EPROD for operational purposes. Given that ICE has identified the pit can be dewatered and the water used as part of the commissioning tests, it is accepted that the intent of Condition 45 of the Authorisation for operational use EPROD will be achieved." and "I therefore formally advise that the use of EPROD for operational purposes is approved and is subject to being carried out in accordance with the submitted endorsement letter from the ICE and accompanying Commissioning Plan." The does not mean that condition 45 was met, only that EPROD could be used for operational purposes (i.e. as constructed reports were still required). As condition 45 was not completed, condition 18 is considered part-compliant. Condition 18.d.iii is no longer included in the 13Nov2020 Authorisation and therefore no OFI is created. The requirement to be in accordance with condition 45 (Construction reports including QA and QC data endorsed by the Independent Certifying Engineer (ICE) must be provided to the Department prior to commencement of operation within 30 days of construction being completed) has not occurred. Condition 45 has been removed from 13Nov2020 but is covered by condition75k. The intent is that condition 75k should stand alone rather than depending on a dewatering event. |
| | | 51 - previously 16 | From the date of authorisation Non-benign Waste is to be permanently placed consistent with the approved MMP: | | | | | | | | | | | | | | | | | | Refer to sub conditions | | |
| | | 51.a - previously 16.a | above the 100 year ARI flood level, unless flood mitigation measures are provided consistent with the approved MMP and relevant Detailed Designs submitted to the Department in accordance with the conditions of this variation of Authorisation, with the exception of PAF(RE); | | | | | | | | | | | 1 | | | | | | 4 | Full Compliance | CE Stage PAF_RE Cell - Section A_V2 The CE Stage PAF_RE Cell - Section A_V2 is a plan and cross section of the CE Stage showing the lowest point of PAF(RE) at approximately 10,048 m RL and the 1:100 ARI flood level of approximately 10039.5 m RL. Demonstrating that PAF(RE) is above the 1:100 year ARI flood level . | The Operator advised "the ITP will be updated to have the ICE confirm construction requirements relating to the 1:100 ARI flood level are met." |

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden Placement | Facilities | Exploration | Waterways (including river | diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|--|--|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|----------------------|------------|-------------|----------------------------|------------|----------------------------|-------|------------------|---|---|
| | | 51.b - previously 16.a changed | on a compacted clay liner (CCL) or low permeability material that satisfies the design objective in Condition 20 that slopes towards a Perimeter Runoff Dam (PROD) or an appropriately lined storage structure, as defined in Condition 58(a); | | | | | | | | | | 1 | | | | | 4 | Full Compliance | <p>EMR 2020 - 2021 DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) CEB_2B_ITP_CCL signed and CEB_2C_ITP_CCL signed (ITP examples for Central East Bravo Foundation Cell 2B and 2C prepared date 24Feb21 and signatures in March and April 2021) No overall ICE signoff and Placement of Benign Material hold point not signed by ICE. CEA_3D ITP - Complete (ITP example for Central East Alpha/Bravo Foundation Cell 3D Floor prepared date 24Jun20 and signatures in July 2020)</p> <p>Section 2.5.2 of the EMR states "The CE stage was constructed as per the OMP EIS methodology and consistent with the approved MMP, including the development of: • a minimum 0.5 m thick low permeability liner with a maximum saturated hydraulic conductivity of 1 x 10⁻⁹ metres per second, shaped such that water reaching the liner will flow towards dedicated seepage extraction locations" and "The testing showed that 100% of the CCL lots constructed were in conformance with the required permeability specification and zero failures were observed". Table 8 of the EMR 2020-2021 NOEF Central East Stage Compacted Clay Liner Testing has the minimum required number of tests for permeability was 17 and that 17 were conducted.</p> <p>DITT Site Inspection Report dated 3Feb2021 stated "The drone footage additionally indicated the CE stage, overall, is being heavily worked for future waste rock placement, with basal wedge layer construction in progress to direct runoff towards the Eastern Perimeter Runoff Dam (EPROD)".</p> <p>A number of ITPs for CEA and CEB were provided from the audit period and demonstrated ICE signoff of construction of the CCL that stated a requirement for permeability testing and minimum of 500 mm thickness. There were some non-conformances in April 2021 noted related to CCL thickness.</p> | OBS: Some ITPs were not signed as approved by the ICE at the top of the form and had some hold points unsigned by the ICE, however those requirements are not specific to this Authorisation condition. |
| | | 51.c - previously 20.a.i for CWNOEF Alpha and Bravo and 23.a.i for Charlie | PAF is emplaced in lift heights that minimises particle size segregation and creation of chimney structures, and must not exceed 7.5m taking into construction tolerances; | | | | | | | | | | 1 | | | | | 4 | Full Compliance | <p>EMR 2020 - 2021. Peer Review of NOEF Monthly Construction Progress Reports: *November 2020 dated January 2021. *July 2020 dated September 2020. *April 2021 dated November 2021. EMR 2020 - 2021.</p> <p>Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059)</p> <p>Section 2.5.2 of the EMR states "the CE stage was constructed as per the OMP EIS methodology and consistent with the approved MMP, including the development of: [...]"</p> <ul style="list-style-type: none"> • 'Wedge' geometry on top of the Base zone, constructed from non-benign material in up to 7.5 m lifts, with alluvium advection barriers between each lift, and sloped to assist surface water runoff to EPROD; • the Core zone constructed from non-benign waste in up to 7.5 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF material;" <p>Peer Review of NOEF Monthly Construction Progress Report July 2020 Section 3.2.1 Central West Charlie Core Lift 3 "The haulage and dumping of PAF HC material to form a 7.5 m lift on top of core lift 2 to form core lift 3 continued throughout the month." and Section 3.2.2 Central West Charlie Core Lift 4 "The haulage and dumping of PAF HC material to form a 7.5 m lift on top of core lift 3 to form core lift 4 was completed in the last three weeks of the month."</p> | <p>Note the previous variation of authorisation versions did not include construction tolerances.</p> <p>DITT Site Inspection Report dated 3Feb2021 stated "Construction of the NOEF, comprising waste placement continued in the Central West NOEF stage during the inspection (Plate 16). Adam Hatfield described the approved PAF waste placement techniques at NOEF that comprised placement of PAF (RE) in 2 m rises, while all other material was placed in 7 m rises. All rises were separated by a 100 mm advection barrier. This placement method is consistent with the Authorisation."</p> <p>Peer Review of NOEF Monthly Construction Progress Report November 2020 Section 3.2.2 Central West Charlie Core Lift 5 "The hauling and dumping of PAF-HC material to form a 7.5 m lift on top of core lift 4 to form core lift 5 continued throughout the month."</p> <p>NOEF Monthly Construction Progress Report April 2021 states "– Measurements above the required maximum of 7.5 m for a core lift or 2 m for a PAF RE cell, or more than 0.5 m from the design surface were found in the following ITPs: - ITP_CWC1_C007_PAFHC Week 17".</p> <p>NOEF Monthly Construction Progress Report March 2021 states "Measurements above the required maximum of 7.5 m for a core lift or 2 m for a PAF RE cell, or more than 0.5 m from the design surface were found in the following ITPs: o ITP_CWC1_C006_PAFHC Week 9 o ITP_CWC1_C006_PAFHC Week 10 o ITP_CWC1_C007_PAFHC Week 10 o ITP_CWC1_C007_PAFHC Week 11</p> <p>OBS: Identified occurrences of measurements above the required maximum of 7.5m for a PAF lift height. The relevant ITPs remain open and so these exceedances will be reassessed in next AEPAR.</p> |
| | | 51.d - previously 23.a.ii for Charlie changed | PAF(RE) is emplaced in dedicated cells in lift heights that minimises particle size segregation and creation of chimney structures, but must not exceed 2m taking into construction tolerances; | | | | | | | | | | 1 | | | | | 4 | Full Compliance | <p>DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) EMR 2020 - 2021. Peer Review of NOEF Monthly Construction Progress Reports April 2021 dated November 2021.</p> <p>Section 2.5.2 of the EMR states "the CE stage was constructed as per the OMP EIS methodology and consistent with the approved MMP, including the development of: [...]"</p> <ul style="list-style-type: none"> • the PAF(RE) Cell, constructed in up to 2 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF(RE) waste." <p>Peer Review of NOEF Monthly Construction Progress Reports April 2021 dated November 2021 states "– Measurements above the required maximum of 7.5 m for a core lift or 2 m for a PAF RE cell, or more than 0.5 m from the design surface were found in the following ITPs: - ITP_CWC1_C007_PAFHC Week 17".</p> | <p>Note the previous variation of authorisation versions did not include construction tolerances.</p> <p>DITT Site Inspection Report dated 3Feb2021 stated "Construction of the NOEF, comprising waste placement continued in the Central West NOEF stage during the inspection (Plate 16). Adam Hatfield described the approved PAF waste placement techniques at NOEF that comprised placement of PAF (RE) in 2 m rises, while all other material was placed in 7 m rises. All rises were separated by a 100 mm advection barrier. This placement method is consistent with the Authorisation."</p> <p>OBS: Identified occurrences of measurements above the required maximum of 7.5m for a PAF lift height. The relevant ITPs remain open and so these exceedances will be reassessed in next AEPAR.</p> |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

Governance/General
 Non-mineral Waste Management
 Open Pit/Underground Workings
 Tailings Storage Facility
 Water Management and Storages
 Overburden Placement Facilities
 Exploration
 Waterways (including river diversion)
 Bing Bong Loading Facility

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | | | | | |
|------------------------|----|---|---|--|--|--|--|--|--|--|--|---|-----|-------------------------|--|--|
| | | 51.e - previously 20.a.ii for CWNOEF Alpha and Bravo and 23.a.iii for Charlie | advection barriers of appropriate thickness and moisture condition are emplaced at suitable intervals that disrupt the formation of oxygen convection cycles; | | | | | | | | | 1 | 4 | Full Compliance | McArthur River Mining Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020, dated September 2020 (July 2020 NOEF Construction_GHD Progress Report). DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) MRM Inspection and Test Plan (ITP) Week 14 Apr. 11 – Apr. 17, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNC Week 15). MRM Inspection and Test Plan (ITP) Week 16 Apr. 16 – Apr. 24, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNC Week 16). Section 3.2.1 of the McArthur River Mining Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 states "The haulage and dumping of PAF HC material to form a 7.5 m lift on top of core lift 2 to form core lift 3 continued throughout the month. Works included ongoing dumping at the tip head and paddock dumping at the top of the lift, shaping of batters and placement of alluvial to form an advection barrier." However, it does not mention PAF placement. | DITT Site Inspection Report dated 3Feb2021 stated "Construction of the NOEF, comprising waste placement continued in the Central West NOEF stage during the inspection (Plate 16). Adam Hatfield described the approved PAF waste placement techniques at NOEF that comprised placement of PAF (RE) in 2 m rises, while all other material was placed in 7 m rises. All rises were separated by a 100 mm advection barrier. This placement method is consistent with the Authorisation." OBS: Identified occurrences of measurements above the required maximum of 7.5m for a PAF lift height. The relevant ITPs remain open and so these exceedances will be reassessed in next AEPAR. |
| | | 51.f - previously 20.a.iii for CWNOEF Alpha and Bravo | the ICE verifies the suitability of the PAF placement methodology with respect to particle size segregation and advection barriers; | | | | | | | | | 1 | 4 | Full Compliance | McArthur River Mining Pty Ltd Peer Review of NOEF Monthly Construction Progress Report. July 2020 dated September 2020 (July 2020 NOEF Construction_GHD Progress Report). MRM Inspection and Test Plan (ITP) Week 14 Apr. 11 – Apr. 17, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNC Week 15). MRM Inspection and Test Plan (ITP) Week 16 Apr. 16 – Apr. 24, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNC Week 16). Section 1.1.2 of the McArthur River Mining Pty Ltd Peer Review of NOEF Monthly Construction Progress Reports for July 2020 and November 2020 state "GHD's role included witnessing construction processes including surface preparation, material selection, batter emplacement and advection barrier placement." MRM Inspection and Test Plan (ITP) Week 14 Apr. 11 – Apr. 17, 2021 with ICE signoff 24Jun21 has line 4 for Advection Barrier Placement and it is a witness point visual inspection by the ICE for the top and requires "Haul and dump alluvial material to work area. Material to meet >60% passing 2.0 mm (sand) with the size of largest particle 0.2 m (cobble) – visual assessment only" and "Spread on top surfaces to 0.1 m +/- 0.05 m thick. Spread on batters to 0.5 m +/- 0.2 m thick. Track roll by doze". However, it does not mention PAF placement. | |
| | | 51.g | construction of the NOEF stages, as defined in Conditions 53 and 54 is undertaken in accordance with a valid AAPA certificate; | | | | | | | | | 1 | 4 | Full Compliance | EMR 2020 - 2021. PRO-2200033 Permit to Clear Procedure and Forms. Sighted Ground Disturbance Permit 10/4/21 to 10/5/21 (for NOEF). EMR 2020 - 2021 "No disturbance has occurred in the area of the MRM4 Cultural Site. The MRM4 Cultural Site has an exclusion fence constructed around it, ranging from approximately 5 m to 85 m offset from the actual site, with appropriate signage as per Plate 2. Prior to any disturbance occurring within the fenced off MRM4 area, the following is required: • An AAPA Certificate obtained for the required disturbance (including undertaking any activities set out as conditions of the AAPA Certificate). • Submission to and approval by the MRM Environment and Community Departments of the required Dig and/or Clearing Permit." | |
| | | 51.h | design of the NOEF is flexible to accommodate changes, if required, to comply with archaeological site MRM4 matters under Condition 31; | | | | | | | | | 1 | 4 | Full Compliance | The NOEF is already designed to leave the MRM4 area undisturbed, if approval is not granted. An example of the design accommodating MRM4 is that there is an optional levy in between the NOEF and MRM4 in plans in case approval is not obtained to expand into the MRM4 area. Figure 14 of the January 2020 MMP shows the potential location of this optional levy. | |
| | | 51.i | in the event that future review of the designs or as-built structure by independent experts require additional matters to be addressed, the Operator together with the ICE must provide a written response to the satisfaction of the Department; | | | | | | | | | 1 | N/A | Not Applicable | | This is not applicable as no future review of the designs or as-built structure by independent experts has occurred. |
| | | 51.j | at mine closure, non-benign waste rock is encapsulated and fully contained within an engineered cover system consistent with the Overburden Management Project, or an alternative cover system endorsed by the relevant independent technical panels to the satisfaction of the Department. | | | | | | | | | 1 | N/A | Not Applicable | | Future item. The mine remains operational. |
| Construction of CWNOEF | | | | | | | | | | | | | | | | |
| | | | ALPHA AND BRAVO STAGES | | | | | | | | | | | | | |
| 19 | 19 | | The Operator must construct, operate and maintain the CWNOEF Alpha and Bravo Stages in accordance with: | | | | | | | | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020. |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden Emplacement | Facilities | Exploration | Waterways (including river diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments | |
|---|---|---|---|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|------------------------|------------|-------------|---------------------------------------|----------------------------|-------|------------------|-------------------------|---|--|
| 19.a | 19.a | | The version of the document entitled Northern Overburden Emplacement Facility (Central West Phase) Design, Construction & Operations Manual which has been approved by the Minister from time to time, subject to any conditions imposed or changes required by the Minister[9]. | | | | | | | | | | 1 | | | | | 4 | Full Compliance | EMR 2020 -2021. NOEF Construction Progress Report May 2020 dated July 2020. Peer Review of NOEF Monthly Construction Progress Reports: *July 2020 dated September 2020. *September 2020 dated December 2020. *November 2020 dated January 2021. ITP CWB Hot Spot Remediation - Alluvial Week 18 25/04/2020 –02/05/2020 (relevant first two days of the audit period). This condition applies to CWNOEF Alpha and Bravo Stages. The EMR 2020 - 2021 states "• NOEF Central West (CW) stage: Continued construction of the MS-NAF Halo and advection barriers on the top face and stockpiling of materials on CW Alpha and Bravo;". The construction progress reports for May, June, July, August, September, October and November 2020 don't include CW Alpha and Bravo. The Operator advised "There were some minor works completed in CW Alpha/Bravo Stage in the period 1 Apr - 13 Nov 2020, mainly Halo construction/shaping and placement of temporary stockpiles." | This condition is only relevant until 13Nov2020. Note [9]: At the date of this document [sic Authorisation approval 15Aug2019], version 2.1 of the manual had been approved subject to the changes set out in the Operator's submission to the former Department of Mines and Energy dated 05Feb2016 (identified as MDOC2016/00840 in the Department's document management system). There is no reference to the Northern Overburden Emplacement Facility (Central West Phase) Design, Construction & Operations Manual in the EMR 2020 -2021. MRM Peer Review of NOEF Monthly Construction Progress Report August 2020 and MRM Peer Review of NOEF Monthly Construction Progress Report October 2020 both dated December 2020 include reference to "Relevant construction documentation includes the following: * NOEF Management Plan – Design, Construction and Operations (January 2020) * NOEF Design & Construction Guidelines, 2020 Edition V01 (January 2020)" |
| 19.b | 19.b | | Concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12. Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ICE must provide a written response that justifies the existing design or proposes an alternate design to the satisfaction of the department. | | | | | | | | | | 1 | | | | | 4 | Full Compliance | NOEF Construction Progress Report May 2020 dated July 2020. Peer Review of NOEF Monthly Construction Progress Reports: *July 2020 dated September 2020. *September 2020 dated December 2020. *November 2020 dated January 2021. ITP CWB Hot Spot Remediation - Alluvial Week 18 25/04/2020 –02/05/2020 (relevant first two days of the audit period). Waste was placed at CWNOEF during the audit period as shown in table 6 of the EMR 2020 - 2021. The EMR 2020 - 2021 states "• NOEF Central West (CW) stage: Continued construction of the MS-NAF Halo and advection barriers on the top face and stockpiling of materials on CW Alpha and Bravo;". The construction progress reports for May, June, July, August, September, October and November 2020 don't include CW Alpha and Bravo. The Operator advised "There were some minor works completed in CW Alpha/Bravo Stage in the period 1 Apr - 13 Nov 2020, mainly Halo construction/shaping and placement of temporary stockpiles." | This condition is only relevant until 13Nov2020. Operator is not aware of any independent experts requiring additional matters to be addressed. |
| 20 | 20 | | During construction of the CWNOEF Alpha and Bravo stages, | | | | | | | | | | | | | | | | Refer to sub conditions | | |
| 20.b | 20.b | | the Operator must provide construction reports to the Minister upon request including the following: | | | | | | | | | | 1 | | | | | N/A | Not Applicable | This condition is only relevant until 13Nov2020. No requests during the audit period. | |
| 20.b.i | 20.b.i | | QA and QC results and reporting for CCLs; and | | | | | | | | | | 1 | | | | | N/A | Not Applicable | This condition is only relevant until 13Nov2020. | |
| 20.b.ii | 20.b.ii | | results and reporting of testing undertaken to waste rock placement; | | | | | | | | | | 1 | | | | | N/A | Not Applicable | This condition is only relevant until 13Nov2020. | |
| 20.b.iii | 20.b.iii | | results and reporting of testing undertaken to confirm alluvial materials placed at the CWNOEF would not generate AMD if exposed to water and were geotechnically suitable for the location they were placed. | | | | | | | | | | 1 | | | | | N/A | Not Applicable | This condition is only relevant until 13Nov2020. | |
| CHARLIE STAGE | | | | | | | | | | | | | 1 | | | | | | Refer to sub conditions | | |
| 22 | 22 | | The Operator is authorised to complete works to prepare and construct CWNOEF Charlie stage in accordance with: | | | | | | | | | | | | | | | | Refer to sub conditions | | |
| 22.a | 22.a | | the 2013-2015 MMP amendment entitled Mining Management Plan Amendment: North Overburden Emplacement Facility – Central West Charlie Stage Foundation and additional information provided to the Department, as defined in condition 1(j)(ii)(10). The Operator must ensure: | | | | | | | | | | 1 | | | | | 4 | Full Compliance | CWC ICE Review Letter 20Aug2019 (outside audit period). Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020. Peer Review of NOEF Monthly Construction Progress Report September 2020 dated December 2020. EMR 2020 - 2021. Peer Review of NOEF Monthly Construction Progress Report September 2020 section 3.2.1 related to Central West Charlie "Ongoing surveying of the surfaces to check for compliance to the design criteria was completed." Peer Review of NOEF Monthly Construction Progress Report July 2020 section 3.2.1 related to Central West Charlie "Ongoing surveying of the surfaces and batters to check for compliance to the design was completed." EMR 2020 - 2021 section 2.5.1 states "NOEF Central West (CW) stage: Continued construction of the MS-NAF Halo and advection barriers on the top face and stockpiling of materials on CW Alpha and Bravo; continued construction of CW Charlie stage as per OMP EIS methodology." | This condition is only relevant until 13Nov2020. Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 states "The design is consistent with the latest approvals that include the OMP EIS NOEF concepts." Outside the audit period. EMR 2020 - 2021 section 2.5.2 states "The CW Charlie stage was constructed as per the OMP EIS methodology, including: • Completion of the 'Wedge' geometry on top of the Base zone, constructed from non-benign material in up to 7.5 m lifts, with alluvium advection barriers between each lift, and sloped to assist surface water runoff to WPROD; • Development of the Core and Halo zones constructed from non-benign waste in up to 7.5 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF material; and • Completion of the PAF(RE) Cell, constructed in up to 2 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF(RE) waste." |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden Emplacement | Facilities | Exploration | Waterways (including river | diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|------------------------|------------|-------------|----------------------------|------------|----------------------------|-------|------------------------|---|--|
| 22.a.i | 22.a.i | | including allowances for survey accuracy/tolerances, the post construction CCL thickness is not less than 500mm; | | | | | | | | | | 1 | | | | | 4 | Full Compliance | Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020 Peer Review of NOEF Monthly Construction Progress Report September 2020 dated December 2020 Peer Review of NOEF Monthly Construction Progress Report September 2020 section 3.2.1 related to Central West Charlie "Ongoing surveying of the surfaces to check for compliance to the design criteria was completed." Peer Review of NOEF Monthly Construction Progress Report July 2020 section 3.2.1 related to Central West Charlie "Ongoing surveying of the surfaces and batters to check for compliance to the design was completed." | This condition is only relevant until 13Nov2020. |
| 22.a.ii | 22.a.ii | | the acceptance criteria for all tests, including those outlined in the condition 1.1)(ii)(10), that are to be undertaken as part of the construction must be provided to the Department prior to commencement of the construction; | | | | | | | | | | 1 | | | | | 3 | Part Compliance (High) | NOEF Construction Progress Report May 2020 dated July 2020. Peer Review of NOEF Monthly Construction Progress Reports: *July 2020 dated September 2020. *September 2020 dated December 2020. *November 2020 dated January 2021. *January 2021 dated August 2021. * February 2021 dated September 2021. *March 2021 dated October 2021. *April 2021 dated November 2021. CWC ICE Review Letter 20Aug2019 (before audit period). Department to Operator email subject FW: MRM Central West Charlie Stage - Detailed Design Report dated 21 August 2019 (before audit period but demonstrates example of DITT receipt). The acceptance criteria for all Compacted Clay Liner tests are included in the "Compacted Clay Liners (CCL's)" Section of the relevant stage Construction Specification/Design Report. The relevant stage reports for the reporting period have been provided: Central West Operations Manual Rev2.1 (Section 9.5). CW Charlie 2018 Design Report V4 (Section 6.3). CW Charlie Complete Works Report V2 (Appendix 1 CW Charlie Complete Works Construction Specification - Section 6.3). Section 6.3 of Appendix 1 - CW Charlie Complete Works Construction Specification from the CW Charlie Complete Works Report V2 checked and compliant for CCL. Additional acceptance criteria for subgrade in Section 6.2, protective rockfill layers in Section 6.4, Structural Fill in Section 6.5, etc. NOEF Monthly Construction Progress Reports prepared by the ICE state that for CW Charlie Flood Proofing works no quality documentation or test results have been submitted for review to date. | This condition is only relevant until 13Nov2020. These design reports were provided to the Department, with the ICE endorsement letters, prior to the commencement of construction (before the audit period). NOEF Monthly Construction Progress Reports April to November state "The CW Charlie Flood Proofing works are progressing well and appear to be at an acceptable quality, however no quality documentation or test results have been submitted for review to date. All installation documentation will require review and appropriate checks against the design once complete." The January, February report state there was no work on the flood levee due to the wet season. The March and April 2021 reports do not mention the flood levee. While this condition is no longer in the 13Nov20 Authorisation, the OFI is relevant to condition 48 and therefore is included in this audit. OFI: Provide evidence that test results for construction of Central West Charlie Flood Proofing works were in accordance with the relevant acceptance criteria. |
| 22.a.iii | 22.a.iii | | waste rock used for construction of the CWNOEF Charlie stage foundation, as outlined in the condition 1.1)(ii)(10), meets the geochemical criteria for classification as benign; | | | | | | | | | | 1 | | | | | 4 | Full Compliance | NOEF Construction Progress Report May 2020 dated July 2020. Peer Review of NOEF Monthly Construction Progress Reports: *July 2020 dated September 2020. *September 2020 dated December 2020. *November 2020 dated January 2021. *January 2021 dated August 2021. * February 2021 dated September 2021. *March 2021 dated October 2021. *April 2021 dated November 2021. CWC ICE Review Letter 20Aug2019 (before audit period). EMR 2020-2021. Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20 August 2019 states "The design report covers works associated with the placement of non-benign materials in the stage". Table 3 of EMR 2020-2021 includes OVERBURDEN EMPLACEMENT FACILITY WASTE SAMPLING FREQUENCIES. The number of samples undertaken did not appear to meet the standard quantity listed. However, Section 2.3.2 states "MRM operated in accordance with the January 2020 MMP following its authorisation on 10 August 2020 and 13 November 2020. The January 2020 MMP describes the MRM waste rock classification criteria." NOEF Monthly construction progress reports state "The MRM Operations Team is currently undertaking the emplacement of the overburden at the NOEF. The works include transportation and emplacement of specified materials in the correct locations, as per the design plans, and the construction of batters, wedges and advection barriers as required. The onsite laboratory also completed geochemical analysis of selected samples in order to compare to site specification requirements for material classification." | This condition is only relevant until 13Nov2020. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Emplacement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

| | | | | | | | | | | | | | | | | | |
|----------|----------|--|--|--|--|--|--|--|--|--|--|--|--|-----|-------------------------|--|--|
| 22.a.iv | 22.a.iv | | results and reporting of testing undertaken to confirm alluvial materials placed at the CWNOEF would not generate AMD if exposed to water and were geotechnically suitable for the location they were placed; and | | | | | | | | | | | 4 | Full Compliance | NOEF Construction Progress Report May 2020 dated July 2020. Peer Review of NOEF Monthly Construction Progress Reports: *July 2020 dated September 2020. *September 2020 dated December 2020. *November 2020 dated January 2021. *January 2021 dated August 2021. * February 2021 dated September 2021. *March 2021 dated October 2021. *April 2021 dated November 2021. EMR 2020-2021. Table 3 of EMR 2020-2021 includes OVERBURDEN EMPLACEMENT FACILITY WASTE SAMPLING FREQUENCIES. The number of samples undertaken did not appear to meet the standard quantity listed. However, Section 2.3.2 states "MRM operated in accordance with the January 2020 MMP following its authorisation on 10 August 2020 and 13 November 2020. The January 2020 MMP describes the MRM waste rock classification criteria." NOEF Monthly construction progress reports state "The MRM Operations Team is currently undertaking the emplacement of the overburden at the NOEF. The works include transportation and emplacement of specified materials in the correct locations, as per the design plans, and the construction of batters, wedges and advection barriers as required. The onsite laboratory also completed geochemical analysis of selected samples in order to compare to site specification requirements for material classification." | This condition is only relevant until 13Nov2020. |
| 22.a.v | 22.a.v | | the construction of the foundation will not impede surface water and underdrainage systems ability to convey all water to the sediment trap. | | | | | | | | | | | 4 | Full Compliance | Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020 Peer Review of NOEF Monthly Construction Progress Report September 2020 dated December 2020 EMR 2020- 2021 EMR 2020-2021 section 2.5.1 states "NOEF Central West (CW) stage: Continued construction of the MS-NAF Halo and advection barriers on the top face and stockpiling of materials on CW Alpha and Bravo; continued construction of CW Charlie stage as per OMP EIS methodology." | This condition is only relevant until 13Nov2020. |
| 22.b | 22.b | | concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12, and subject to Condition 18c, ensuring: | | | | | | | | | | | 4 | Full Compliance | Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020. Peer Review of NOEF Monthly Construction Progress Report September 2020 dated December 2020. Ongoing surveying of the surfaces to check for compliance to the design criteria was completed. | This condition is only relevant until 13Nov2020. |
| 22.b.i | 22.b.i | | Detailed designs follow the approved concept designs for CWNOEF and must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives. One of the construction hold points must include verification of PAF waste placement methodology; | | | | | | | | | | | N/A | Not Applicable | CWC ICE Review Letter 20Aug2019 (outside the audit period). Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 states: **"The design is consistent with the latest approvals that include the OMP EIS NOEF concepts." **"MRM shall ensure that all Hold Points identified in the specifications are signed off by GHD progressively as construction occurs." **"Importantly, GHD shall also be consulted in the preparation and endorsement of the following documentation as part of the ongoing management of the dump: -PAF cell and cover trial designs (including instrumentation provisions)". | Condition satisfied before the audit period. This condition is only relevant until 13Nov2020. |
| 22.b.ii | 22.b.ii | | The detailed designs must be reviewed and endorsed by an ICE without limitation on responsibility and provided to the department prior to commencement of construction; and | | | | | | | | | | | N/A | Not Applicable | CWC ICE Review Letter 20Aug2019 (outside the audit period). CWC ICE Review Letter 20Aug2019. Engineering Review of Northern Overburden Emplacement Facility (NOEF). Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 references the new conditions received on the 15Aug2019. Evidence of provision to Department, although before audit period. | Condition satisfied before the audit period. This condition is only relevant until 13Nov2020. |
| 22.b.iii | 22.b.iii | | Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ICE must provide a written response that justifies the existing design or proposes an alternate design to the satisfaction of the department. | | | | | | | | | | | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. The Operator advised that no further reviews by independent experts have been undertaken and "the ICE did not request any changes to the detailed design for the CWNOEF between 10 August 2020 to 13 November 2020." |
| 23 | 23 | | During construction, and subject to Condition 18c, | | | | | | | | | | | | Refer to sub conditions | | |
| 23.a | 23.a | | The Operator must ensure: | | | | | | | | | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020. |
| 23.a.iv | 23.a.iv | | The Central West Charlie Sump is appropriately lined to receive AMD; and | | | | | | | | | | | 4 | Full Compliance | EMR 2019-2020 Section 2.5. EMR states "high density polyethylene (HDPE) lining of Central West Charlie Sump occurred." | This condition is only relevant until 13Nov2020. |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden Emplacement | Facilities | Exploration | Waterways (including river | diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments | |
|---|---|---|--|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|------------------------|------------|-------------|----------------------------|------------|----------------------------|-------|------------------|-------------------------|--|--|
| | 23.b | | The 100 year ARI flood level mitigation system along the northern footprint of the structure is in place prior to the oncoming wet season; | | | | | | | | | | 1 | | | | | | 4 | Full Compliance | EMR 2019-2020 Section 2.5. EMR section 2.5 states the following was undertaken: Flood protection: Construction of flood protection prior to the wet season at CW Charlie north face (100-year ARI); CW Charlie to EPROD (100-year ARI); EPROD to SEPROD (20-year ARI). | This condition is only relevant until 13Nov2020. |
| | 24 | | An Independent Certifying Engineer (ICE) must warrant and accept both the design and construction works, without limitation on responsibility: | | | | | | | | | | | | | | | | | Refer to sub conditions | Covered under condition 48 of the 13Nov2020 Authorisation and included here for context of subconditions. | |
| | 24.c | | any material changes to the amendment must be approved by the ICE and the Department notified as soon as practicable; | | | | | | | | | | 1 | | | | | | N/A | Not Applicable | This condition is only relevant until 13Nov2020. Operator advised no changes to CWNOEF Charlie stage. | |
| | 24.d | | the frequency of the permeability testing be no less than 1 test per 10,000 cubic metres; | | | | | | | | | | 1 | | | | | | N/A | Not Applicable | EMR 2020 - 2021. EMR 2020 - 2021 Table 7 shows that there was no CCL construction in Central West Charlie in the audit period. | This condition is only relevant until 13Nov2020. |
| CONSTRUCTION OF THE CENOEF | | | | | | | | | | | | | | | | | | | | | | |
| | 25 | | The Operator must construct, operate and maintain the CENOEF in accordance with: | | | | | | | | | | | | | | | | | Refer to sub conditions | | |
| | 25.a | | Concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12, and subject to Condition 18d, ensuring: | | | | | | | | | | 1 | | | | | | 4 | Full Compliance | CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 04Apr2019 (before audit period). Central East Alpha/Bravo ITP Sighted 25May20 (CE_Alpha ITP Lot 4F Floor_Finished signoffs dated 23 and 24 June 2020). NOEF Central East CEA 2D Floor ITP signed 29Jul20 and 30Jul20 (CEA 2D ITP - complete). EMR 2020 - 2021. January 2019 MMP. Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report. "Designed in accordance with the Overburden Management Plan Environmental Impact Statement (OMP EIS), Variation of Authorisation 0059 (as amended) and approved Sustainable Development Mining Management Plan (2013 2015) (as amended) (MMP 2013 2015)." (before audit period and refers to superseded MMP). The EMR 2020 - 2021 does not mention compliance with the January 2019 MMP as it focuses on the January 2020 MMP. The January 2019 MMP is the relevant document until 13Nov2020. January 2019 MMP section 4.1 states "The MMP Amendment provides for the continuation of all activities previously approved under the 2013-2015 MMP for an additional 20 months from May 2019 to approximately December 2020, subject to production and waste emplacement rates." Therefore, for the purposes of this condition, the Independent Monitor considers design in accordance with 2013-2015 MMP to demonstrate compliance with January 2019 MMP. The Independent Monitor did not identify any inconsistencies with the January 2019 MMP. | This condition is only relevant until 13Nov2020. The Operator advised "Based on the Design Report and Construction Specification, Inspection and Test Plans (ITPs) are developed in conjunction with the ICE for the various components of the NOEF Construction. As constructed reports are only completed once an entire stage is complete, there are none currently required. In lieu of any as-constructed reports being required at this stage of the Project, ITP CE_Alpha ITP Lot 4F Floor_Finished (dated 25 May 2020) and CEA 2D ITP - complete has been provided to demonstrate verification by the ICE to confirm current construction has been undertaken in accordance with the MMP specifications." |
| | 25.a.i | | Detailed designs follow the approved concept designs CENOEF and must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives. One of the construction hold points must include verification of PAF waste placement methodology; | | | | | | | | | | 1 | | | | | | 4 | Full Compliance | CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 04Apr2019 CE Alpha Design Report version 2, 10Apr2019. ITP_CEA1_C001_PAFHC Week 03 Jan 17, 2021 to Jan 23, 2021 (after this condition is no longer relevant). Construction Hold Points are nominated in Appendix 1 CE Alpha Complete Works Construction Specification in the CE Alpha Design Report. The CE Alpha Design Report doesn't specify a hold point for verification of PAF waste placement methodology. However, the ICE is responsible and accountable for Approval of Construction QA/QC Plan and Methodology Statements. ITP_CEA1_C001_PAFHC Week 03 Jan 17, 2021 to Jan 23, 2021 signed by the ICE (after this condition is no longer relevant) includes sections relating to: * Advection Barrier Placement (previous lift or Zone) (Section 1) * Core Zone Placement (Section 2) * Advection Barrier Placement over the lift (Section 3). There was a hold point for the "Survey compliance for stage batters" related to Advection Barrier Placement (previous lift or Zone). There was no hold point on the ITP provided for "verification of PAF waste placement methodology" however, the ICE provided verification that the construction phase is adequate before non-benign placement was allowed, via the individual Cell ITPs. | This condition is only relevant until 13Nov2020. Detailed designs complete before the audit period. The placement methodology for PAF material is described in Sections '6.1.1.3. CORE ZONE – PAF (HC) AND MS-NAF' and '6.3 Wedge' of the CE Alpha Charlie Complete Works Report V2", detailing acceptable lift heights (designed to control particle size segregation) and advection barrier construction for this Zone. The ICE has endorsed this report in previously provided correspondence. The Operator advised "An example Responsible, Accountable, Consulted and Informed (RACI) table that is included in all detailed design reports is included in the condition 25a.i folder (submitted as Appendix K with the January 2020 MMP). The RACI table describes the ICE as 'Responsible' and 'Accountable' for the release of the construction hold points and therefore verification of adequate construction of construction hold points from the ICE is required prior to PAF waste placement. MRM is to be 'Informed' of the release of construction hold points. The ICE verify that the construction phase is adequate before non-benign placement is allowed, via the individual Cell ITP. Operations cannot commence covering the CCL of a Cell without that Cell's ICE approved ITP, so that is a construction hold point prior to waste placement." The Operator advised "waste placement occurred: MS-NAF in BASE Zone for covering CCL – 15th June 2020 MS-NAF in Wedge (CORE Zone) – 26th June 2020 PAF(HC) in Wedge (CORE Zone) – 26th Nov 2020." |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden Placement | Facilities | Exploration | Waterways (including river | diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|----------------------|------------|-------------|----------------------------|------------|----------------------------|-------|-------------------------|---|---|
| 25.a.iii | 25.a.iii | | The detailed designs must be reviewed and endorsed by an ICE without limitation on responsibility and provided to the department prior to commencement of construction; and | | | | | | | | | | 1 | | | | | 3 | Part Compliance (High) | CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 04Apr2019. CE Alpha Design Report version 2, 10Apr2019. No evidence that the ICE review was provided to DITT was provided and therefore this condition is a part compliance. | This condition is only relevant until 13Nov2020. The Operator advised "Note this condition was removed from the VOA as the NOEF Management Plan (which included a section on the NOEF Design & Construction Guidelines) was submitted and approved as part of the January 2020 MMP. As long as the individual stage designs adhere to the guidelines and principles set out on this document, then individual detailed designs are no longer required to be sent to the Department prior to commencement of construction. Instead the ICE provides their endorsement that the design is suitable for construction." No OFI is prepared as this condition or a related requirement is no longer part of the 13Nov2021 Authorisation. |
| 25.a.iv | 25.a.iv | | Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ICE must provide a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department. | | | | | | | | | | 1 | | | | | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. Operator advised that there was no review of the designs by independent experts requiring additional matters to be addressed. |
| 26 | 26 | | During construction, and subject to Condition 18d(i), | | | | | | | | | | | | | | | | Refer to sub conditions | | |
| 26.a | 26.a | | The Operator must ensure: | | | | | | | | | | | | | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020. |
| | 26.a.i | | PAF(RE) is emplaced in lift heights that minimises particle size segregation and creation of chimney structures, but must not exceed 2m; | | | | | | | | | | 1 | | | | | N/A | Not Applicable | ITP_CEA_R001_PAFRE_P1 - Week 08 - 21 Feb 2021 – 27 Feb 2021 signed by ICE 29Mar2021 (after audit period for this condition). ITP_CEA_R001_PAFRE_P1 - Week 08 - 21 Feb 2021 – 27 Feb 2021 signed by ICE 29Mar2021 "Hauling and Dumping of a 2m thick PAF(RE) layer" has the comment "PAFRE placement area on-going to - Witnessed" (after audit period for this condition). The Operator advised that the first PAF(RE) placement in the CE Stage didn't occur until 1Jan21 so this condition is N/A. | This condition is only relevant until 13Nov2020. The Operator advised that the first PAF(RE) placement in the CE Stage didn't occur until 1Jan21 so this condition is N/A. |
| | 26.a.ii | | Advection barriers of appropriate thickness, moisture conditioned (if required), is emplaced at suitable intervals that disrupts formation of oxygen convection cycles. If the PAF(RE) cells are not finalised, a 1m thick compacted advection barrier must be placed prior to every wet season; | | | | | | | | | | 1 | | | | | N/A | Not Applicable | ITP_CEA_R001_PAFRE_P1 - Week 08 - 21 Feb 2021 – 27 Feb 2021 signed by ICE 29Mar2021. (after audit period for this condition) ITP_CEA_R001_PAFRE_P1 - Week 08 - 21 Feb 2021 – 27 Feb 2021 signed by ICE 29Mar2021 "Confirm that the hauling, dumping and spreading of advection barrier has been completed" has the comment "CEA Alluvial spread for AF(RE) cell ongoing - witnessed. " (after audit period for this condition). The Operator advised that the first PAF(RE) placement in the CE Stage didn't occur until 1Jan21 so this condition is N/A. | This condition is only relevant until 13Nov2020. The Operator advised that the first PAF(RE) placement in the CE Stage didn't occur until 1Jan21 so this condition is N/A. |
| | 26.a.iii | | The 100 year ARI and 20 year ARI flood level mitigation systems along the eastern footprint of the structure is in place prior to the oncoming wet season. | | | | | | | | | | 1 | | | | | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. The condition ended before the wet season so it is N/A. |
| | 27 | | An independent Certifying Engineer (ICE) must warrant and accept both the design and construction works, without limitation on responsibility; | | | | | | | | | | | | | | | | Refer to sub conditions | | Included for context of subconditions. Parts of this condition are included in the 13Nov2020 Authorisation condition 48. |
| | 27.a | | During all phases of construction the ICE or approved delegate must be present at the CENOEF site to oversee and certify and be accountable that all materials and material testing undertaken, QA/QC procedures and construction methods used satisfy the design intent and meet all the design specifications and approve re-commencement of construction at defined hold points. Where tests conducted demonstrate non-compliance to the acceptance criteria, evidence of corrective action taken (such as re-working of materials and re-testing) must be provided in the final report (as per clause 27(g)); | | | | | | | | | | 1 | | | | | 4 | Full Compliance | CEA 3D ITP signed off by the ICE- Completed July 2020. MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020 Appendix B includes numerous Emerson tests from May to July 2020 and Table 1-1: Summary of GHD site presence as Independent QA Engineers that states that attendance was April 2020 - current (assumed 31 July) 4 days per week on site inspecting daily construction activities. For Central East Alpha Lot 3E it also includes a non conformance report related to CCL layer placed thicker than design tolerance of 500 (-0/+200m). The underlying cause of the non-conformance was listed as "Subgrade layer purposely left low to allow for GPS fluctuations on both machine and survey creating a thicker layer". A risk assessment was undertaken ("the maximum constructed layer thickness would be at worst 450mm") and deemed no reworking was required because: <ul style="list-style-type: none"> • As the excess thickness is on the batter, pooling won't occur and therefore won't be an issue. • The CCL has been constructed in 2 layers, and therefore there are 2 lines of defence in the unlikely event that there are issues with one of the layers. • Even in the improbable scenario of compaction slightly outside the 98% requirement, testing has shown that the CCL would likely still achieve well in excess of the required 1x10⁻⁹ m/s maximum permeability." The corrective action was a risk assessment was undertaken that identified that no reworking was required. | This condition is only relevant until 13Nov2020. |

15 Aug 2019
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Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Placement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

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|--------------------------|------|----------------------------|--|--|--|--|--|--|--|--|--|---|--|--|--|--|---|-----------------|---|--|---|---------------------------------------|
| 27.d | 27.d | | including allowances for survey accuracy/tolerances, the post construction CCL thickness is not less than 500mm; | | | | | | | | | 1 | | | | | 4 | Full Compliance | CEA 3D ITP - Complete July 2020 - Central East Alpha Lot 3E. MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020. MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020 includes in section 2.3.1.1 "The CCL was generally constructed in 2 x 300 mm compacted layers (the lower layer incorporating some sub-grade material into the CCL) aiming at an overall target thickness of 600 mm. The Specification tolerance allows for the CCL thickness to be a minimum 500 mm, -0 / + 200 mm, i.e. 500 – 700 mm." For Central East Alpha Lot 3E it also includes a non conformance report related to CCL layer placed thicker than design tolerance of 500 (-0/+200m). The underlying cause of the non-conformance was listed as "Subgrade layer purposely left low to allow for GPS fluctuations on both machine and survey creating a thicker layer". A risk assessment was undertaken ("the maximum constructed layer thickness would be at worst 450mm") and deemed no reworking was required because: <ul style="list-style-type: none"> As the excess thickness is on the batter, pooling won't occur and therefore won't be an issue. The CCL has been constructed in 2 layers, and therefore there are 2 lines of defence in the unlikely event that there are issues with one of the layers. Even in the improbable scenario of compaction slightly outside the 98% requirement, testing has shown that the CCL would likely still achieve well in excess of the required 1x10-9 m/s maximum permeability." | ITP includes ICE signoff for 500mm thickness for CCL. The ITP successfully identified monitoring of construction within the tolerance range for the CCL. | | |
| 27.e | 27.e | | the frequency of the CCL permeability testing be no less than 1 test per 10,000 cubic metres; | | | | | | | | | 1 | | | | | 4 | Full Compliance | CE CCL Testing Summary 9Oct20 CEA 3D ITP - Complete July 2020 CE CCL Testing Summary 9Oct20 showed that 10 tests were required and 12 were undertaken for Central East Basal CCL. CEA 3D ITP - Complete July 2020 includes 1 test per 10,000m3. | This condition is only relevant until 13Nov2020. | | |
| Construction of the NOEF | | | | | | | | | | | | | | | | | | | | | | |
| | | | Construction of the NOEF has occurred in stages. Conditions placed on construction of the various stages has been subject to change with the issuing of variations of Authorisation incorporating conditions appropriate for that point in time. | | | | | | | | | | | | | | | | | | | Commentary only |
| | | 52 - previously 18 changed | From the date of authorisation of the Overburden Management Project, the Operator is approved to construct, operate and maintain the following stages for permanent placement of Waste Rock in the NOEF: | | | | | | | | | | | | | | | 4 | Full Compliance | EMR 2020-2021. DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) DITT Site Inspection Report dated 3Feb2021 stated "Construction of the NOEF, comprising waste placement continued in the Central West NOEF stage during the inspection (Plate 16). Adam Hatfield described the approved PAF waste placement techniques at NOEF that comprised placement of PAF (RE) in 2 m rises, while all other material was placed in 7 m rises. All rises were separated by a 100 mm advection barrier. This placement method is consistent with the Authorisation." and "Non-benign waste stockpiles were also observed on the Central East (CE) NOEF stage. These stockpiles were yet to be profiled as part of the final waste placement in the CE NOEF stage." and "The drone footage additionally indicated the CE stage, overall, is being heavily worked for future waste rock placement, with basal wedge layer construction in progress to direct runoff towards the Eastern Perimeter Runoff Dam (EPROD)". | Operator advised no waste has been placed outside of the approved areas (refer condition 52 and 55). The Independent Monitor did not find any other areas of waste placement in the EMR 2020 - 2021. Refer to Table 6: Waste Dumping During the Reporting Period in EMR 2020-2021. | |
| | | 52.a | West A, B, C and D; | | | | | | | | | | | | | | | - | | | | Compliance scored under condition 52. |
| | | 52.b | CW (alpha, bravo and charlie); | | | | | | | | | | | | | | | - | | | | Compliance scored under condition 52. |
| | | 52.c | CE (alpha and bravo); | | | | | | | | | | | | | | | - | | | | Compliance scored under condition 52. |
| | | 52.d | SE; | | | | | | | | | | | | | | | - | | | | Compliance scored under condition 52. |
| | | 52.e | NW; | | | | | | | | | | | | | | | - | | | | Compliance scored under condition 52. |
| | | 52.f | NE. | | | | | | | | | | | | | | | - | | | | Compliance scored under condition 52. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
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Governance/General
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Tailings Storage Facility
Water Management and
Storages
Overburden Placement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

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Compliance
Level

Evidence

Comments

| | | | | | | | | | | | | | | | | | | |
|--|--|------|---|--|--|--|--|--|--|--|--|--|--|--|-----|-------------------------|--|---|
| | | 53 | The Operator must develop the NOEF Stages defined in Condition 52 in accordance with Concept designs presented in the approved MMP. | | | | | | | | | | | | 4 | Full Compliance | <p>Letter from GHD to Operator subject Engineering Review of NOEF Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report CE ICE Report dated 4Apr2019 (before audit period). Central East Alpha/Bravo ITP Sighted 25May20 (CE_Alpha ITP Lot 4F Floor_Finished signoffs dated 23 and 24 June 2020). NOEF Central East CEA 2D Floor ITP signed 29Jul20 and 30Jul20 (CEA 2D ITP - complete). Peer Review of NOEF Monthly Construction Progress Report July 2020. MRM Inspection and Test Plan (ITP) Week 14 Apr. 11 – Apr. 17, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNC Week 15). MRM Inspection and Test Plan (ITP) Week 16 Apr. 16 – Apr. 24, 2021 with ICE signoff 24Jun21 (ITP_CEB1_B001_MSNC Week 16). EMR 2020-2021. Peer Review of NOEF Monthly Construction Progress Report September 2020.</p> <p>Operator advised that if consistent with OMP it will be consistent with MMP concept design as they the same. Section 2.5.2 of the EMR states "The CE stage was constructed as per the OMP EIS methodology and consistent with the approved MMP.</p> <p>Peer Review of NOEF Monthly Construction Progress Report July 2020 in section 6 states "Based on the daily site inspections and observations, investigations and geotechnical testing results, it is the opinion of GHD that the Central East expansion is being constructed in accordance with the specifications and design intent."</p> <p>Peer Review of NOEF Monthly Construction Progress Report September 2020 in section 5.2 states "All works completed in this reporting period are within the design intent."</p> | <p>Letter from GHD to Operator subject Engineering Review of NOEF Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report dated 4Apr2019 is from before the audit period but states "Designed in accordance with the Overburden Management Plan Environmental Impact Statement (OMP EIS), Variation of Authorisation 0059 (as amended) and approved Sustainable Development Mining Management Plan (2013 2015) (as amended) (MMP 2013 2015)."</p> <p>The Operator advised "Based on the Design Report and Construction Specification, Inspection and Test Plans (ITPs) are developed in conjunction with the ICE for the various components of the NOEF Construction.</p> <p>For the Foundation Development (i.e. Basal CCL construction), the area is broken up into a number of "Cells", and an ITP is completed for each Cell (examples completed during audit period are Lot 4F Floor and 2D floor - corresponding evidence of ICE sign is in CE_Alpha ITP Lot 4F Floor_Finished and CEA 2D ITP - complete).</p> <p>For the operational works (ie construction of the waste facility above the basal CCL), ITPs for the various components of the NOEF are developed, and relevant areas' ITPs updated and signed off on a weekly basis" (example "MRM Inspection and Test Plans (ITPs) (ITP_CEB1_B001_MSNC Week 15 and ITP_CEB1_B001_MSNC Week 16).</p> <p>Monthly construction reports produced by the ICE detailed construction works completed, non-conformances and key issues identified."</p> |
| | | 54 | During construction of the NOEF, the Operator must ensure: | | | | | | | | | | | | | Refer to sub conditions | | |
| | | 54.a | engagement of the ICE consistent with Condition 48; | | | | | | | | | | | | 4 | Full Compliance | Peer Review of NOEF Monthly Construction Progress Report December 2020 | Refer to condition 48 for further detail of compliance. |
| | | 54.b | waste rock management requirements complies with Condition 51. | | | | | | | | | | | | 4 | Full Compliance | Peer Review of NOEF Monthly Construction Progress Report December 2020 | Refer to condition 51 for further details of compliance. |
| Remaining Waste Rock Management Facilities | | | | | | | | | | | | | | | | | | |
| | | 55 | From the date of authorisation of the Overburden Management Project, temporary placement of non-benign waste is authorised for the following: | | | | | | | | | | | | | Refer to sub conditions | | Refer to table in EMR 2020-2021 |
| | | 55.a | EOEF (except for PAF(RE)); | | | | | | | | | | | | N/A | Not Applicable | | Future item. Scheduled for development 2022/2023 |
| | | 55.b | stockpiles on NOEF, SOEF and WOEF; | | | | | | | | | | | | 4 | Full Compliance | EMR 2020-2021. EMR 2020-2021 table 6 shows no waste dumping at SOEF or WOEF. There is dumping on the NOEF stockpile. EMR 2020-2021. | Advised by the Operator that SOEF and WOEF are no longer active and there is no intention to reactivate. SOEF and WOEF are located within the mine levee wall. SOEF has a dedicated sump. |
| | | 55.c | ROM Pad; | | | | | | | | | | | | 4 | Full Compliance | EMR 2020-2021. EMR 2020-2021 section 2.5.3 states "The WOEF forms the base of the ROM pad and is, therefore, in constant use. Minor amounts of waste may be used to adjust ramps and drainage as stockpile sizes and shapes evolve over time. The WOEF will continue to be used as the ROM stockpile for crusher feed materials." Ore is considered non-benign waste. | |
| | | 55.d | any other location approved by Department in writing. | | | | | | | | | | | | N/A | Not Applicable | EMR 2020-2021. EMR 2020-2021 section 2.5.3 states "The WOEF forms the base of the ROM pad and is, therefore, in constant use. Minor amounts of waste may be used to adjust ramps and drainage as stockpile sizes and shapes evolve over time. The WOEF will continue to be used as the ROM stockpile for crusher feed materials." Ore is considered non-benign waste. | Operator advised the Independent Monitor that there are no other areas approved by the Department in writing. The Independent Monitor did not find any other areas of waste placement in the EMR 2020 - 2021. |
| | | 56 | The Operator must ensure that non-benign wastes temporarily placed outside of NOEF have: | | | | | | | | | | | | | Refer to sub conditions | | |
| | | 56.a | suitable water management structure (e.g. drains and sumps) are in place to contain and manage poor quality drainage in accordance with the approved MMP; | | | | | | | | | | | | 4 | Full Compliance | EMR 2020-2021. 2020-2021 Site Water Balance Forecast Report ROM pad located above the WOEF so water reports to the open pit or nearby sumps. Independent Monitor confirmed EMR 2020-2021 section 2.5.3 states "The WOEF forms the base of the ROM pad and is, therefore, in constant use. Minor amounts of waste may be used to adjust ramps and drainage as stockpile sizes and shapes evolve over time. The WOEF will continue to be used as the ROM stockpile for crusher feed materials." | ROM pad only during the audit period. The Operator advised "2020-2021 Site Water Balance Forecast Report provided in condition folder. The report describes the water management system at the McArthur River Mine and presents a site-wide water balance for the four-year period between 2020 and 2024. The forecast water balance takes into account recent changes to the mine water management system and current water inventories. All ROM/Mill area runoff end at Van-Duncans Dam (OP VDD) or Petes Pond (OP PP), Mill CRP (Mill Concentrator runoff pond), Mill APP (Anti Pollution Pond), Mill ORS (Old ROM Sump) or Mill OSD (Mill Old Stores Dam), where it then forms part of MRM's water management system (refer to page 24 of the Site Water Balance Report for further details)." |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

| Condition/Requirement | | | Governance/General | Non-mineral Waste Management | Open Pit/Underground Workings | Tailings Storage Facility | Water Management and Storages | Overburden Placement Facilities | Exploration | Waterways (including river diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|-------------------------------------|--------------------|---|--------------------|------------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------------|-------------|---------------------------------------|----------------------------|-------|------------------|--|--|
| | 56.b | installed water diversion structures that allows segregation of mine-affected drainage from non-mine affected drainage; | | | | | 1 | 1 | | | | 4 | Full Compliance | EMR 2020-2021. 2020-2021 Site Water Balance Forecast Report. Water Management Plan ROM pad all considered mine affected water. The Water Management Plan discusses structures that collect water from the WOEF ROM Pad. | ROM pad only during the audit period. Site configuration and water management figures for ROM pad are Figure 2.1. |
| | 56.c | monitoring and management measures, in accordance with the AMP, are implemented to ensure environmental objectives defined in the approved MMP are satisfied; | | | | | | 1 | | | | 4 | Full Compliance | Operator advised that water is captured in the water management system and either treated before discharge offsite so included in monitoring program in AMP. Included in artificial surface water program. | |
| | 56.d | non-benign wastes are removed and managed at cessation of mining in accordance with the approved MMP; | | | | | | 1 | | | | N/A | Not Applicable | | Future item as cessation of mining has not occurred. |
| | 56.e | in the event of unplanned closure, non-benign wastes are removed and managed in accordance with the approved MMP; | | | | | | 1 | | | | N/A | Not Applicable | | Future item as there have been no unplanned closures. |
| | 56.f | oversight provided by ICE as per Condition 48. | | | | | | 1 | | | | N/A | Not Applicable | | Condition 48 is referring construction and not applicable to the ROM pad. |
| Ore Processing and Milling | | | | | | | | | | | | | | | |
| | 57 - previously 39 | Surface water management infrastructure associated with the lead filtration facility at the Mine must be suitably designed and constructed to contain a 100 year ARI rainfall event. | 1 | | | | 1 | | | | | N/A | Not Applicable | | Future item. January 2020 MMP mentioned as future work. Operator advised that this has not proceeded at this stage. |
| | 58 | From the date of authorisation of the Overburden Management Project, the Operator is authorised to expand the ore processing and associated milling and storage facilities in accordance with concepts and management systems detailed in the approved MMP including: | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.a | ensuring the structures to be developed are suitably designed and constructed to allow management of poor quality drainage in accordance with the Water Management Plan that is generated from the construction and future operation of the structures; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.a.i | construction and development of Gypsum Plant; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.a.ii | construction and development of Caustic Facility; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.a.iii | construction and development of Reagent Mixing Facility; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.a.iv | construction and development of Copper Mud Facility; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.a.v | construction and development of Lead Concentrate Storage Facility; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.a.vi | expansion of the concentrate storage shed and use of external hardstand area; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| | 58.b | Wastes generated from the operation of the Gypsum Plant must be managed in accordance with Condition 63. | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Ore processing and associated milling and storage facilities are not proceeding at this stage. |
| Water Management and Storage | | | | | | | | | | | | | | | |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Placement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

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|----------|----------|----------------------------|---|---|--|--|---|--|--|--|--|--|--|--|--|---|-------------------------|---|---|
| 36 | 36 | | Dewatering activities as part of pit development and borefield development for beneficial use must be metered to allow determination of parameters for assessment of extraction volumes and aquifer sustainability | | | | 1 | | | | | | | | | 3 | Part Compliance (High) | <p>Monthly groundwater abstraction spreadsheet May 2020 - April 2021. WMS Report - 1Aug2020. WMS Report - 01Nov2020. WMS Report - 20Dec2020 (from after this condition was obsolete). WMS Report- 7Apr2021 (from after this condition was obsolete). PI data for seepage trench and fed bore.</p> <p>Operator advised bores are metered. MUDS are a series of bores that site around the pit. Aquifer sustainability is irrelevant because the groundwater ends up in the pit.</p> <p>Dewatering activities as part of pit development and borefield development are captured in daily WMS reports and monthly groundwater abstraction report (examples provided in condition folder). Groundwater metered pumping data is also provided.</p> <p>The Operator advised "Abstraction assessments are currently being completed as part of MRM's water extraction licence applications."</p> <p>Monthly groundwater abstraction spreadsheet May 2020 - April 2021 includes bore fields, interception trench and MUDS for the audit period.</p> <p>Water Management Plan 2020 Table 9: Groundwater Borefield Description showed that Wiki borefield was not metered.</p> <p>The Operator advised "At the time of writing the January 2020 WMP it was identified that the TSF Wiki Bores required flow meters to be installed. Flow meters were installed during 2020, which is reflected in</p> | This condition is only relevant until 13Nov2020. No OFI has been provided as the Water Management Plan March 2021 shows that the borefields are now metered and this condition does not remain in the 13Nov2020 Authorisation. |
| 37 | 37 | | Water storage structures into which the Operator places or directs AMD must be designed, constructed and managed by the Operator to minimise to as low as reasonably practicable contaminants entering the Receiving Environment. In this regard: | 1 | | | | | | | | | | | | | Refer to sub conditions | This condition is only relevant until 13Nov2020. This condition is identical in 13Nov2020 Authorisation but is included here for one subcondition that is no longer in the 13Nov2020 Authorisation. | |
| 37.a | 37.a | | the water storage structures into which the Operator is authorised to place or direct AMD whilst they continue to meet the requirements of this condition are as follows: | | | | | | | | | | | | | | Refer to sub conditions | This condition is only relevant until 13Nov2020. This condition is identical in 13Nov2020 Authorisation but is included here for one subcondition that is no longer in the 13Nov2020 Authorisation. | |
| 37.a.ii | 37.a.ii | | Southern Perimeter Sediment Runoff Dam (SPD); | | | | | | | | | | | | | | N/A | Not Applicable | Combined into SPROD in 2018 based on comment in WMP 2020 Table 8. |
| 38 | 38 | | The Operator must not transfer water to or discharge water from any water storage structure until water quality analysis has been received and interpreted by the Operator and results confirm the water is suitable for the destination, having regard to the requirements of this document and the MMP and any other relevant restrictions on transfer or discharge of water within or from the Mine. In this regard: | 1 | | | | | | | | | | | | | Refer to sub conditions | This condition is covered as condition 65 in the 13Nov2020 Authorisation and is included in the audit for context related to a sub condition. | |
| 38.d | 38.d | | The Operator must ensure: | | | | | | | | | | | | | | Refer to sub conditions | This condition is covered as condition 69 in the 13Nov2020 Authorisation and is included in the audit for context related to a sub condition. | |
| 38.d.vii | 38.d.vii | | total loads of analytes (including lead and zinc) from all controlled discharge activities entering McArthur River must be measured at location SW06. | | | | | | | | | | | | | | N/A | Not Applicable | This condition is only relevant until 13Nov2020. Note 13 Nov2020 condition 69 allows for an alternative site to SW06, if agreed by the Department (therefore this condition is retained in this audit). |
| | | 59 - previously 35 changed | Until the AMP (including Environmental Management Plans and sub-plans) is approved by the Department in writing, the Operator must prepare, review and include the following for each MMP and where appropriate each MMP amendment, a Water Management Plan which includes: | | | | | | | | | | | | | | N/A | Not Applicable | Future item. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |
| | | 59.a - previously 35.a | modelling of surface water at and around the Mine; | | | | | | | | | | | | | | N/A | Not Applicable | Future item. AMP is not approved. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |
| | | 59.b - previously 35.b | a whole of Mine water balance which takes account of the modelling of surface water; | | | | | | | | | | | | | | N/A | Not Applicable | Future item. AMP is not approved. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |
| | | 59.c - previously 35.c | calibration of the modelling of surface water to confirm its accuracy; | | | | | | | | | | | | | | N/A | Not Applicable | Future item. AMP is not approved. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |
| | | 59.d - previously 35.d | a written plan detailing how water at the Mine will be managed for the forthcoming wet season; | | | | | | | | | | | | | | N/A | Not Applicable | Future item. AMP is not approved. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |
| | | 59.e - previously 35.e | a plan of actions which will be undertaken to reduce the risk of any releases from AMD storage structures; | | | | | | | | | | | | | | N/A | Not Applicable | Future item. AMP is not approved. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

Governance/General
 Non-mineral Waste Management
 Open Pit/Underground Workings
 Tailings Storage Facility
 Water Management and Storages
 Overburden Placement Facilities
 Exploration Waterways (including river diversion)
 Bing Bong Loading Facility

Score

Compliance Level

Evidence

Comments

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|------------------------|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|----------------|--|--|
| 59.f - previously 35.f | a plan of actions, including engineers' reporting schedules, which will be undertaken to ensure the structural integrity of all AMD storage structures; | | | | | | | | | | | | | | | | | | N/A | Not Applicable | | Future item. AMP is not approved. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |
| 59.g - previously 35.g | a plan of actions which will be undertaken to ensure seepage from AMD storage structures is minimised including, where required, timelines for repairing damaged or installing new seepage management infrastructure. | | | | | | | | | | | | | | | | | | | | | Future item. AMP is not approved. Operator advised there have been no MMP amendments in the audit period. 31 January 2020 MMP was the last MMP. |
| 60 | From the date of authorisation of the Overburden Management Project, water-related activities involving interfering with waterway and water extraction must be undertaken in accordance with the Water Act 1992, and where required, appropriate licenses/approvals are obtained from the responsible agency prior to commencement of the works. The Operator must ensure: | | | | | | | | | | | | | | | | | | | | | The Operator advised that they are in the process of obtaining the water extraction licenses and that there is correspondence regarding exemptions if water extractions were approved as part of an MMP process. The Operator advised that there was no interference with waterways in the audit period in addition to their exemption. 31 January 2020 MMP was prior to the water act amendments and there is a transitional period of exemptions. |
| 60.a | activities involving disturbance must not commence until required studies and/or trials to inform future design, construction and/or operation, as detailed in the approved MMP, are completed; | | | | | | | | | | | | | | | | | | | | | Barney Creek low flow gauge (Section 5.1.7.3 in MMP) has not been constructed. |
| 60.b | works are conducted in accordance with a valid AAPA certificate; | 1 | | | | | | | | | | | | | | | | | | | | Operator advised no interference with waterways in the audit period. |
| 60.c | detailed designs, where nominated in the approved MMP, are developed and implemented in consultation with required experts, including but not limited to ecology, engineering and any other experts as appropriate; | | | | | | | | | | | | | | | | | | | | | Operator advised no interference with waterways in the audit period. The Operator advised that there has been no construction of the Barney Creek low flow gauge (Section 5.1.7.3 in MMP) and it has not progressed. |
| 60.d | regular inspections and maintenance are undertaken to ensure design objectives continue to be satisfied. | | | | | | | | | | | | | | | | | | | | | Operator advised no interference with waterways in the audit period. |
| 61 | The Operator must complete translocation of the Purple-crown Fairy Wren in accordance with the approved MMP, prior to commencement of works on the Old McArthur River Channel plug. | 1 | | | | | | | | | | | | | | | | | | | | McArthur River Purple-crown Fairy Wren (<i>Malurus coronatus macgillivrayi</i>) Translocation Program Progress Report September - November 2020. McArthur River Purple-crown Fairy Wren (<i>Malurus coronatus macgillivrayi</i>) Translocation Program Progress Report September - November 2020. The Operator advised that work on the Old McArthur River Channel plug had not commenced. The Operator advised "The report details the actions taken in accordance with the approved Translocation Plan, including pre-translocation assessment, capture and movement of the birds and post-translocation monitoring, conducted during September and November 2020. The translocation of the birds was conducted September 2020." |
| 62 - previously 69 | The Operator must erect and maintain warning signage that: | | | | | | | | | | | | | | | | | | | | | Refer to sub conditions |
| 62.a | is permanent and weatherproof; | | | | | | | | | | | | | | | | | | | | | Warning Signage Inspection 2020 (memo dated 11Nov2020). Warning Signage Inspection 2020 photographs show the warning signage appears sturdy and permanent in nature. |
| 62.b | contains specific wording agreed to by the Chief Health Officer of the Northern Territory; | | | | | | | | | | | | | | | | | | | | | Letter dated 04Feb2015 to Chief Health Officer from Operator. Letter dated 04Feb2015 to Chief Health Officer from Operator advising of the agreed wording to be used on signage. |
| 62.c | is located: | | | | | | | | | | | | | | | | | | | | | Refer to sub conditions |
| 62.c.i | at appropriate distances and frequency along the waterway; | | | | | | | | | | | | | | | | | | | | | Warning Signage Inspection 2020 (memo dated 11Nov2020). Signage appears to be installed at appropriate distances and frequency based on the Warning Signage Inspection 2020. |
| 62.c.ii | as a minimum at all access points, including but not limited to crossings, vehicle tracks and walking tracks. | | | | | | | | | | | | | | | | | | | | | Warning Signage Inspection 2020 (memo dated 11Nov2020). Signage appears to be located at all access points, including but not limited to crossings, vehicle tracks and walking tracks based on aerial photography and the warning signage inspection 2020. |
| 62.c.iii | along the length of: | | | | | | | | | | | | | | | | | | | | | Refer to sub conditions |
| 62.c.iii.a | Barney Creek downstream to its junction with the McArthur River; | | | | | | | | | | | | | | | | | | | | | Warning Signage Inspection 2020 (memo dated 11Nov2020). Operator Warning Signage photos (memo dated 11Nov2020) viewed confirming no access signage is in place in all locations. Location 40 appears to be at the junction. |
| 62.c.iii.b | Barney Creek upstream to a point a short distance upstream of where the Carpentaria Highway crosses Barney Creek; | | | | | | | | | | | | | | | | | | | | | Warning Signage Inspection 2020 (memo dated 11Nov2020). Operator Warning Signage photos (memo dated 11Nov2020) viewed confirming no access signage is in place in all locations. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Placement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

| | | | | | | | | | | | | | | | | | | | |
|--|--|--------------------|--|--|--|--|--|--|--|--|--|--|---|---|-----------------|--|--|--|--|
| | | 62.c.iii.c | Surprise Creek to approximately the location of SW29; | | | | | | | | | | 1 | 4 | Full Compliance | Warning Signage Inspection 2020 (memo dated 11Nov2020). Operator Warning Signage photos (memo dated 11Nov2020) viewed confirming no access signage is in place in all locations. Location 44 is the approximate location of SW29. | | | |
| | | 62.c.iii.d | Bing Bong shipping channel and in the immediate area surrounding the shipping channel and the swing basin. | | | | | | | | | | 1 | 1 | 3 | Part Compliance (High) | Warning Signage Inspection 2020 (memo dated 11Nov2020). Warning Signage Inspection 2020 showed signage is located at each land entry point to the BBLF, which surround the water access. However, there was no evidence of signage along the length of the shipping channel and in the immediate area surrounding the shipping channel and swing basin. | OBS: Consider signage on the Nathan River Resources loading facility boundary fence line as operational activities recommenced in 2021. OFI: Correspond with DITT about the intent of this condition and specifically the impracticality of locating signage along the length of the shipping channel and in the immediate area surrounding the shipping channel and swing basin. | |
| | | 63 | Wastes generated from operation of the Water Treatment Plant and Gypsum Plant must be disposed: | | | | | | | | | | | | | Refer to sub conditions | No action but included for context of the subconditions. | | |
| | | 63.a | in accordance with concepts and management systems detailed in the approved MMP, ensuring: | | | | | | | | | | | | | N/A | Not Applicable | Future item. Water treatment plant has not been operational during the audit period and the gypsum plant is not constructed. | |
| | | 63.a.i | trials for the permanent disposal of Gypsum Plant and Water Treatment Plant wastes must be undertaken to inform final material placement; | | | | | | | | | | | | | N/A | Not Applicable | Future item. Water treatment plant has not been operational during the audit period and the gypsum plant is not constructed. | |
| | | 63.a.ii | the ITRB or an approved qualified and experienced independent third party endorse the waste disposal strategy, if the wastes are to be placed in the TSF; or | | | | | | | | | | | | | N/A | Not Applicable | Future item. Water treatment plant has not been operational during the audit period and the gypsum plant is not constructed. | |
| | | 63.a.iii | the ICE or an approved qualified and experienced independent third party endorse the waste disposal strategy, if the wastes are to be placed in the NOEF. | | | | | | | | | | | | | N/A | Not Applicable | Future item. Water treatment plant has not been operational during the audit period and the gypsum plant is not constructed. | |
| | | 64 - previously 37 | Water storage structures into which the Operator places or directs AMD must be designed, constructed and managed by the Operator to minimise to as low as reasonably practicable contaminants entering the Receiving Environment. In this regard the water storage structures into which the Operator is authorised to place or direct AMD whilst they continue to meet the requirements of this Condition are as follows: | | | | | | | | | | | | | 3 | Part Compliance (High) | Water management plan 31Jan2020 (including TARPS in Appendix B) Water storage infrastructure master list dated 30/04/2021 Apr20-Apr21_GroundWater Data EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 Geotechnical Inspection Procedure Version 3, Date 14/4/2020 TSF Cell 1 decant pond and TSF Cell 2 decant pond are listed in the Water storage infrastructure master list dated 30/04/2021 with AMD but are not listed in this condition. The Independent Monitor considers AMD in the TSF is approved via other conditions. Open pit footwall quarry sump and open pit K stage sump are listed in the water storage infrastructure master list dated 30/04/2021 with AMD but are not listed in this condition Inspections - BB Water Management - CW Charlie Sump inspection - EPROD Inspection - Lake Archer Inspection - MIA Sump Inspection - Mill CRP Sump_Inspection - Pete's Pond Inspection - Pond 2 Inspection - SEPROD Inspection - WPROD Inspection The open pit footwall quarry sump and open pit K stage sump are listed in the water storage infrastructure master list dated 30/04/2021 with AMD but are not listed in this condition | The Operator advised that all structures report to the water management system so they do not discharge to the receiving environment and there is numerous groundwater monitoring at various locations around structures. The Operator advised that no water storage structures were constructed during the audit period. The Operator advised "No AMD water was placed or transferred into structures not listed in Condition 64 during the reporting period. AMD water is only stored or transferred into MRM's AMD approved storage structures (dams, sumps etc.)." OFI: Update the water storage infrastructure master list related to the open pit footwall quarry sump and open pit K stage sump if they do not contain AMD or request DITT amend the condition to include these additional storages. |
| | | 64.a | Southern Perimeter Runoff Dam (SPROD) – includes the footprint previously attributed to the Southern Perimeter Sediment Runoff Dam; | | | | | | | | | | | | | 4 | Full Compliance | Included in the water storage infrastructure master list dated 30/04/2021 with seepage management of CCL + HDPE, groundwater management of VWP, geotechnical inspection monthly (dry) or fortnightly (wet) and visual inspections bi-weekly (wet) or monthly (dry). EMR 2020-2021 table 21. | |
| | | 64.b | South East Perimeter Runoff Dam (SEPROD); | | | | | | | | | | | | | 4 | Full Compliance | Included in the water storage infrastructure master list dated 30/04/2021 with seepage management of CCL, groundwater management of VWP + underdrain and geotechnical inspection monthly (dry) or fortnightly (wet). EMR 2020-2021 table 21. | |
| | | 64.c | Western Perimeter Runoff Dam (WPROD); | | | | | | | | | | | | | 4 | Full Compliance | Included in the water storage infrastructure master list dated 30/04/2021 with seepage management of CCL + HDPE, groundwater management of VWP + underdrain, geotechnical inspection monthly (dry) or fortnightly (wet) and visual inspections bi-weekly (wet) or monthly (dry). EMR 2020-2021 table 21 | |
| | | 64.d | Eastern Perimeter Runoff Dam (EPROD); | | | | | | | | | | | | | 4 | Full Compliance | Included in the water storage infrastructure master list dated 30/04/2021 with seepage management of CCL + HDPE, groundwater management of VWP + underdrain and geotechnical inspection monthly (dry) or fortnightly (wet). EMR 2020-2021 table 21 | |
| | | 64.e | Central West A Sump (CWAS); | | | | | | | | | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections and the EMR 2020-2021 table 21. | Water storage infrastructure master list dated 30/04/2021 stated "to be decommissioned dry season 2021." |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Emplacement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste Management | Open Pit/Underground Workings | Tailings Storage Facility | Water Management and Storages | Overburden Emplacement Facilities | Exploration | Waterways (including river diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|--------------------|---------------------------------|----------------------------------|---------------------------|----------------------------------|--------------------------------------|-------------|--|----------------------------|-------|---------------------------|--|--|
| | | 64.f | Central West C Sump (CWCS); | | | | | 1 | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections and the EMR 2020-2021 table 21. | |
| | | 64.g | Anti-Pollution Pond (APP); | | | | | 1 | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. EMR 2020-2021 table 23. | |
| | | 64.h | Concentrator Runoff Pond (CRP); | | | | | 1 | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. EMR 2020-2021 table 23. | |
| | | 64.i | Van Duncan's Dam (VDD); | | | | | 1 | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. EMR 2020-2021 table 22. | |
| | | 64.j | Pete's Pond (PP); | | | | | 1 | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. EMR 2020-2021 table 22. | |
| | | 64.k | Lake Archer (LA); | | | | | 1 | | | | | 4 | Full Compliance | DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) DITT Site Inspection Report dated 3Feb2021 "Key activities approved under the Authorisation issued 13 November 2020 and observed during the inspection included: * lining of Lake Archer" Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. EMR 2020-2021 table 22. | |
| | | 64.l | Old Stores Dam (OSD); | | | | | 1 | | | | | 3 | Part Compliance (High) | Not mentioned in the EMR or water storage infrastructure master list. The Water Management Plan states that OSD has a HDPE liner and a storage capacity of 0.6 ML. There was insufficient documentation or records available at time of the audit to demonstrate that Old Stores Dam was designed, constructed and managed in accordance with the condition or that it is not in use for AMD storage. | OFI: Update the water storage infrastructure master list for Old Stores Dam, North East Sump and Central East Bravo Sump to include relevant information and retain evidence of any inspections. |
| | | 64.m | Pond 2 (P2); | | | | | 1 | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. EMR 2020-2021 table 21. | |
| | | 64.n | Central East 1 Sump (CE1S); | | | | | 1 | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. | |
| | | 64.o | East Drain Sump (EDS); | | | | | 1 | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. EMR 2020-2021 table 21. | |
| | | 64.p | West D Sump (WDS); | | | | | 1 | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. The Operator advised "The SOEF Sump, West D Sump, and West A sump were cleaned out and lined with HDPE during the reporting period, photos are available in EMR Section 2.5.2." EMR 2020-2021 table 21. | |
| | | 64.q | Mine Infrastructure Area Sump (MIAS); | | | | | 1 | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections and the EMR 2020-2021 table 21. | |
| | | 64.r | West A Sump (WAS); | | | | | 1 | | | | | 4 | Full Compliance | Included in the Water storage infrastructure master list dated 30/04/2021 including daily visual inspections. The Operator advised "The SOEF Sump, West D Sump, and West A sump were cleaned out and lined with HDPE during the reporting period, photos are available in EMR Section 2.5.2." EMR 2020-2021 table 21. | |
| | | 64.s | North East Sump (NES); | | | | | 1 | | | | | 3 | Part Compliance (High) | Not mentioned in the EMR, water storage infrastructure master list or Water Management Plan. There was insufficient documentation or records available at time of the audit to demonstrate that North East Sump was designed, constructed and managed in accordance with the condition or that it is not in use for AMD storage. | OFI: Refer condition 64.l above. |
| | | 64.t | North West Sump (NWS); | | | | | 1 | | | | | N/A | Not Applicable | | The Operator advised that this storage structure does not exist yet. |
| | | 64.u | NE Stilling Basin (NESB); | | | | | 1 | | | | | N/A | Not Applicable | | The Operator advised that this storage structure does not exist yet. |
| | | 64.v | Central East Alpha Sump (CEAS); | | | | | 1 | | | | | N/A | Not Applicable | | The Operator advised that this storage structure does not exist yet. |
| | | 64.w | Central East Bravo Sump (CEBS); | | | | | 1 | | | | | 3 | Part Compliance (High) | Not mentioned in the EMR, water storage infrastructure master list or Water Management Plan. There was insufficient documentation or records available at time of the audit to demonstrate that Central East Bravo Sump was designed, constructed and managed in accordance with the condition or that it is not in use for AMD storage. | OFI: Refer condition 64.l above. |
| | | 64.x | South Stilling Basin (SSB); | | | | | 1 | | | | | N/A | Not Applicable | | The Operator advised that this storage structure does not exist yet. |
| | | 64.y | South Overburden Emplacement Facility Sump (SOEF Sump); | | | | | 1 | | | | | 4 | Full Compliance | The Operator advised "The SOEF Sump, West D Sump, and West A sump were cleaned out and lined with HDPE during the reporting period, photos are available in EMR Section 2.5.2." SOEF is included in Table 1 of the Geotechnical Inspection Procedure. | OBS: Add South Overburden Emplacement Facility Sump to the water storage infrastructure master list. |
| | | 64.z | Low-grade Sump (LGS); | | | | | 1 | | | | | N/A | Not Applicable | | The Operator advised that this storage structure does not exist yet. |
| | | 64.aa | Rice Paddies Pond (RPP); | | | | | 1 | | | | | N/A | Not Applicable | | The Operator advised that this storage structure does not exist yet. |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste Management | Open Pit/Underground Workings | Tailings Storage Facility | Water Management and Storages | Overburden Placement Facilities | Exploration | Waterways (including river diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments | |
|---|---|---|--|--------------------|------------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------------|-------------|---------------------------------------|----------------------------|-------|-------------------------|--|---|--|
| | | 64.bb | Bing Bong Site Runoff Pond 1 (BBSRP1); | | | | | 1 | | | | 1 | 4 | Full Compliance | BBSRP routine visual inspection form (BB Water Management). Included in the Water storage infrastructure master list dated 30/04/2021 with HDPE lining and groundwater monitoring is undertaken to monitor the receiving environment (Apr20-Apr21_GroundWater Data). BBSRP routine visual inspection form (BB Water Management) example dated 07/06 demonstrates visual inspections are undertaken and the form has correct prompts and had relevant environmental and structural comments. | OBS: Noting that the date on the provided BBSRP routine visual inspection form (BB Water Management) was 07/06, suggest the team be asked to fill in the forms completely (e.g. include the date in full: date, month and year and sign forms). | |
| | | 64.cc | Bing Bong Site Runoff Pond 2 (BBSRP2); | | | | | 1 | | | | 1 | 4 | Full Compliance | BBSRP routine visual inspection form (BB Water Management). Included in the Water storage infrastructure master list dated 30/04/2021 with HDPE lining and groundwater monitoring is undertaken to monitor the receiving environment (Apr20-Apr21_GroundWater Data). BBSRP routine visual inspection form (BB Water Management) example dated 07/06 demonstrates visual inspections are undertaken and the form has correct prompts and had relevant environmental and structural comments. | | |
| | | 64.dd | Bing Bong Site Runoff Pond 3 (BBSRP3). | | | | | 1 | | | | 1 | 4 | Full Compliance | BBSRP routine visual inspection form (BB Water Management). Included in the Water storage infrastructure master list dated 30/04/2021 with HDPE lining and groundwater monitoring is undertaken to monitor the receiving environment (Apr20-Apr21_GroundWater Data). BBSRP routine visual inspection form (BB Water Management) example dated 07/06 demonstrates visual inspections are undertaken and the form has correct prompts and had relevant environmental and structural comments. | | |
| Water Transfer and Discharge | | | | | | | | | | | | | | | | | |
| | | 65 - previously 38 | The Operator must not transfer water to or discharge water from any water storage structure until: water quality analysis has been received and interpreted by the Operator; | | | | | | | | | | | Refer to sub conditions | | | |
| | | 65.a | | | | | | 1 | | | | | 4 | Full Compliance | PRO-2200035 Waste Discharge Procedure (in Water Management Plan) Example Weekly Water Quality Reviews provided: - 22 November 2020 - 12 January 2021 - 17 February 2021. Water quality analysis and interpretation was seen in the example weekly water quality reviews provided. Weekly Water Quality Review 12 January 2021 stated "This review presents a summary of water quality data from natural surface waters, the underground water storage, mine water storages and discharge source waters collected on 2 and 3 January." | The Operator advised "Environment provides the water quality information in a weekly summary and the projects and water department make the decision on what is suitable to send where." The weekly review presents a summary of water quality data from natural surface waters, the underground water storage, mine water storages and discharge source waters collected." | |
| | | 65.b | results confirm the water is suitable for the destination, having regard to the requirements of this document, the approved MMP and any other relevant restrictions on transfer or discharge of water within or from the Mine. | | | | | 1 | | | | | 4 | Full Compliance | PRO-2200035 Waste Discharge Procedure (in Water Management Plan) Example Weekly Water Quality Reviews provided: - 22 November 2020 - 12 January 2021 - 17 February 2021. The results demonstrated compliance. | The Operator advised "Environment provides the water quality information in a weekly summary and the projects and water department make the decision on what is suitable to send where." The weekly review presents a summary of water quality data from natural surface waters, the underground water storage, mine water storages and discharge source waters collected." | |
| | | 66 - previously 38 | The Operator is authorised to undertake works to release water from WMD to Little Barney Creek in accordance with previous approvals as defined in Schedule B. | | | | | 1 | | | | 1 | 4 | Full Compliance | Water Management Plan 2020. Water Management Plan 2020 section 3.8.1 "In addition, pursuant to the Mining Management Act (NT) in the VOA 0059, MRM is authorised for managed releases of waste water at the WMD into the Little Barney Creek via the WMD Release Point (WMD RP). This release point is also shown on Figure 12." | There was no evidence of any releases of water from WMD to Little Barney Creek that would not be in accordance with previous approvals as defined in Schedule B. | |
| | | 67 - previously 38 | From the date of authorisation of the Overburden Management Project, water releases are authorised from the following points: < Authorised Release Points, Receiving Water Body, Latitude, Longitude > *WMD, Little Barney Creek, -16.42635, 136.0693 *Mine Levee Release Point (MLRP), Barney Creek Diversion, -16.42743, 136.1114 *South-East Levee 1 Release Point (SEL1 RP), Barney Creek Diversion, -16.42394, 136.1082 *McArthur River Diversion Channel Release Point[11], McArthur River Diversion, -16.43468, 136.1207 | | | | | 1 | | | | 1 | 4 | Full Compliance | EMR 2020 - 2021. EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21. EMR 2020 - 2021 Section 4.1.3 states "Table 24 presents the releases from the Mine Levee Discharge Point(s) (MLDP), South-East Levee Discharge Point (SEL1 DP) and the Water Management Dam Release Point (WMD RP) to the McArthur River between 1 May 2020 and 30 April 2021. A total of approximately 2,037.7 ML was released from the authorised discharge and release points during the reporting period. This included approximately: • 711.3 ML via the MLDP (from TSF WMD and OP P2); • 18.0 ML via the SEL1 DP (from NOEF SEL1); and • 1,308.4 ML via the WMD RP (from the TSF WMD siphons). Managed releases from the MLDP and SEL1 DP were undertaken in accordance with conditions of Waste Discharge Licence (WDL) 174-11. Managed releases from the WMD RP were undertaken in accordance with conditions of MRM's Variation of Authorisation 0059." EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 executive summary states "Over the reporting period, approximately 711.3 ML, 18.0 ML and 1,308.4 ML of mine water was released via the MLDP (from TSF WMD and OP P2), the SEL1 DP (from NOEF SEL1 and the WMD RP (from the TSF WMD siphons), respectively. The total volume of water release to the McArthur River was approximately 2037.7 ML." | OBS: Ensure consistency between the naming of the release points in the Authorisation and those used in the Water Management Plan and EMR (i.e. WMD RP to Little Barney Creek rather than McArthur River). McArthur River Diversion Channel Release Point[11], McArthur River Diversion, -16.43468, 136.1207 is not constructed yet. The Operator is preparing an amendment to the WDL to add this new location so that it discharges directly into the McArthur River (improvement opportunity as dilution occurs instantaneously). Water Management Plan 2020 section 3.8.1 "In addition, pursuant to the Mining Management Act (NT) in the VOA 0059, MRM is authorised for managed releases of waste water at the WMD into the Little Barney Creek via the WMD Release Point (WMD RP). This release point is also shown on Figure 12." | |
| | | 68 | The Operator must: | | | | | | | | | | | Refer to sub conditions | | | |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden Placement | Facilities | Exploration | Waterways (including river | diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|----------------------|------------|-------------|----------------------------|------------|----------------------------|-------|-------------------------|---|---|
| | | 68.a | ensure all offsite water discharges are undertaken in accordance with a valid WDL; | 1 | | | | | | 1 | | | | | 1 | | | 4 | Full Compliance | WDL174-11. | Based on the IM's audit of the WDL, the offsite water discharges have been undertaken in accordance with a valid WDL (WDL174-11). WDL174-11 ended on 28 April 2021 and the new licence WDL174-12 commenced outside the audit period on 25 May 2021. While there was not a WDL in place for the final days of the audit period, there were no discharges undertaken and therefore this condition is compliant. |
| | | 68.b | only release water for offsite discharge from the WDL approved points; | | | | | | | 1 | | | | | 1 | | | 4 | Full Compliance | Email from Operator to Department subject MRM November 2020 VOA Conditions 59 and 68 dated 24Nov2020. Email from Department to Operator subject RE MRM November 2020 VOA Conditions 59 and 68 dated 30Nov2020. The Operator sought clarification of the intent of Condition 68b via email correspondence. Email from Operator to Department subject MRM November 2020 VOA Conditions 59 and 68 dated 24Nov2020 stated "We interpret MRM's Water Management Dam (WMD) Siphons Release Point to be an onsite water release/transfer point. This view is shared by DEPWS, as confirmed in our meeting with them in October 2020 where they advised we would not need to include it in our upcoming WDL renewal or amendment application(s) as it was not relevant for the Waste Discharge Licence." Email from Department to Operator subject RE MRM November 2020 VOA Conditions 59 and 68 dated 30Nov2020 stated "I have discussed this with the delegate (Director Mining Operations), and we all agree with MRM's interpretation for Conditions 59 and 68, as outlined below." | The Operator sought clarification of the intent of Condition 68b via email correspondence. Email from Operator to Department subject MRM November 2020 VOA Conditions 59 and 68 dated 24Nov2020 stated "We interpret MRM's Water Management Dam (WMD) Siphons Release Point to be an onsite water release/transfer point. This view is shared by DEPWS, as confirmed in our meeting with them in October 2020 where they advised we would not need to include it in our upcoming WDL renewal or amendment application(s) as it was not relevant for the Waste Discharge Licence." Email from Department to Operator subject RE MRM November 2020 VOA Conditions 59 and 68 dated 30Nov2020 stated "I have discussed this with the delegate (Director Mining Operations), and we all agree with MRM's interpretation for Conditions 59 and 68, as outlined below." |
| | | 68.c - previously 38 | interpret and report all data and results acquired as part of the activity in the Operator's Annual Environmental Mining Report; | | | | | | | 1 | | | | | 1 | | | 4 | Full Compliance | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 section 6.5 states "Based on the review of surface water quality monitoring data between 1 May 2020 and 30 April 2021, MRM continue to implement effective controls to minimise the risk of environmental harm of downstream receiving waters due to Mine operations. The review concluded that the beneficial uses and community values of the McArthur River continue to be protected from potential mining derived impacts. There were no mine derived SSTV exceedances or non-compliances recorded at the SW11 compliance point in the McArthur River during the reporting period. The SSTV exceedances recorded at SW11 during the reporting period were unrelated to mine activities and were a result of natural river processes and contributions from sources upstream of the Mine." | |
| | | 68.d - previously 38 | evaluate the performance of this activity in terms of its effectiveness as a management tool; | | | | | | | 1 | | | | | 1 | | | 4 | Full Compliance | EMR 2020 - 2021. EMR 2020 - 2021 - Appendix R Surface Water Monitoring Annual Report 2020-21. EMR 2020 - 2021 introduction "The presentation and discussion of results in this EMR is used to determine whether or not these management actions are effective, and that the Mine maintains compliance with the relevant approval conditions." Environmental Monitoring Report - Appendix R Surface Water Monitoring Annual Report 2020-21 Section 6.5 states "Based on the review of surface water quality monitoring data between 1 May 2020 and 30 April 2021, MRM continue to implement effective controls to minimise the risk of environmental harm of downstream receiving waters due to Mine operations. The review concluded that the beneficial uses and community values of the McArthur River continue to be protected from potential mining derived impacts. There were no mine derived SSTV exceedances or non-compliances recorded at the SW11 compliance point in the McArthur River during the reporting period. The SSTV exceedances recorded at SW11 during the reporting period were unrelated to mine activities and were a result of natural river processes and contributions from sources upstream of the Mine." EMR 2020 - 2021 states in section 6 "In consideration of all monitoring results for the reporting period, the performance required to protect the downstream beneficial uses and community values of the McArthur River continues to be achieved (Plate 35), and the current monitoring and management measures being implemented are appropriate, with the recommended additional measures to further reduce the risk associated with lead fallout." | |
| | | 68.e - previously 38 | by 30 June 2020, characterise total loads of mine-derived contaminants from all source inputs for the 2017-2018 period consistent with Condition 16.b), unless otherwise agreed in writing by the Department. | | | | | | | 1 | | | | | 1 | | | 4 | Full Compliance | Email from Operator to Department subject MRM Variation of Authorisation Condition (38c); 2017-2018 Mine -Derived Loads dated 8 May 2020. 220508 MRM-DPIR_Condition 38 mine-derived loads. Attachment A - 2017-18 Mine Derived Analyte Loads Assessment. | |
| | | 69 - previously 38 | The Operator must in relation to the WMD release point to Little Barney Creek undertake: | | | | | | | | | | | | | | | | Refer to sub conditions | | |
| | | 69.a | release activity that minimises localised erosion, and utilises suitable energy dissipation and flow spreader structures (e.g. rock basin) and be monitored daily during release events; | | | | | | | 1 | | | | | 1 | | | 4 | Full Compliance | WMD Release Point Checklist spreadsheet template. EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 The WMD Release Point Checklist spreadsheet includes a prompt to advise if "rock basin erosion is controlled". Figure 4.11 - WMD RP inspection summary, at WMD RP depicts the erosion checking for 21 out of 21 release days. | The Operator advised that there is a rock structure to dissipate energy and piped to rock structure. Daily inspection at time of release from WMD into Little Barney, which is included in the WMD Release Point Checklist spreadsheet template "During discharge - daily inspection of the rock basin at the release point to ensure erosion is being suitably controlled". |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden Emplacement | Facilities | Exploration | Waterways (including river | diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|------------------------|------------|-------------|----------------------------|------------|----------------------------|-------|------------------|--|--|
| | | 69.b | remediation in the event of unacceptable erosion occurring at the Carpentaria Highway culvert system to the satisfaction of the Department of Infrastructure, Planning and Logistics and the Department; | | | | | | | 1 | | | | | 1 | | | N/A | Not Applicable | | Operator advised no erosion identified during the audit period. Silt accumulates under the Carpentaria Highway culvert from upstream (discharge from site is not high is sediment) and so there is removal as required from the culvert. Given the audit period ends 30 April 2021, the 2021 assessment falls into the next audit period. |
| | | 69.c | a cross-section profile survey immediately up-stream and down-stream of the Carpentaria Highway crossing, prior to and following each wet season; | | | | | | | 1 | | | | | 1 | | | 4 | Full Compliance | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 includes as Appendix E - Little Barney Creek geomorphic characteristics (this appendix is Geomorphic characteristics of Little Barney Creek 2020 memorandum dated 19 November 2020 from wrm water + environment to the Operator). | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 Section 4.4.7 states "Appendix E -presents a review of Little Barney Creek geomorphic characteristics downstream of WMD RP. This assessment was undertaken in accordance with conditions of the VoA. The findings of this assessment included: • little to no erosion occurred in the vicinity of the Little Barney Creek culvert crossing and therefore it is expected that no major geomorphic changes have occurred as a result of any authorised discharge from the WMD RP; and • There have been no significant changes in the Little Barney Creek channel with little to no bed erosion along the length of the channel since 2018." Geomorphic characteristics of Little Barney Creek 2020 memorandum uses available aerial and ground survey data from October 2018, August 2019 and August 2020 to review Little Barney Creek at the following two locations: *The Carpentaria Highway culvert crossing of Little Barney Creek *The reach between the Carpentaria Highway and Barney Creek. This provides a review annually during the dry season (i.e. following one wet season and prior to the next). The Independent Monitor confirms that cross sections as required by this condition were included. Given the audit period ends 30 April 2021, the 2021 assessment would fall into the next audit period. |
| | | 69.d | each wet season quantification of any significant changes to creek morphology as function of time by documenting at a minimum morphology prior to first water release, and following the last water release. This could be achieved, for example, using a drone survey of the drainage system between the flow outlet and Barney Creek Diversion using a consistent flight path, with the resulting image overlaid on appropriately sized grid (e.g. 2.5 x 2.5 m); | | | | | | | 1 | | | | | 1 | | | 4 | Full Compliance | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 includes as Appendix E - Little Barney Creek geomorphic characteristics (this appendix is Geomorphic characteristics of Little Barney Creek 2020 memorandum dated 19 November 2020 from wrm water + environment to the Operator). | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 Section 4.4.7 states "Appendix E -presents a review of Little Barney Creek geomorphic characteristics downstream of WMD RP. This assessment was undertaken in accordance with conditions of the VoA. The findings of this assessment included: • little to no erosion occurred in the vicinity of the Little Barney Creek culvert crossing and therefore it is expected that no major geomorphic changes have occurred as a result of any authorised discharge from the WMD RP; and • There have been no significant changes in the Little Barney Creek channel with little to no bed erosion along the length of the channel since 2018." Geomorphic characteristics of Little Barney Creek 2020 memorandum "Based on the available aerial photography and LiDAR ground survey information there has been no significant change to the Little Barney Creek channel bed and banks downstream of the WMDRP. On this basis, any discharges from the WMDRP undertaken since 2018 has not resulted in a significant change in geomorphic characteristics of Little Barney Creek." Following the 2020 wet season was yet to be undertaken at the time of the audit period. |
| | | 69.e | measure and record flow duration, flow rate and volume of all water released from WMD into Little Barney Creek; | | | | | | | 1 | | | | | 1 | | | 4 | Full Compliance | Monthly Discharge Monitoring Report – December 2020 Monthly Discharge Monitoring Report – January 2021 Monthly Discharge Monitoring Report – February 2021 Monthly Discharge Monitoring Report – March 2021 Discharge Spreadsheet (2020-21 Waste Discharge Records and Loads Tracking). The Discharge Spreadsheet (2020-21 Waste Discharge Records and Loads Tracking) includes: *Daily discharge start and finish times *Avg Flow Rate (L/s) daily *Total Discharged (ML) daily. | The Independent Monitor confirmed that the 2020-21 Waste Discharge Records and Loads Tracking Spreadsheet showed that 4 months (December, January, February, March) had a discharge in the reporting period. Noting that the flow rates are "Estimated average using interpolation between provided flow rates. See 'Siphon Flow Rate Interpolation' spreadsheet." |
| | | 69.f | ensure all evidence of continuous flow in Little Barney Creek along the length of the drainage system between WMD release outlet and Little Barney Creek Diversion Channel is available for inspection; | | | | | | | 1 | | | | | 1 | | | 4 | Full Compliance | WMD Release Point Checklist spreadsheet 2020-2021. WMD Release Point Checklist spreadsheet template. EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 WMD Release Point Checklist spreadsheet template includes "During discharge - daily inspection (and evidence) off flow along the drainage line between the end of the Little Barney Creek Diversion Channel and the Little Barney Creek Culvert (see map tab)". Figure 4.11 – WMD RP inspection summary, at WMD RP depicts the observable flow checking for 21 out of 21 release days. | |
| | | 69.g | ensure the surface water monitoring schedule for the activity includes SW06, which must be assessed for identical parameters as defined for SW03. At monitoring points SW03 and SW06; | | | | | | | 1 | | | | | 1 | | | 4 | Full Compliance | MRM Environmental Monitoring Schedule 2021. MRM Environmental Monitoring Schedule 2020 (2019-20 MRM Environmental Monitoring Schedule 1001 Rev2). WMD Release Point Checklist spreadsheet 2020-2021. The Environmental Monitoring Schedule 2019/2020 shows that SW06 is sampled for all of the parameters that SW03 is, plus some additional parameters. Monitoring is required at SW03 and SW06 "weekly with flow at the sample point" in MRM Environmental Monitoring Schedule 2020. MRM Environmental Monitoring Schedule 2021 has removed the requirement to monitor at SW03, which seems inconsistent with this condition. SW06 remains sampled for the same parameters as the 2019/2020 monitoring schedule. | OBS: Include SW03 on the MRM Environmental Monitoring Schedule 2021. |

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden Placement | Facilities | Exploration | Waterways (including river | diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|----------------------|------------|-------------|----------------------------|------------|----------------------------|-------|----------------------------|---|--|
| | | 69.g.i | Field parameters must also be measured daily during water release from WMD into Little Barney; | | | | | | | 1 | | | | | 1 | | | 2 | Part Compliance (moderate) | <p>Upon Discharge Surface Water Sampling field sheets for December (20Dec2020, 22Dec2020, 25Dec2020 and 30Dec2020). WMD Release Point Checklist spreadsheet 2020-2021. NSW spreadsheet of sampling results Monthly Discharge Monitoring Report – December 2020 EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21</p> <p>EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 Section 4.4.4 states "The potential downstream impacts of releases from WMD RP was investigated in accordance with conditions of the VoA. This included: • Investigating the recorded water quality at SW03 and SW06 (or SW20 when SW06 was not available) during days when releases occurred;" and figure 4.9 shows "WMD RP inspection summary, at downstream locations (SW03, SW06/SW20)".</p> <p>Upon Discharge Surface Water Sampling field sheets provided for December show that SW06 is listed/sampled but do not appear to include SW03. However, the spreadsheet of results provided has days for field results that do not include SW06 but include SW20. NSW spreadsheet provided shows no monitoring at SW06 on 25Dec20 or 26Dec20 when discharge was occurring. It does show results for SW20 and SW03.</p> <p>Monthly Discharge Monitoring Report – December 2020 includes discharges from WMD RP from 25Dec20 to 28Dec20 and 30Dec20 to 1Jan21. The daily discharge form for 22Dec20 and 25Dec20 appear to have notations that some sampling was undertaken on 23Dec20 and 27Dec20 instead. Daily sampling data appears to be incomplete. The WMD Release Point Checklist spreadsheet 2020 - 2021 shows some instances of SW03 not being sampled and SW19 or SW20 being sampled in lieu of SW06.</p> | <p>Consistent with this condition, the WMD Release Point Checklist spreadsheet requires "During discharge - daily field readings at SW03 and SW06".</p> <p>The Operator advised "SW06 was only accessible via helicopter as the access track was closed due to AAPA restrictions. As a result, daily field readings required at SW06 were instead collected at SW20 (next upstream site)." The WMD Release Point Checklist spreadsheet 2020 - 2021 shows that the majority of the time, monitoring was undertaken at SW19 or SW20 instead of SW06 with a comment like "Field reading recored at SW20, as there was no safe access to SW06."</p> <p>OFl: Measure and record field parameters daily at SW03 and SW06 during water release from the WMD into Little Barney Creek, unless the Department approves the alternative SW06 sampling location. If sampling is undertaken at an alternate location, the field sheet should reflect the actual sampling location.</p> |
| | | 69.g.ii | The surface water monitoring analytical suite must include thallium, boron and cobalt; | | | | | | | 1 | | | | | 1 | | | 4 | Full Compliance | <p>MRM Environmental Monitoring Schedule 2021. MRM Environmental Monitoring Schedule 2020 (2019-20 MRM Environmental Monitoring Schedule I001 Rev2). Monthly Discharge Monitoring Report – December 2020.</p> <p>Analytical results in the Monthly Discharge Monitoring Report – December 2020 for SW06 for 21Dec2020 included Thallium, Boron and cobalt. The Environmental Monitoring Schedules for 2019-2020 and 2021 also included those analytes. However, SW03 appears to no longer be included in the MRM Environmental Monitoring Schedule 2021. However, the spreadsheet of results do still include SW03 for the relevant discharges.</p> | <p>OBS: SW03 does not appear to be included in the Operator's Environmental Monitoring Schedule 2021. Noted it is removed from WDL174-12.</p> |
| | | 69.g.iii | The surface water monitoring be continued for a further two weeks following completion of the release activities for the season or until field parameters have returned to baseline levels; | | | | | | | 1 | | | | | 1 | | | 4 | Full Compliance | <p>WMD Release Point Checklist spreadsheet. MRM Environmental Monitoring Schedule 2021. MRM Environmental Monitoring Schedule 2020 (2019-20 MRM Environmental Monitoring Schedule I001 Rev2). Monthly Discharge Monitoring Report – December 2020 EMR 2020 - 2021 – Appendix R Surface Water Monitoring Annual Report 2020-21. WMD Release Point Checklist spreadsheet 2020-2021.</p> <p>WMD Release Point Checklist spreadsheet states "Following commencement of discharge for the season - daily field readings at SW03 and SW06 for a further two weeks or until field parameters have returned to baseline levels".</p> <p>EMR 2020 - 2021 – Appendix R Surface Water Monitoring Annual Report 2020-21 section 4.4.5 states "Release event 9 (March 2021): o During the release event, water quality was recorded at SW03 and SW06/20 for 9 of the 9 release days. o Following the release event, water quality at the downstream locations was recorded daily for the 2 weeks following completion of release activities for the season in accordance with the VoA."</p> | <p>OBS: The WMD Release Point Checklist spreadsheet states "Following commencement of discharge for the season - daily field readings at SW03 and SW06 for a further two weeks or until field parameters have returned to baseline levels". However, potentially it should be referring to "following the end of discharge for the season..."</p> |
| | | 69.h | Measure total loads of analytes (including lead and zinc) from all controlled discharge activities entering McArthur River at location SW06 or an alternate location as agreed by the Department; | | | | | | | 1 | | | | | 1 | | | 4 | Full Compliance | <p>MRM Environmental Monitoring Schedule 2021. MRM Environmental Monitoring Schedule 2020 (2019-20 MRM Environmental Monitoring Schedule I001 Rev2). Monthly Discharge Monitoring Report – December 2020 Monthly Discharge Monitoring Report – January 2021 Monthly Discharge Monitoring Report – February 2021 Monthly Discharge Monitoring Report – March 2021</p> <p>The monitoring schedules list total metals, including lead and zinc, should be measured at SW06 when discharge is expected to reach this sampling location (in addition to weekly sampling when there is a flow).</p> <p>In addition the Monthly Discharge Monitoring Reports showed that the analyses were conducted.</p> | |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Placement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

| | | | | | | | | | | | | | | | | | |
|--|--|--------------------------------|--|--|--|--|--|--|--|--|--|--|--|-----|-------------------------|--|---|
| | | 69.i | Interpret the data acquired as part of the activity and its effectiveness and report in the Operator's Annual EMR in accordance with Condition 9. | | | | | | | | | | | 4 | Full Compliance | EMR 2020 -2021 introduction. EMR 2020 - 2021 – Appendix R Surface Water Monitoring Annual Report 2020-21. EMR 2020 -2021 introduction "The presentation and discussion of results in this EMR is used to determine whether or not these management actions are effective, and that the Mine maintains compliance with the relevant approval conditions." Environmental Monitoring Report – Appendix R Surface Water Monitoring Annual Report 2020-21 Section 6.5 states "Based on the review of surface water quality monitoring data between 1 May 2020 and 30 April 2021, MRM continue to implement effective controls to minimise the risk of environmental harm of downstream receiving waters due to Mine operations. The review concluded that the beneficial uses and community values of the McArthur River continue to be protected from potential mining derived impacts. There were no mine derived SSTV exceedances or non-compliances recorded at the SW11 compliance point in the McArthur River during the reporting period. The SSTV exceedances recorded at SW11 during the reporting period were unrelated to mine activities and were a result of natural river processes and contributions from sources upstream of the Mine." | |
| | | 70 | The Operator is authorised to undertake water management trial in accordance with: | | | | | | | | | | | | Refer to sub conditions | | Future item. No trials have occurred. |
| | | 70.a | concepts detailed in the approved MMP, ensuring the trial is designed to manage and control all impacted surface water runoff in accordance with the Water Management Plan: | | | | | | | | | | | N/A | Not Applicable | | Future item. No trials have occurred. |
| | | 70.a.i | Irrigation of Treated Water – Open Woodland Irrigation; | | | | | | | | | | | N/A | Not Applicable | | Future item. No trials have occurred. |
| | | 70.a.ii | Irrigation of Treated Water – Phytoremediation; | | | | | | | | | | | N/A | Not Applicable | | Future item. No trials have occurred. |
| | | 70.a.iii | Lowering of surface water elevations – Evapotranspiration; | | | | | | | | | | | N/A | Not Applicable | | Future item. No trials have occurred. |
| | | 70.a.iv | Sulfate Treatment System – Passive engineered wetland; | | | | | | | | | | | N/A | Not Applicable | | Future item. No trials have occurred. |
| | | 70.a.v | Sulfate Treatment System – Active Bioreactor; | | | | | | | | | | | N/A | Not Applicable | | Future item. No trials have occurred. |
| | | 70.b | Detailed designs, where nominated in the approved MMP, are developed in accordance with the concepts outlined in the approved MMP, and endorsed by relevant independent third party, prior to construction. | | | | | | | | | | | N/A | Not Applicable | | Future item. No trials have occurred. |
| | | 71 | At the conclusion of the trials in Condition 70, the Operator must apply in writing to the Department for approval of full-scale implementation. | | | | | | | | | | | N/A | Not Applicable | | Future item. No trials have occurred. |
| | | 72 - previously 40 changed | Water management using the Centre Pivot Irrigator is authorised: | | | | | | | | | | | | Refer to sub conditions | | Centre Pivot Irrigator was not in use in the audit period (is yet to be relocated to mine levee). |
| | | 72.a - previously 40 changed | within the Mine Levee in accordance with concept previously approved, as defined in Schedule B; | | | | | | | | | | | N/A | Not Applicable | | Centre Pivot Irrigator was not in use in the audit period (is yet to be relocated to mine levee). |
| | | 72.b - previously 40 changed | adjacent to the TSF in accordance with concept presented in the approved MMP; | | | | | | | | | | | N/A | Not Applicable | | Centre Pivot Irrigator was not in use in the audit period (is yet to be relocated to mine levee). |
| | | 72.c - previously 40 changed | to be configured to maximise evaporation and minimise surface spray drift, surface runoff and infiltration into underlying natural soils. | | | | | | | | | | | N/A | Not Applicable | | Centre Pivot Irrigator was not in use in the audit period (is yet to be relocated to mine levee). |
| Perimeter Run-Off Dams - SPROD, SEPROD, WPROD and EPROD | | | | | | | | | | | | | | | | | |
| | | 73 | The Operator is approved to develop SPROD and SEPROD in accordance with relevant documents defined in Schedule B; | | | | | | | | | | | N/A | Not Applicable | | Operator advised that SPROD and SEPROD were in use in the audit period but were constructed prior to the audit period. |
| | | 74 | The Operator is authorised to complete works to construct EPROD and WPROD in accordance with following: | | | | | | | | | | | | Refer to sub conditions | | |
| | | 74.a | EPROD: | | | | | | | | | | | | Refer to sub conditions | | |
| | | 74.a.i - previously 43 | as previously approved and defined in Schedule B, ensuring that only benign material be used in the construction of the western embankment wall; | | | | | | | | | | | 4 | Full Compliance | Working Draft - Eastern Perimeter Runoff Dam Construction Report November 2021. The Working Draft EPROD Construction Report Section 4.4 "Western Embankment Construction NAF rockfill" demonstrates the western embankment wall was constructed with only benign materials. | The Operator advised that EPROD is yet to be fully commissioned. |
| | | 74.b | WPROD: | | | | | | | | | | | | Refer to sub conditions | | |
| | | 74.a.i | CWNOEF and NOEF West D Amendment, as defined in Schedule B; and | | | | | | | | | | | N/A | Not Applicable | Western Perimeter Runoff Dam Construction and Commissioning Report (37649_Western PAF Runoff Dam As-Constructed Report_GHD_Rev0_170714). WPROD was completed in 2017. | Completed before the audit period. WPROD was completed in July 2017 (before the audit period commenced) and Independent Monitor sighted a completion report dated 14Jul2017. |
| | | 74.a.ii | WPROD and Western Surface Water Management Design Update (GHD Memo), as defined in Schedule B. | | | | | | | | | | | N/A | Not Applicable | Western Perimeter Runoff Dam Construction and Commissioning Report (37649_Western PAF Runoff Dam As-Constructed Report_GHD_Rev0_170714). WPROD was completed in 2017. | Completed before the audit period. WPROD was completed in July 2017 (before the audit period commenced) and Independent Monitor sighted a completion report dated 14Jul2017. |
| | | 75 - previously 44 for EPROD | The Operator must construct EPROD and WPROD in accordance with the following regime in the event groundwater dewatering is necessary: | | | | | | | | | | | | Refer to sub conditions | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.a - previously 44 for EPROD | six hourly monitoring of field parameters for the first 24 hours of dewatering. Should parameters not stabilise during the first 24 hours then six hourly monitoring must continue until stabilisation has occurred; | | | | | | | | | | | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden | Facilities | Exploration | Waterways (including river | diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|------------|------------|-------------|----------------------------|------------|----------------------------|-------|----------------------------|---|---|
| | | 75.b - previously 44 for EPROD | field parameters must be taken daily following the first 24 hour period. Should parameters change more than 20% then the frequency must increase to every 12 hours until parameters have stabilised; | | | | | | 1 | | | | | | | | | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.c - previously 44 for EPROD | field parameters must include pH, specific electrical conductivity (SEC), temperature, REDOX and dissolved oxygen; | | | | | | 1 | | | | | | | | | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.d - previously 44 for EPROD | water samples must be taken and analysed at the commencement of dewatering at the end of the first 24 hours, and then weekly sampling and analysis of dewatering water for the remainder of the construction; | | | | | | 1 | | | | | | | | | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.e - previously 44 for EPROD | additional sampling and analysis must be undertaken if there is a substantial change in field parameters (approximately 30%); | | | | | | 1 | | | | | | | | | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.f - previously 44 for EPROD | analysis must include: specific electrical conductivity (SEC), major ions (Ca, K, Mg, Na, Cl, CO3, HCO3 and SO4), Al, As, Cd, Co, Cu, Fe, Mn, Ni, Pb, Se and Zn; | | | | | | 1 | | | | | | | | | N/A | Not Applicable | | Note that Pb was not required in the previous Authorisation versions (44.f). The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.g - previously 44 for EPROD | field parameters and samples for analysis must be taken from the dewatering source, not the receiving storage; | | | | | | 1 | | | | | | | | | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.h - previously 44 for EPROD | if flow meters fail, then dewatering must cease until they are repaired or replaced; | | | | | | 1 | | | | | | | | | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.i - previously 44 for EPROD | field water quality parameters, flow meter volumes and laboratory analysis must be submitted to Department on a monthly basis; | | | | | | 1 | | | | | | | | | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.j - previously 44 for EPROD | any indication of fracturing and/or caverns (Karstification/dissolution features) must be recorded during logging along with water strikes and estimated yields during drilling; | | | | | | 1 | | | | | | | | | N/A | Not Applicable | | The Operator advised "no groundwater dewatering was required for either WPROD or EPROD". |
| | | 75.k - previously 45 for EPROD | Construction reports including QA and QC data endorsed by the ICE must be provided to the Department prior to commencement of operation within 30 days of construction being completed. | | | | | | 1 | | | | | | | | | N/A | Not Applicable | | Condition 75 and its subconditions (including 75k) are N/A as there was no dewatering. The intent of subcondition 75k is for the submission of construction reports within 30 days of construction completion, irrespective of whether dewatering has occurred. |
| 45 | 45 | | Construction reports including QA and QC data endorsed by the Independent Certifying Engineer (ICE) must be provided to the Department prior to commencement of operation within 30 days of construction being completed | | | | | | 1 | | | | | | | | | 3 | Part Compliance (High) | Email DITT to Operator subject MRM - Commissioning of EPROD dated 20Mar 2020. DITT approved early operation of EPROD based on correspondence listed above stating "Given that ICE has identified the pit can be dewatered and the water used as part of the commissioning tests, it is accepted that the intent of Condition 45 of the Authorisation for operational use EPROD will be achieved." No evidence of submission to DITT of the construction reports including QA and QC data endorsed by the ICE for the operating EPROD was provided. | This condition is identical to 75.k in the 13Nov2020 Authorisation except that it doesn't sit as a subcondition related to dewatering of the PRODS. OFI: Prepare and submit the construction reports including Quality Assurance (QA) and Quality Control (QC) data endorsed by the ICE for EPROD, given that early approval to operate EPROD was granted 20 March 2020. The EPROD Commissioning Plan stated the EPROD construction report needed to be completed "as soon as possible". |
| Tailings storage facility | | | | | | | | | | | | | | | | | | | | | |
| 46 | 46 | | An Independent Certifying Engineer (ICE) must oversee and be responsible for any works undertaken at the TSF: | 1 | | | | | 1 | | | | | | | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020. It is provided for context of a subcondition. |
| 46.d | 46.d | | construction reports including QA and QC data must be provided to the Department within 30 days of construction being completed. | | | | | | 1 | | | | | | | | | 2 | Part Compliance (moderate) | Sighted MRM Cell 2 TSF Stage 5 Raise to RL 10059m. Sighted email dated 24Aug2020. Email from Operator to Department FW: MRM TSF Cell 1 Stage 4 Raise Construction Report dated 21Oct2020. Letter ICE to Operator subject TSF Cell 1 Stage 4 Raise Construction Report Independent Certifying Engineer (ICE) Endorsement Letter dated 15Oct2020. Note that the Operator only provided the cell 1 stage 4 report in the audit period. More than 30 days from construction completion. The Operator advised that Cell 2 Stage 5 was complete in 2018, however the construction report was only submitted to the Department 24Aug20, which is not compliant as it was more than 30 days from construction completion. The Operator advised that Cell 1 Stage 4 was complete in January 2020, however the construction report was only submitted to the Department on15Oct20, which is not compliant as it was more than 30 days from construction completion. The Independent Monitor has identified that the late submission of construction reports for the TSF is a repeated non-compliance. | This condition is only relevant until 13Nov2020. OFI: Ensure TSF construction reports including QA and QC data are submitted within the 30 day timeframe stipulated in the condition. While this condition is no longer in the 13 November 2020 Authorisation, an equivalent requirement exists for all of the ICE construction reports in Condition 48.g. OBS: Operator advised that 30 days is not a sufficient time to prepare the as-constructed report. |
| 51 | 51 | | The Operator is authorised to complete works to recommission TSF Cell 1 in accordance with the 2013-2015 MMP amendment and additional information provided to the Department, as defined in Condition 1.1.ii.12. The Operator must ensure: | | | | | | | | | | | | | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020. |
| 51.a | 51.a | | The existing clay cap, if redundant, is removed as part of the recommissioning works; and | | | | | | 1 | | | | | | | | | 4 | Full Compliance | TSF Cell 1 Stage 4 - Raise to RL 10,056m Construction Report (July 2020). | This condition is only relevant until 13Nov2020. The clay cap has been removed to allow maximum space for tailings. The As constructed report confirmed this in Section 3.3. |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Placement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

| | | | | | | | | | | | | | | | | |
|------|------|--|---|--|--|--|---|--|--|--|--|--|-----|-------------------------|--|---|
| 51.b | 51.b | | The Cell 1 Seepage Interception Trench system must be constructed and an operation manual detailing rules of operation, maintenance and environmental monitoring requirements be developed prior to operation of the system; and | | | | 1 | | | | | | 4 | Full Compliance | <p>Seepage Interception Trench Tailings Storage Facility Domain OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL Manual-Draft (not published on document control as of 24Sep2021) version 1 dated November 2020. EMR 2020 -2021.</p> <p>EMR 2020 -2021 states "The TSF Interception Trench commenced operation (pumping) in October 2020. During the reporting period, a total of 349 ML of water was pumped from the trench back into the TSF." The Operator advised that while this terminology says "operation", the system was not considered operational until construction was completed 5Nov20.</p> <p>There is a standalone OMS Manual for the trench which is still a draft document dated November 2020.</p> <p>Seepage Interception Trench Tailings Storage Facility Domain OMS Manual Section 5.4.1 states "A schematic flow diagram of the interception trench is provided in Figure 5-3. Details of the pumps and gensets used in the system, including maintenance requirements, is outlined in Section 7.4." and Section 6 has operational procedures including TARPS in Section 6.2.3 and monitoring requirements are in the Instrumentation and monitoring section (note it would be section 7 but has a formatting issue so no section number).</p> <p>Operation appears to have commenced prior to the finalisation of the OMS.</p> | <p>This condition is only relevant until 13Nov2020.</p> <p>OBS: The Seepage Interception Trench Tailings Storage Facility Domain OMS Manual is currently a draft version. There is a need to proceed to complete the manual, including but not limited to incorporating environmental trigger levels to produce a final version.</p> <p>The Operator advised "The Cell 1 Seepage Interception Trench system was considered operational on the date of construction completion (5 November 2020, when pipework was complete). Note that construction of the Trench required dewatering to allow for access and installation of equipment, as described in 'Tailings Storage Facility Seepage Interception Trench Design' (GHD, 2019) Section 6.3.3:</p> <p>"During construction, it is expected that a significant amount of dewatering will be required to install the sumps, reach the target trench invert level and install the drainage and transfer pipes. During this period, temporary sump pumps will be installed to remove water from the trench excavation. The extraction volumes from each trench segment will be recorded, as well as the response in the monitoring bores."</p> <p>The distinction between previous dewatering and the October date, is October is when the pumps in Sump 5 were installed and the automated pumping system / associated flowmeters became operational. Previously, MRM were using a temporary skid-mounted pump at Sump 5."</p> |
| 51.c | 51.c | | The TSF OMS manual, including the TARP must be updated to include Cell 1. | | | | 1 | | | | | | 4 | Full Compliance | <p>TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Revision following Cell 1 Stage 4 Raise to RL 10,056 m fulfilled this condition.</p> | <p>This condition is only relevant until 13Nov2020.</p> |
| 52 | 52 | | The Operator is authorised to complete lift Cell 1 embankment raise works as follows: | | | | | | | | | | | Refer to sub conditions | | <p>This condition is only relevant until 13Nov2020.</p> |
| 52.a | 52.a | | Cell 1 Stage 4 is to be in accordance with the 2013-2015 MMP amendment and additional information provided to the Department, as defined in Condition 1.1.ii.2; | | | | 1 | | | | | | N/A | Not Applicable | <p>TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report (July 2020).</p> <p>MRM Tailings Storage Facility Quarterly Report March 2020 – May 2020 states "January 2020 Completion of Cell 1 Stage 4 construction."</p> <p>ITRB endorsement Cell 1 Raise 4.</p> <p>TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report (July 2020).</p> | <p>Before audit period. Operator advised that construction was complete in January 2020.</p> |
| 52.b | 52.b | | Trials and investigations, including but not limited to blending of tailings with clay, investigation of in-situ Cell 1 conditions at east and west sumps, restriction on rate of placement of embankment materials and any other works identified by ITRB must be undertaken to inform the final construction; | | | | 1 | | | | | | N/A | Not Applicable | <p>The ITRB endorsed the TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report and therefore works identified by the ITRB must have been undertaken to inform the final construction. Section 5.3.2 discusses blending the existing Cell 1 clay material with the existing tailings and the trials/investigations that were undertaken. Section 3.3 discussion stripping the eastern sump.</p> | <p>Before audit period. Operator advised that construction was complete in January 2020.</p> |
| 52.c | 52.c | | If construction works are not completed prior to the start of the wet season, the Operator must make allowances of rainfall on the stability of the structure to the satisfaction of the ICE; | | | | 1 | | | | | | N/A | Not Applicable | <p>MRM Tailings Storage Facility Quarterly Report March 2020 – May 2020 states "January 2020 Completion of Cell 1 Stage 4 construction."</p> | <p>Before audit period. Operator advised that construction was complete in January 2020.</p> |
| 52.d | 52.d | | At completion of the construction works the ICE must approve an "as-constructed" construction report and updates to the TSF Operations, Maintenance and Surveillance Manual and TARPs. The construction report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied to the Department; and | | | | 1 | | | | | | 3 | Part Compliance (High) | <p>TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report.</p> <p>TSF Operations, Maintenance and Surveillance (OMS) Manual, 31/07/2020, Version 5.0 Revision following Cell 1 Stage 4 Raise to RL 10,056 m.</p> <p>Email from Operator to Department FW: MRM TSF Cell 1 Stage 4 Raise Construction Report dated 21Oct2020.</p> <p>Letter ICE to Operator subject TSF Cell 1 Stage 4 Raise Construction Report Independent Certifying Engineer (ICE) Endorsement Letter dated 15Oct2020.</p> <p>MRM Tailings Storage Facility Quarterly Report March 2020 – May 2020.</p> <p>Email GHD to Operator RE: TSF Operations Manual Review dated 30Jul2020.</p> <p>Letter ICE to Operator subject TSF Cell 1 Stage 4 Raise Construction Report Independent Certifying Engineer (ICE) Endorsement Letter dated 15Oct2020. states "The Cell 1 Stage 4 raise was completed in accordance with conditions 52 (b) to (c) of Variation of Authorisation 0059-02, dated 10 August 2020 (the VOA). This letter provides ICE approval of the as constructed report, required by condition 52 (d) of the VOA."</p> <p>Construction report: includes hold point signoffs in the Borrow Management Plan MRM TSF Cell 1 Raise-4 and sighted laboratory geotechnical testing listed in Appendix B in 2019 TSF Cell 1 Raise to RL10056m - Lot Register.</p> <p>Note: the term responsible engineer/designer appears to be used. Reviewed and signed by ICE (second last page).</p> <p>OMS: " Section 2.2.3 Responsible Engineer The Responsible Engineer is the professional engineer responsible for verifying that the TSF / WMD is designed, constructed and operated in accordance with best practice and the applicable guidelines, standards and regulations. The Responsible Engineer is also responsible for technical supervision during construction, and should certify that the works have been constructed in conformance with the design, drawings, and specifications." Operations manual includes updated TARPs. Operations manual was updated following Cell 1 Stage 4 Raise to RL 10,056 m.</p> | <p>This condition is only relevant until 13Nov2020.</p> <p>MRM Tailings Storage Facility Quarterly Report March 2020 – May 2020 states "January 2020 Completion of Cell 1 Stage 4 construction." There is no requirement stated in this condition for submission to the Department or timeframes for completion of the as-constructed report, other than it being required "at completion of construction works". Therefore this part of the condition is compliant. Timeframes are included in condition 46.d.</p> <p>While there was no evidence of the ICE signing off on the updated TSF Operations, Maintenance and Surveillance Manual, correspondence relating to a workshop between the Operator, the ICE and ITRB in July 2020 regarding the TSF OMS Manual was provided.</p> <p>No OFI has been prepared because the 13Nov2020 Authorisation does not require the ICE to approve updates to the TSF OMS and TARPs. Condition 50.e of the 13Nov20 Authorisation requires ITRB review comments to be appropriately addressed for future use of the TSF including OMS Manual and TARPs but not ITRB or ICE approval.</p> |
| 52.e | 52.e | | The TSF Cell seepage mitigation system is fully operational and optimised within 12 months of recommencing tailings deposition in Cell 1. | | | | 1 | | | | | | N/A | Not Applicable | | <p>This condition is only relevant until 13Nov2020. Trigger 12 months from January 2020 that falls outside audit period. No longer a condition in the new Authorisation.</p> |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden | Emplacement | Facilities | Exploration | Waterways (including river | diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|------------|-------------|------------|-------------|----------------------------|------------|----------------------------|-------|-------------------------|---|--|
| 56.a | 56.a | | Construction reports including QA and QC data endorsed by the Independent Certifying Engineer (ICE) must be provided to the Department prior to the deposition of tailings within the Cell 2 Raise 5 storage capacity and within 30 days of construction being completed. | | | | | | 1 | | | | | | | | | | 3 | Part Compliance (High) | Sighted MRM Cell 2 TSF Stage 5 Raise to RL 10059m. Sighted email dated 24Aug2020. Construction was completed in 2018 however the as constructed report was not delivered to the DITT until 24Aug2020. MRM TSF Quarterly Report MARCH – MAY 2020. Construction was complete before the audit period. However, the report was submitted in the audit period more than 30 days after construction was completed. This was assessed in the 2020 audit. Part compliance - moderate (due date missed and depositing tailings prior to submission of construction report to DITT). MRM TSF Quarterly Report MARCH – MAY 2020 indicates that deposition was occurring in cell 2 and the as constructed report for Cell 2 TSF Stage 5 Raise to RL 10059m had not been provided to DITT. | This condition is only relevant until 13Nov2020. The Operator advised "The Risk Manager software is primarily used by Glencore Corporate to track safety-related information at each operation globally. MRM has created an Environmental Obligation component to the software which develops registers for each approval (VOA, WDL, EPBC). This allows for actions to be allocated to the relevant people throughout the business, assign due dates which flag to Management if they become overdue, and is able to collate and export information relating to environmental compliance. Updates to several functions have been occurring during 2021 to improve functionality. The Environmental Obligations Register has been operational since 2019, was upgraded mid-2020 and again in late-2021. A screen print out of the action assigned to Condition 56 has been provided. This shows evidence that the action was assigned to the TSF Project Manager to upload the construction report, which is shown at the bottom of the page (dated 14 Nov 2020)." No OFI has been prepared as the Operator has implemented Risk Manager's Environmental Obligations Register, which assigns actions and accountabilities and assists to meet statutory timeframes (eg within 30 days of construction being completed). |
| 57 | 57 | | The operator is authorised to construct, operate and maintain Cell 2 Stage 6 embankment lift in accordance with: | | | | | | | | | | | | | | | | | Refer to sub conditions | This condition is only relevant until 13Nov2020. | |
| 57.a | 57.a | | concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12, ensuring: | | | | | | 1 | | | | | | | | | | 4 | Full Compliance | Email Operator to DITT subject MRM TSF Cell 2 Stage 6 Lift - Detailed Design and ITRB Endorsement dated 2Sep2019 (before audit period). MCARTHUR RIVER MINE ITRB DOCUMENT COMMENT TRACKING REGISTER McArthur River Mining Pty Ltd Cell 2 TSF Stage 6 Raise to RL 10061 Detailed Design Report dated 1Sep2019. MRM TSF Quarterly Report MARCH – MAY 2020. "The Cell 2 Stage 6 raise to RL 10,061 m design was finalised in July 2019 by GHD, and endorsed by the Independent Tailings. Review Board (ITRB). Construction of the Cell 2 Stage 6 raise was subsequently approved by DPIR under VOA 0059-02 (15 August 2019) and commenced on 3 September 2019, upon receipt of the ITRB endorsement. Embankment raise works were completed on 26 May 2020, and the Cell 2 Stage 2 buttress works are ongoing as of 31 May 2020 and are expected to be completed in the 2021 dry season." No inconsistencies with the MMP were observed. | This condition is only relevant until 13Nov2020. Condition 77 in the 13Nov2020 Authorisation is equivalent for construction but does not mention operate or maintain. Condition 77 in the 13Nov2020 Authorisation says develop. The Operator advised "In line with the January 2020 MMP, the following construction activities occurred over the reporting period: • Completion of Cell 2 Stage 6 – 2 m upstream raise to RL 10,061. • Completion of Cell 1 Stage 5 – 3 m upstream raise to RL 10,059. • Completion of the Surprise Creek Seepage Interception Trench. Construction works were completed consistent with the approved designs, the TSF Raising - General Specification for Design and Construction (Appendix I of the January 2020 MMP), and the overall Life of Mine philosophy." The Operator advised the Independent Monitor "Cell 2 Stage 6 was completed May 2020, excluding some buttress works. There is one layer to complete on one section of the wall. MRM will be working towards the construction report for this once complete." |
| 57.a.i | 57.a.i | | Detailed designs follow the approved McArthur River Mining Pty Ltd Tailings Storage Facility Raising General Specification for Design and Construction and must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives; | | | | | | 1 | | | | | | | | | | 4 | Full Compliance | Email Operator to DITT subject MRM TSF Cell 2 Stage 6 Lift - Detailed Design and ITRB Endorsement dated 2Sep2019 (before audit period). MCARTHUR RIVER MINE ITRB DOCUMENT COMMENT TRACKING REGISTER McArthur River Mining Pty Ltd Cell 2 TSF Stage 6 Raise to RL 10061 Detailed Design Report dated 1Sep2019 (before audit period). Cell 2 Raise 6 Embankment Construction Checklist dated 23May20 (buttress west) Cell 2 Raise 6 Embankment Construction Checklist dated 9Apr20 EMR 2020 -2021 section 2.7.2 "In line with the January 2020 MMP, the following construction activities occurred over the reporting period: • Completion of Cell 2 Stage 6 – 2 m upstream raise to RL 10,061. • Completion of Cell 1 Stage 5 – 3 m upstream raise to RL 10,059. • Completion of the Surprise Creek Seepage Interception Trench. Construction works were completed consistent with the approved designs, the TSF Raising - General Specification for Design and Construction (Appendix I of the January 2020 MMP), and the overall Life of Mine philosophy." The two Cell 2 Raise 6 Embankment Construction Checklists provided shows sign off by the resident engineer and the Operator advised "the examples provided are hold point sign-offs for each layer of each lot". | This condition is only relevant until 13Nov2020. Condition 77 of 13Nov2020 Authorisation includes reference to detailed design but not anything about environmental performance, hold points. The Operator advised "Cell 2 Stage 6 was completed May 2020, excluding some buttress works. There is one layer to complete on one section of the wall. MRM will be working towards the construction report for this once complete." The MRM TSF Cell 2 Stage 6 Lift - Detailed Design report includes evaluation of dam safety and environmental risks as recommended by ANCOLD (2012a), and presents strategies to manage and mitigate risk. A risk matrix is attached to the LOM Report that is consistent with the overall Operator EIS approach, and consists of implementing a 'likelihood and consequence' risk matrix, determining the rating for each identified risk, the control measures used to mitigate that risk, and then an assessment of the residual rating after taking these control measures into account. Section 7 discusses critical issues pertaining to construction, design validation, performance and the ongoing dam safety program for the Stage 6 Cell 2 TSF. Section 2.4 Engineering Hold Points of the TSF Cell 2 Embankment Raise - RL10061m Technical Specification September 2019, revision 0 states "Mandatory Engineering Hold Points shall include those specified to ensure compliance with the intent of the designs and with other specified requirements, and to ensure that critical and/or irreversible activities are not constructed incorrectly." |
| 57.a.ii | 57.a.ii | | The detailed designs must be reviewed and endorsed by the ITRB provided to the department prior to commencement of construction; and | | | | | | 1 | | | | | | | | | | N/A | Not Applicable | Enclosure 1 – ITRB Review and Endorsement (INDEPENDENT TAILINGS REVIEW BOARD (ITRB) - DOCUMENT COMMENT TRACKING REGISTER 1 September 2019). Ltr-DPIR (ITRB Endorsement Cell 2 Stage 6). ITRB endorsement - GHD's Draft Detailed Design Report for the McArthur River Mining Pty Ltd (MRM) Cell 2 TSF Stage 6 Raise to RL 10061 is endorsed by the ITRB as more than adequate. The Cell 2 TSF Stage 6 Raise to RL 10061 report included detailed design drawings. The ITRB endorsement was provided to DPIR on 02Sep2019 according to the evidence provided. Operator advised construction commenced on 03Sep2019. | Before the audit period. |
| 57.a.iii | 57.a.iii | | Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ITRB must provide and implement a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department. | | | | | | 1 | | | | | | | | | | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. Operator advised no modifications were made. |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

Governance/General
 Non-mineral Waste Management
 Open Pit/Underground Workings
 Tailings Storage Facility
 Water Management and Storages
 Overburden Placement Facilities
 Exploration
 Waterways (including river diversion)
 Bing Bong Loading Facility

Score

Compliance Level

Evidence

Comments

| | | | | | | | | | | | | | | | | | | |
|------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|-------------------------|---|---|
| 57.b | 57.b | At completion of the construction works the ICE must approve an "as constructed" construction report and updates to the TSF Operations, Maintenance and Surveillance Manual and TARP. The construction report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied to the Department prior to the deposition of tailings. | | | | | | | | | | | | | N/A | Not Applicable | The Operator advised the Independent Monitor "Cell 2 Stage 6 was completed May 2020, excluding some buttress works. There is one layer to complete on one section of the wall. MRM will be working towards the construction report for this once complete." However, the EMR 2020 - 2021 states "In line with the January 2020 MMP, the following construction activities occurred over the reporting period: • Completion of Cell 2 Stage 6 – 2 m upstream raise to RL 10,061." | This condition is only relevant until 13Nov2020. Condition 50 in the 13Nov2020 Authorisation is similar but for the ITRB instead of for the ICE. Completion of construction information is inconsistent between the RFI (not complete) and EMR (completed), which impacts the timing of the as constructed report and therefore potential part compliance during the audit period. The Independent Monitor was advised that the construction report will be prepared following construction completion. |
| | | From the date of authorisation of the Overburden Management Project, tailings must be managed in accordance with the following: | | | | | | | | | | | | | | Refer to sub conditions | | |
| | | be deposited only in Cell 1, Cell 2 or combined Cell 1 and Cell 2; | | | | | | | | | | | | | | | MRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020. MRM Tailings Storage Facility Quarterly Report September 2020 – November 2020 checked by the Independent Monitor and compliance evident based on "The TSF domain is shown in Figure 2-1, and includes the following: • Cell 2, currently operational tailings storage cell. • Cell 1, currently operational tailings storage cell. • Water Management Dam (WMD) (also referred to as Cell 3), the treated water storage dam. The WMD is situated to the south of Cell 2." | |
| | | any construction of tailings lift, as approved in Condition 79, be reviewed and endorsed by independent oversight requirements in Condition 48 and 50 or an alternative independent qualified and experienced third party approved by the Department in writing; | | | | | | | | | | | | | | | Refer to compliance scored in conditions 48 and 50. MRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020. MCARTHUR RIVER MINING Tailings Storage Facility Cell 2 Stage 7 Raise to RL 10063 m ITRB 19Feb2021. Email Operator to DITT subject MRM TSF Cell 2 Stage 6 Lift - Detailed Design and ITRB Endorsement dated 2Sep2019 (before audit period). MCARTHUR RIVER MINE ITRB DOCUMENT COMMENT TRACKING REGISTER McArthur River Mining Pty Ltd Cell 2 TSF Stage 6 Raise to RL 10061 Detailed Design Report dated 1Sep2020. MCARTHUR RIVER MINE ITRB DOCUMENT COMMENT TRACKING REGISTER TSF Cell 1 Stage 5 – Raise to RL 10059, Detailed Design Report dated June 2020. Email DITT to Operator subject FW: MRM TSF Cell 2 Raise 7 - Detailed Design and ITRB Endorsement dated 13Apr2021. | |
| | | construction of the TSF lifts is undertaken in accordance with a valid AAPA certificate; | | | | | | | | | | | | | | | AAPA Cert - C2004_014. AAPA Cert requires overburden storage with a maximum height of 80 m. It does not specify a datum. | The Operator advised that the excavation permits include reference to the AAPA certificate relevant to a TSF lift. Sighted map of different access areas showing blue AAPA certificate exists for works. Orange and red areas not approved. Ground disturbance permit reviews activity against AAPA certificates. Requires community team sign off. Sighted the section that included an APPA certificate number. AAPA certificate includes GIS layer. Community team are responsible for AAPA certificate signoff. All loaders, etc are GPS capable and can see where to work within the bounds. Ground Disturbance permit includes a sign off for completion. Surveyors measure the height of the NOEF to ensure it is not above the height of Barramundi Dreaming annually (MRM NOEF Compliance - Compliance report highlighting the construction height restrictions of the NOEF in relation to the Barramundi Dreaming). MRM NOEF Compliance - Compliance report highlighting the construction height restrictions of the NOEF in relation to the Barramundi Dreaming states "Maximum RL of NOEF is 112.5541m, which is 3,501 below RL max of Barramundi Dreaming (116.0551m). Measurements were taken on 24/04/2021 using high precision GPS methods." |
| | | the TSF Seepage Interception Trench is fully operational by end of December 2020; | | | | | | | | | | | | | | | MRM TSF Quarterly Report - September to November 2020 DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) MRM TSF Quarterly Report - September to November 2020 in the executive summary "The following major construction works were completed during the reporting period: • Surprise Creek Seepage Interception Trench, which commenced on 15 August 2020 and was completed on 5 November 2020." DITT Site Inspection Report dated 3Feb2021 "TSF seepage interception trench was fully operational as required under Authorisation 0059;" and as this site inspection was on 2Dec2020 this condition scores full compliance. | The Independent Monitor was advised by the Operator that "The construction of the Surprise Creek Interception Trench was complete on 5 November 2020." |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden | Placement | Facilities | Exploration | Waterways (including river | diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|------------|-----------|------------|-------------|----------------------------|------------|----------------------------|-------|-------------------------|---|--|
| | | 76.e | in the event that future review of the designs or as-built structure by independent experts require additional matters to be addressed, the Operator together with the ICE must provide a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department. | | | | | | 1 | | | | | | | | | | 4 | Full Compliance | Email DITT to Operator subject FW: MRM TSF Cell 2 Raise 7 - Detailed Design and ITRB Endorsement dated 13Apr2021. | Cell 2 raise 7 was increased from 10,061.5 m relative level (RL) to 10,063 mRL. Endorsement was obtained from the ITRB on the change and it was submitted to DITT. Email DITT to Operator subject FW: MRM TSF Cell 2 Raise 7 - Detailed Design and ITRB Endorsement dated 13Apr2021 states "DITT acknowledges receipt of the documentation in relation to the TSF Cell 2, Stage 7 raise, in accordance with Authorisation 0059. In accordance with 0059, MRM may begin construction of the above lift." |
| TSF Cell 1 and 2 Construction | | | | | | | | | | | | | | | | | | | | | | |
| | | 77 previously 52, 58, (changed) | From the date of authorisation of the Overburden Management Project, the Operator is approved to develop TSF Cell 1, Cell 2 and Combined Cell 1 and 2 lifts in accordance with: | | | | | | 1 | | | | | | | | | | 4 | Full Compliance | MRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020. | Table 18 MMP. |
| | | 77.a | McArthur River Mining Pty Ltd, Tailings Storage Facility, Design Development – Life of Mine Plan, May 2017, as defined in Schedule B; | | | | | | 1 | | | | | | | | | | 4 | Full Compliance | EMR 2020 -2021. MCARTHUR RIVER MINING Tailings Storage Facility Cell 2 Stage 7 Raise to RL 10063 m. ITRB dated 19Feb2021. EMR 2020 -2021 section 2.7.2 "In line with the January 2020 MMP, the following construction activities occurred over the reporting period: • Completion of Cell 2 Stage 6 – 2 m upstream raise to RL 10,061. • Completion of Cell 1 Stage 5 – 3 m upstream raise to RL 10,059. • Completion of the Surprise Creek Seepage Interception Trench. Construction works were completed consistent with the approved designs, the TSF Raising - General Specification for Design and Construction (Appendix I of the January 2020 MMP), and the overall Life of Mine philosophy." MCARTHUR RIVER MINING Tailings Storage Facility Cell 2 Stage 7 Raise to RL 10063 m. ITRB dated 19Feb2021. "The proposed future development of the MRM TSF has been set out in the TSF Life of Mine (LOM) Plan and is summarised in the subject report. This outlines the staged development of Cells 1 and 2 though to the end of production in 2040. The raising of Cell 2 by the construction of the Stage 7 Raise to RL 10063 m in 2021 is in line with the LOM Plan." | The Operator advised that this is undertaken through detailed design process and is verified in the as constructed report. |
| | | 77.b | the approved MMP for the following stages: | | | | | | | | | | | | | | | | | Refer to sub conditions | | |
| | | 77.b.ii | Cell 1 Raise 4 – 10,056.0 mRL; | | | | | | 1 | | | | | | | | | | N/A | Not Applicable | Email from Operator to DITT FW: MRM TSF Cell 1 Stage 4 Raise Construction Report dated 21Oct20. Letter ICE to Operator subject TSF Cell 1 Stage 4 Raise Construction Report Independent Certifying Engineer (ICE) Endorsement Letter dated 15Oct2020. MRM Tailings Storage Facility Quarterly Report March 2020 – May 20. MRM Tailings Storage Facility Quarterly Report March 2020 – May 2020 states "January 2020 Completion of Cell 1 Stage 4 construction." so the works were completed before the audit period. Letter ICE to Operator subject TSF Cell 1 Stage 4 Raise Construction Report Independent Certifying Engineer (ICE) Endorsement Letter dated 15Oct2020. states "The Cell 1 Stage 4 raise was completed in accordance with conditions 52 (b) to (c) of Variation of Authorisation 0059-02, dated 10 August 2020 (the VOA). This letter provides ICE approval of the as constructed report, required by condition 52 (d) of the VOA." | Historic item. Works completed before the audit period. |
| | | 77.b.ii | Cell 1 Raise 5 – 10,059.0 mRL; | | | | | | 1 | | | | | | | | | | 4 | Full Compliance | EMR 2020 -2021. MRM TSF Cell 1 Raise 5 to RL 10059.0 m Hold Point Release Form- Buttress Foundation. MRM 20.08.18 Weekly TSF Construction Report. Cell 1 Stage 5 - Layer Checklist. | EMR 2020 -2021 section 2.7.2 "In line with the January 2020 MMP, the following construction activities occurred over the reporting period: • Completion of Cell 2 Stage 6 – 2 m upstream raise to RL 10,061. • Completion of Cell 1 Stage 5 – 3 m upstream raise to RL 10,059. • Completion of the Surprise Creek Seepage Interception Trench. Construction works were completed consistent with the approved designs, the TSF Raising - General Specification for Design and Construction (Appendix I of the January 2020 MMP), and the overall Life of Mine philosophy." |
| | | 77.b.iii - previously 57 changed | Cell 2 Raise 6 – 10,061.0 mRL; | | | | | | 1 | | | | | | | | | | 4 | Full Compliance | EMR 2020 -2021. Cell 2 Stage 6 - Layer Checklist. MRM 20.08.18 Weekly TSF Construction Report. | EMR 2020 -2021 section 2.7.2 "In line with the January 2020 MMP, the following construction activities occurred over the reporting period: • Completion of Cell 2 Stage 6 – 2 m upstream raise to RL 10,061. • Completion of Cell 1 Stage 5 – 3 m upstream raise to RL 10,059. • Completion of the Surprise Creek Seepage Interception Trench. Construction works were completed consistent with the approved designs, the TSF Raising - General Specification for Design and Construction (Appendix I of the January 2020 MMP), and the overall Life of Mine philosophy." |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Placement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

| | | | | | | | | | | | | | | | | | |
|-----------------------|--|--------------------|--|--|--|--|--|--|--|--|--|--|--|-----|-------------------------|--|---|
| | | 77.b.iv | Cell 2 Raise 7 – 10,061.5 mRL; | | | | | | | | | | | 4 | Full Compliance | Email DITT to Operator subject FW: MRM TSF Cell 2 Raise 7 - Detailed Design and ITRB Endorsement dated 13Apr2021. Technical Working Group record 25Mar2021. Cell 2 raise 7 was increased from 10,061.5 m relative level (RL) to 10,063 mRL. Endorsement was obtained for ITRB on change and submitted to Regulator with approval from the regulator in email DITT to Operator subject FW: MRM TSF Cell 2 Raise 7 - Detailed Design and ITRB Endorsement dated 13Apr2021. The email stated "DITT acknowledges receipt of the documentation in relation to the TSF Cell 2, Stage 7 raise, in accordance with Authorisation 0059. In accordance with 0059, MRM may begin construction of the above lift." | Design (including changes) was approved by DITT 13Apr2021 towards the end of the audit period. Technical Working Group record 25Mar2021 states "MRM intend to increase the Cell 2, Raise 7 lift on the TSF from 10,061.5 m relative level (RL) to 10,063.0 mRL (i.e. an increase of 1.5 m). * Action – MRM to provide the detailed design for the Cell 2, Stage 7 lift, and endorsement from the Independent Tailings Review Board (ITRB) to the DITT of Industry, Tourism and Trade (DITT) for approval prior to commencing construction." |
| | | 77.b.v | Combined Cell 1 and 2 Raise 1 – 10,062.6 mRL; | | | | | | | | | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.vi | Combined Cell 1 and 2 Raise 2 – 10,063.8 mRL; | | | | | | | | | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.vii | Combined Cell 1 and 2 Raise 3 – 10,065.0 mRL; | | | | | | | | | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.viii | Combined Cell 1 and 2 Raise 4 – 10,066.2 mRL; | | | | | | | | | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.ix | Combined Cell 1 and 2 Raise 5 – 10,067.4 mRL; | | | | | | | | | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.x | Combined Cell 1 and 2 Raise 6 – 10,068.6 mRL; | | | | | | | | | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xi | Combined Cell 1 and 2 Raise 7 – 10,069.8 mRL; | | | | | | | | | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xii | Combined Cell 1 and 2 Raise 8 – 10,071.0 mRL; | | | | | | | | | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xiii | Combined Cell 1 and 2 Raise 9 – 10,072.2 mRL; | | | | | | | | | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xiv | Combined Cell 1 and 2 Raise 10 – 10,073.4 mRL; | | | | | | | | | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xv | Combined Cell 1 and 2 Raise 11 – 10,074.6 mRL; | | | | | | | | | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xvi | Combined Cell 1 and 2 Raise 12 – 10,075.8 mRL; | | | | | | | | | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xvii | Combined Cell 1 and 2 Raise 13 – 10,077.0 mRL; | | | | | | | | | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 77.b.xviii | Combined Cell 1 and 2 Raise 14 – 10,078.0 mRL. | | | | | | | | | | | N/A | Not Applicable | | Not included in the EMR 2020 -2021 |
| | | 78 | For each lift, the Operator must ensure detailed designs follow the approved McArthur River Mining Pty Ltd Tailings Storage Facility Raising General Specification for Design and Construction; with oversight provided by the ICE consistent with Condition 48. | | | | | | | | | | | 4 | Full Compliance | Email DITT to Operator subject FW: MRM TSF Cell 2 Raise 7 - Detailed Design and ITRB Endorsement dated 13Apr2021. Cell 2 raise 7 was increased from 10,061.5 m relative level (RL) to 10,063 mRL. Endorsement was obtained for ITRB on change and submitted to Regulator with approval from the regulator in email DITT to Operator subject FW: MRM TSF Cell 2 Raise 7 - Detailed Design and ITRB Endorsement dated 13Apr2021. The email stated "DITT acknowledges receipt of the documentation in relation to the TSF Cell 2, Stage 7 raise, in accordance with Authorisation 0059. In accordance with 0059, MRM may begin construction of the above lift." | The Operator advised that the detailed designs are written by the ICE. "GHD's Draft Detailed Design Report for the McArthur River Mining Pty Ltd (MRM) TSF Cell 1 Stage 5 Raise to RL 10059 was endorsed by the ITRB as more than adequate on the 02/07/2020." |
| TSF Management | | | | | | | | | | | | | | | | | |
| | | 79 - previously 54 | The Operator must operate and maintain the TSF in accordance with the most up-to-date TSF Operations Maintenance and Surveillance manual, ensuring: | | | | | | | | | | | 4 | Full Compliance | 21/07/31 Daily Monitoring Sheet. MRM TSF Quarterly Report - September to November 2020. EMR 2020 - 2021 EMR 2020 - 2021 section 2.7.1 states "Tailings were placed using the installed spigot discharge system around the Cell 1 and Cell 2 perimeters, as per the designs and TSF operational guidelines. A total of 3,778,265 t of tailings were deposited into the TSF during the reporting period." | |
| | | 79.a | no discharge of water into the TSF unless | | | | | | | | | | | | Refer to sub conditions | | |
| | | 79.a.i | it is water contained within the Tailings stream which is at normal operational slurry densities; or | | | | | | | | | | | 4 | Full Compliance | 21/07/31 Daily Monitoring Sheet. MRM TSF Quarterly Report - September to November 2020. MRM TSF Quarterly Report - September to November 2020 states "Figure 3-4 provides daily density readings for the tailings slurry pumped to the TSF over the reporting period. The densities were primarily in the operational target density of between 50 and 55% for September and October, with some densities between 45 – 50% in November. The lower reported densities in November were primarily due to inaccuracies with online instrumentation monitoring and is currently under investigation." Independent Monitor confirms the daily monitoring sheet included density. | The Operator advised "Both density and water level are monitored daily. Density and the water level in Cell 2 are also monitored remotely and in real-time." |
| | | 79.a.ii | It is endorsed by the ITRB; | | | | | | | | | | | N/A | Not Applicable | | Operator advised the IM that there were no additional discharges so no approval by the ITRB was required. |
| | | 79.b | all Tailings are deposited sub-aerially to allow proper beaching and drying between deposition cycles; | | | | | | | | | | | 4 | Full Compliance | TSF Operations Maintenance and Surveillance Manual version 5 (revised 31Jul2020). EMR 2020 -2021. TSF OMSM in section 4.1 states "The tailings slurry is deposited via three 355 mm OD pipelines that run around the perimeter of the two TSF cells, with the tailings delivered sub-aerially through offtake spigots located at approximately 50 m intervals." EMR 2020 - 2021 section 2.7.1 states "Tailings were placed using the installed spigot discharge system around the Cell 1 and Cell 2 perimeters, as per the designs and TSF operational guidelines. A total of 3,778,265 t of tailings were deposited into the TSF during the reporting period." | The Operator advised "MRM deposit from a perimeter pipe with spigots that develop a beach with decant water in the centre. Sub-aerial deposition is the name of this method." |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Placement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

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| | | 79.c | surface water levels are maintained in the TSF such that they do not come into contact with the embankment internal walls; | | | | 1 | | | | | | 4 | Full Compliance | 21/07/31 Daily Monitoring Sheet. Email from Cross-solutions to Operator subject Cell 1 and 2 water levels dated 31Jul2021 (outside audit period). TSF Operations Maintenance and Surveillance Manual version 5 (revised 31Jul2020). Independent Monitor confirms the daily monitoring sheet included surface water level. TSF Operations Maintenance and Surveillance Manual version 5 (revised 31Jul2020) includes TARPS for Cell 2 and the WMD with cell 1 TARPS pending construction completion. | The Operator advised "Both density and water level are monitored daily. Density and the water level in Cell 2 are also monitored remotely and in real-time." The Operator advised "The Cell 1 water level is currently picked up daily by surveyors. An example email is attached (refer to Cell 1 and 2 water levels email). Note: Cell 2 level is currently also being picked up because MRM have had to remove the sensor due to construction currently occurring, this is also why the reading is not recorded on the daily sheet." |
| | | 79.d | phreatic surface is managed to avoid compromising the integrity of the embankment. | | | | 1 | | | | | | 4 | Full Compliance | TSF Operations Maintenance and Surveillance Manual version 5 (revised 31Jul2020) 21/07/31 Daily Monitoring Sheet. Email from Cross-solutions to Operator subject Cell 1 and 2 water levels dated 31Jul2021 (outside audit period). Table 4-6 of the TSF OMS includes "Maintain as small a decant pond as possible" to "Reduce pore pressures / phreatic surface level in the embankment and reduce the risk of embankment stability". Table 5-13 states "7 x wick drains with piped outlets were installed in the Cell 1 Stage 3 construction process, designed to control the phreatic surface. These drains are monitored daily (dry, damp or flowing), and have historically responded seasonally. Flow has always remained clear." Independent Monitor confirms the daily monitoring sheet included surface water level. EMR 2020- 2021 section 2.7.1 states "The design philosophy of the TSF, as outlined in the January 2020 MMP, is as follows: reduce seepage from the TSF by maintaining a small decant pond, and through optimised tailings management to remove surface water by evaporation. This also assists in controlling pore water pressures in the tailings adjacent to the perimeter embankments." and "The design philosophy was achieved through operational controls throughout the reporting period". | |
| | | 80 - previously 55 | The Operator must provide quarterly to the Minister a written status report on the seepage and management of seepage from the TSF, including the following: | 1 | | | 1 | | | | | | 4 | Full Compliance | MRM TSF Quarterly Report - December 2020 to February 2021 submitted 19Apr21. MRM TSF Quarterly Report - March 20 to May 20_Rev 1 cover letter dated 14Sep20. MRM TSF Quarterly Report - June 20 to August 20_FINAL submitted 26Nov20. MRM TSF Quarterly Report - September to November 2020 submitted 22Feb21. Email Operator to DITT subject FW: MRM TSF Quarterly Report December 2020 to February 2021 dated 19Apr2021. Email Operator to DITT subject MRM TSF Quarterly Report June to August 2020 dated 26Nov2020. Email Operator to DITT subject RE MRM TSF Quarterly Report September to November 2020 dated 22Feb2021. Email DITT to Operator subject RE MRM TSF Quarterly Report September to November 2020 dated 23Feb2021. | |
| | | 80.a | water levels in the TSF; | | | | 1 | | | | | | 4 | Full Compliance | MRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020. Email Operator to DITT subject FW: MRM TSF Quarterly Report December 2020 to February 2021 dated 19Apr2021. Email Operator to DITT subject MRM TSF Quarterly Report June to August 2020 dated 26Nov2020. Email Operator to DITT subject RE MRM TSF Quarterly Report September to November 2020 dated 22Feb2021. Email DITT to Operator subject RE MRM TSF Quarterly Report September to November 2020 dated 23Feb2021. MRM Tailings Storage Facility Quarterly Report September 2020 – November 2020 checked by the Independent Monitor and compliance is evident based on average levels in the TSF in Table 3-1. There are also graphs of water levels in the decant ponds in section 3.2.1. | |
| | | 80.b | all monitoring data associated with the seepage (including geotechnical and environmental monitoring); | | | | 1 | | | | | | 4 | Full Compliance | MRM TSMRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020F. MRM TSF Quarterly Report - September to November 2020 "Water quality results during the reporting period remained within the range of the previous 12 months of data, with no unexpected results detected. Water quality of the Water Management Dam remained of suitable quality for discharge in accordance with Waste Discharge Licence 174-11." MRM TSF Quarterly Report - September to November 2020F Section 3.3 includes water quality data. | |

Authorisation Compliance Workbook - Operator

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

Governance/General
 Non-mineral Waste Management
 Open Pit/Underground Workings
 Tailings Storage Facility
 Water Management and Storages
 Overburden Placement Facilities
 Exploration
 Waterways (including river diversion)
 Bing Bong Loading Facility

Score

Compliance Level

Evidence

Comments

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| | | 80.c | flow rate of each seep; | | | | 1 | | | | | | 4 | Full Compliance | MRM TSMRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020F. MRM Tailings Storage Facility Quarterly Report September 2020 – November 2020 checked by the Independent Monitor and compliance is evident based on seepage management Section 3.2.2 that includes seepage flow rates. | |
| | | 80.d | all actions undertaken during the quarter associated with the seepage and management of Tailings; | | | | 1 | | | | | | 4 | Full Compliance | MRM TSMRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020F. MRM TSF Quarterly Report - September to November 2020F includes Attachment B - TSF Recommendation Instruction and Action Register that meets the requirements of this condition. | |
| | | 80.e | all actions planned for the next quarter associated with seepage and management of Tailings.[1] | | | | 1 | | | | | | 4 | Full Compliance | MRM TSMRM TSF Quarterly Report - December 2020 to February 2021. MRM TSF Quarterly Report - March 20 to May 20_Rev 1. MRM TSF Quarterly Report - June 20 to August 20_FINAL. MRM TSF Quarterly Report - September to November 2020F. MRM TSF Quarterly Report - September to November 2020F includes Attachment B - TSF Recommendation Instruction and Action Register that meets the requirements of this condition. MRM TSF Quarterly Report - September to November 2020F includes TABLE 3-3. ONGOING OPERATIONAL ACTIONS 2020. | |
| | 58 | | The operator is authorised to construct, but not operate Cell 1 Stage 5 embankment lift in accordance with: | | | | 1 | | | | | | | Refer to sub conditions | | |
| | 58.a | | concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2020, Version 1.0 as defined in Condition 1.(ii)(13), ensuring: | | | | 1 | | | | | | | Refer to sub conditions | | This condition is covered in condition 77 of the 13Nov2020 Authorisation as raise 5. It is included here for context only for other subconditions. |
| | 58.a.i | | Detailed designs follow the approved McArthur River Mining Pty Ltd Tailings Storage Facility Raising General Specification for Design and Construction and must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives; | | | | 1 | | | | | | 4 | Full Compliance | MRM TSF Quarterly Report - September to November 2020 MRM TSF Quarterly Report - September to November 2020 section 4.2 states "The TSF Cell 1 Stage 5 design includes a 3 m embankment raise to RL 10,059 m, along with a small buttress / toe weighting berm. The design was completed in June 2020, and endorsed by the ITRB on 2 July 2020. DITT issued VOA 0059-02, dated 10 August 2020, which approved the Cell 1 Stage 5 raise construction under the 2001 Mining Management Act. Construction works commenced on 12 August 2020. The embankment bulk earthworks were completed during the reporting period. The buttress / toe weighting berm will be completed in December 2020." | This condition is only relevant until 13Nov20. Condition 77 of the 13Nov2020 Authorisation includes reference to detailed design but not anything about "environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives." |
| | 58.a.ii | | The detailed designs must be reviewed and endorsed by the ITRB and provided to the Department prior to commencement of construction; and | | | | 1 | | | | | | 4 | Full Compliance | GHD's Draft Detailed Design Report for the McArthur River Mining Pty Ltd (MRM) TSF Cell 1 Stage 5 Raise to RL 10059 was endorsed by the ITRB as more than adequate on the 02/07/20. Email Operator to DITT subject MRM TSF Cell 1 Stage 5 Lift - Detailed Design and ITRB Endorsement dated 7Jul20 Evidence of submission to DITT on 7/07/20 has been provided. | This condition is only relevant until 13Nov20. |
| | 58.a.iii | | Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ITRB must provide and implement a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department. | | | | 1 | | | | | | N/A | Not Applicable | | This condition is only relevant until 13Nov20. Similar to conditions 50 and 76 of the 13Nov20 Authorisation. However, this condition requires action by the ITRB while the others are actions for the ICE. There were changes made to the Cell 2 stage 7 lift in the audit period, which are audited for the period after 13Nov20 so not included in this condition. |
| | 58.b | | at completion of the construction works the ICE must approve an "as constructed" construction report and updates to the TSF Operations, Maintenance and Surveillance Manual and TARPs. The construction report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied to the Department. | | | | 1 | | | | | | N/A | Not Applicable | | This condition is only relevant until 13Nov20. Discontinued condition and construction was not complete until the new Authorisation was in effect. |

Geochemical, Geotechnical and Hydrogeological Assessments and Investigation Drilling

15 Aug 2019 Authorisation Condition No.
 10 Aug 2020 Authorisation Condition No.
 13 Nov 2020 Authorisation Condition No.

Condition/Requirement

Governance/General
 Non-mineral Waste Management
 Open Pit/Underground Workings
 Tailings Storage Facility
 Water Management and Storages
 Overburden Emplacement Facilities
 Exploration
 Waterways (including river diversion)
 Bing Bong Loading Facility

Score

Compliance Level

Evidence

Comments

| 60 | 61 | 81 - previously 59 | | | | | | | | | | | | | | | | |
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| | | | All documentation relating to the geochemical assessment and alluvial investigation is to be made available to the Department on request. | 1 | | | | | | | | | | | | N/A | Not Applicable | <p>This condition is only relevant until 13Nov20.</p> <p>Operator advised there have not been requests from the DITT.</p> |
| | | 81 - previously 59 | The Operator is authorised to undertake Drilling Investigations as outlined in relevant approved plans defined in Schedule B and approved MMP, ensuring adherence to industry best practice: | | | | | | | | | 1 | | | | 4 | Full Compliance | <p>2020-21 EMR - Appendix T - 2020 Hydrogeological Drilling and Field Campaign. January 2020 MMP.</p> <p>The Operator advised "The 2020 Hydrogeological Drilling and Field Campaign was undertaken in accordance with the approved January 2020 Mining Management Plan,"</p> <p>Section 4.2.1 of the January 2020 MMP "These activities will be used to investigate aspects such as:</p> <ul style="list-style-type: none"> ore and waste sequencing; waste characterisation; resource definition; alluvium characterisation; and potential mineralisation within and external to the existing operational areas." <p>The executive summary of the EMR 2020 - 2021 stated "Exploration activities and a regional drilling program for hydrogeological testing, characterisation of overburden and the installation of geotechnical and environmental monitoring sites." and section 2.2 "MRM undertook a series of regional drilling programs during the reporting period within MLN 1121, MLN 1122, MLN 1123, and MLN 1124, which included 20 drill holes for waste characterisation, geotechnical investigation, and resource development (Appendix A). MRM completed a total of 4,697 metres (m) of drilling, comprising 15 diamond core holes, 2 diamond tailed RC holes and 3 RC holes.</p> <p>The drilling program was designed to:</p> <ul style="list-style-type: none"> develop mineral resources and waste characterisation within the Life of Mine Open Pit; investigate geological structures and rock strengths throughout the Life of Mine Open Pit and immediately adjacent; and install vibrating wire piezometers (VWP) along the western wall of the Open Pit". <p>The Independent Monitor did not observe anything in the EMR 2020 - 2021 to contradict that the campaign was conducted in accordance with plans defined in Schedule B, including the January 2020 MMP.</p> |
| | | 81.i | in order to collect samples for waste rock characterisation and geochemical and geotechnical analyses; | | | | | | | | | 1 | | | | 4 | Full Compliance | <p>January 2020 MMP.</p> <p>Section 4.2.1 of the January 2020 MMP "These activities will be used to investigate aspects such as:</p> <ul style="list-style-type: none"> ore and waste sequencing; waste characterisation; resource definition; alluvium characterisation; and potential mineralisation within and external to the existing operational areas." <p>Refer additional comments in condition 81 above.</p> |
| | | 81.ii | to characterise available construction and rehabilitation materials available within the Mine Levee Wall (including the pit) and areas surrounding the TSF and NOEF; | | | | | | | | | 1 | | | | 4 | Full Compliance | <p>January 2020 MMP.</p> <p>Section 4.2.1 of the January 2020 MMP "These activities will be used to investigate aspects such as:</p> <ul style="list-style-type: none"> ore and waste sequencing; waste characterisation; resource definition; alluvium characterisation; and potential mineralisation within and external to the existing operational areas." <p>Refer additional comments in condition 81 above.</p> |
| | | 81.iii | to enable geochemical assessment of the overburden emplacement facility and underlying sediments; | | | | | | | | | 1 | | | | 4 | Full Compliance | <p>January 2020 MMP.</p> <p>Section 4.2.1 of the January 2020 MMP "These activities will be used to investigate aspects such as:</p> <ul style="list-style-type: none"> ore and waste sequencing; waste characterisation; resource definition; alluvium characterisation; and potential mineralisation within and external to the existing operational areas." <p>Refer additional comments in condition 81 above.</p> |
| | | 81.iv | to obtain hydrogeological information associated with pit inflows, groundwater inputs into the underground void and installation of additional monitoring bores to inform site management. | | | | | | | | | 1 | | | | 4 | Full Compliance | <p>EMR 2020 - 2021 - Appendix T - 2020 Hydrogeological Drilling and Field Campaign.</p> <p>The Independent Monitor was advised by the Operator that the characterisation data is the bore logs in EMR 2020 - 2021 - Appendix T - 2020 Hydrogeological Drilling and Field Campaign.</p> <p>EMR 2020 - 2021 - Appendix T - 2020 Hydrogeological Drilling and Field Campaign "The overall objective of the 2020 hydrogeological drilling and field program was to continue to further characterise the groundwater systems at the Mine, quantify aquifer parameters and further refine the groundwater component of the source-pathway-receptor model to better understand potential impacts form MRM's operations on the receiving environment. and Table 1-1 refers to installation of monitoring bores as a target and objective."</p> <p>Refer additional comments in condition 81 above.</p> |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Placement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

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|-------------|--|--------------------|--|---|--|--|--|--|--|--|--|--|--|--|-----|-------------------------|---|--|
| | | 82 | The Operator must ensure the disturbances from the drilling and site investigation activities are rehabilitated consistent with industry best practice. | | | | | | | | | | | | 3 | Part Compliance (High) | Exploration Management Plan SPC-3100001 May 2021, Version 2. (after audit period) Permit to Clear Procedure. Excavation and Trenching Procedure. | Exploration Management Plan SPC-3100001 May 2021, Version 2 "Section 4.1 of the Exploration Management Plan states Rehabilitation requirements. Requirements can include (but not limited to): - Drill holes encountering multiple or confined aquifers will be grouted with concrete; - Drill samples/spoil will be returned down drill holes, buried in sumps, or removed from site;" The Operator advised "In the new permit system, which was rolled out last year, the permit holder of the respective permit is required to sign off on a post site inspection. The purpose for the post site inspection is to identify if any of the permit conditions haven't been met (e.g. Rehab of disturbed site etc.). No post-inspection sign off forms are available from the reporting period as no exploration drillings works have been completed yet. The Exploration Management Plan was only finalised in May 2021, with the first exploration drilling commencing under the Plan in September 2021 (note outside the audit period). As such, no rehabilitation has been required at this stage." No OFI has been prepared as the Operator has developed and is implementing an Exploration Management Plan for rehabilitation for disturbances from the drilling and site investigation activities. |
| | | 83 - previously 60 | Characterisation data from the drilling must be kept and available to the Minister on request and reported in the Operator's EMR. | | | | | | | | | | | | 4 | Full Compliance | EMR 2020 - 2021 - Appendix T - 2020 Hydrogeological Drilling and Field Campaign. The Independent Monitor was advised by the Operator that the characterisation data is the bore logs in EMR 2020 - 2021 - Appendix T - 2020 Hydrogeological Drilling and Field Campaign. | The Operator advised the Independent Monitor that characterisation data is on MRM's server (bore logs). There has been no request from DITT to provide it. |
| | | 84 | All documentation relating to the investigations undertaken is to be made available to the Department on request. | 1 | | | | | | | | | | | N/A | Not Applicable | | Operator advised they have not had any requests from the DITT. Documentation retained within the Mining DITT on MRM's server. |
| | | 85 | On completion of the investigation the disturbances are to be rehabilitated in accordance with the approved MMP and the basis for the proposed adjustment of total security adjustments required under Condition 11, are provided in the annual Unplanned Closure Plan report to the satisfaction of the Department. | | | | | | | | | | | | N/A | Not Applicable | | The investigation is not complete. A formal report will be issued once complete. Not going to seek to relinquish security from these areas unless Operator able to demonstrate it is rehabilitated. Full security remains in place. |
| Exploration | | | | | | | | | | | | | | | | | | |
| | | 86 - previously 11 | The Operator must ensure that: | | | | | | | | | | | | | Refer to sub conditions | | |
| | | 86.a | works are undertaken in accordance with management systems detailed in the approved MMP; | | | | | | | | | | | | 4 | Full Compliance | 2020-2021 Drilling Register 2020-2021 Drilling Register showed that the exploration drillholes were all grouted. | January 2020 MMP states "Following the completion of the drilling program and prior to the wet season, drill hole collars will be surveyed, plugged and backfilled with clean fill. Compacted ground will be ripped, with stockpiled topsoil and vegetation spread over the cleared area." The Operator advised "The 2020-2021 Drilling Register provided lists information on the drillhole completion methods. The Exploration Drillholes ("Hole_Purpose" = Resource) were all grouted." |
| | | 86.b | an environmental management plan is in place that addresses: | | | | | | | | | | | | | Refer to sub conditions | Exploration Management Plan SPC-3100001 May 2021, Version 2. (after audit period) | |
| | | 86.b.i | chemical use and storage (e.g. hydrocarbons, drilling fluids); | | | | | | | | | | | | 4 | Full Compliance | Exploration Management Plan SPC-3100001 May 2021, Version 2. (after audit period) 210926 - Environ Inspect - Exploration Drilling (after audit period) FRM-2600122-2020_DRILLING_JSA The JSA provided included mainly safety controls but did include "Appropriate bunding and storage, spill mats available, containers and packaging in good condition, spill response plan in place, dispose of rubbish as per site procedures PR-016 Chemical & Hydrocarbons Mgt. Procedure PR-019 Waste Management Procedure" The JSA is considered sufficient in terms of meeting the intent of an environmental management plan related to chemical use and storage in the audit period. | Section 3.1.2 of the Exploration Management Plan (from after the audit period) says "Hydrocarbon spills will be minimised using liners and drip trays under machinery, and appropriately sized spill-kits available in the event of a spill; * Hazardous substances (including hydrocarbons) will be stored and handled in accordance with relevant Australian standards; * Hydrocarbons will be stored in lined and bunded areas" and "Spill kits are located on drill sites for the duration of drilling activities and maintained in accordance with MRM's General Spill Response Procedure (PRO-2600047)." |
| | | 86.b.ii | erosion and sediment control; | | | | | | | | | | | | 3 | Part Compliance (High) | Exploration Management Plan SPC-3100001 May 2021, Version 2. (after audit period) There was no evidence provided of an environmental management plan or equivalent document addressing erosion and sediment control for during the audit period. | Section 3.1.1 of the Exploration Management Plan (from after the audit period) says "During the planning and construction of the drill area and when necessary, access tracks, the following will be considered: [...] *Vegetation clearing during, and immediately after rainfall events, will be avoided; * Vegetation clearing will be kept to a minimum required to safely traverse vehicles and drill rigs along tracks and drill pads; [...] *Methods to control erosion and sediment flow;" and "Appropriately size sumps and tanks to contain sufficient volumes of water, sediment and drilling fluids encountered during drilling;" The rehabilitation requirements are included "Access tracks will be rehabilitated, including pushing in all windrows, unless otherwise agreed in writing by the land holder or appropriate third party; * Appropriate erosion and sediment controls will be installed where erosion is evident or likely to occur; * Access through watercourses will be removed and banks restored; * All previously disturbed areas will be stable, with no evidence of active soil erosion" OFI: Implement the Exploration Management Plan that now includes environmental controls and retain evidence (e.g. Job Safety Analysis (JSA), environmental inspections, etc). |

Authorisation Compliance Workbook - Operator

15 Aug 2019
Authorisation
Condition No.

10 Aug 2020
Authorisation
Condition No.

13 Nov 2020
Authorisation
Condition No.

Condition/Requirement

Governance/General
Non-mineral Waste
Management
Open Pit/Underground
Workings
Tailings Storage Facility
Water Management and
Storages
Overburden Placement
Facilities
Exploration
Waterways (including river
diversion)
Bing Bong Loading Facility

Score

Compliance
Level

Evidence

Comments

| | | | | | | | | | | | | | | | | | | |
|-------------------------------------|----------|----------|---|--|--|--|--|--|--|--|--|--|--|-----|-------------------------|--|---|--|
| | | 86.b.iii | dust; | | | | | | | | | | | 3 | Part Compliance (High) | Exploration Management Plan SPC-3100001 May 2021, Version 2. (after audit period) There was no evidence provided of an environmental management plan or equivalent document addressing dust management for during the audit period. | Section 3.1.2 of the Exploration Management Plan (from after the audit period) says "Controls to minimise airborne dust". OFI: refer condition 86.b.ii. | |
| | | 86.b.iv | associated risks common for exploration works; | | | | | | | | | | | 3 | Part Compliance (High) | Exploration Management Plan SPC-3100001 May 2021, Version 2. (after audit period) There was no evidence provided of an environmental management plan or equivalent document addressing general environmental risks for during the audit period. | There are controls for various other common risks included in the Exploration Management Plan (from after the audit period). OFI: refer condition 86.b.ii. | |
| | | 86.c | rehabilitation is undertaken for locations not needed for further use; | | | | | | | | | | | N/A | Not Applicable | | The Operator advised that there are no locations not needed for further use. | |
| | | 86.d | a rehabilitation report including details regarding the status of disturbance rehabilitated drill holes and the basis for the proposed adjustment of total security in accordance with Conditions 10, 11 and 12, to the satisfaction of the Department. | | | | | | | | | | | N/A | Not Applicable | | The Operator advised that there has not been a proposed adjustment of total security related to rehabilitated drill holes. There is no rehabilitation report. | |
| Non-mineral Waste Management | | | | | | | | | | | | | | | | | | |
| 12 | 12 | | The Operator is authorised to complete works to prepare and construct a Centralised Waste Facility (CWF) for management of general, contaminated and putrescible wastes, in accordance with: | | | | | | | | | | | | Refer to sub conditions | | This condition is only relevant until 13Nov2020. No detailed designs have been prepared. Condition is superseded by new Authorisation. | |
| 12.a | 12.a | | concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12, ensuring: | | | | | | | | | | | | N/A | Not Applicable | This condition is only relevant until 13Nov2020. No detailed designs have been prepared. | |
| 12.a.i | 12.a.i | | Detailed designs follow the approved concepts for the facility (including 100 year ARI flood immunity, CCL and protective armour, drainage works and bio-security control). The detailed design must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives; | | | | | | | | | | | | N/A | Not Applicable | This condition is only relevant until 13Nov2020. No detailed designs have been prepared. | |
| 12.a.iii | 12.a.iii | | The detailed designs must be reviewed and endorsed by an Independent Certifying Engineer (ICE) without limitation on responsibility and provided to the department prior to commencement of construction. | | | | | | | | | | | | N/A | Not Applicable | This condition is only relevant until 13Nov2020. No detailed designs have been prepared. | |
| 13 | 13 | | An ICE must warrant and accept both the design and construction works, without limitation on responsibility: | | | | | | | | | | | | Refer to sub conditions | | | |
| 13.e | 13.e | | at completion of the construction works the ICE must approve an "as-constructed" construction report that is to be submitted to the Department. The report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied; and | | | | | | | | | | | | N/A | Not Applicable | This condition is only relevant until 13Nov2020. Construction has not commenced. | |
| 13.f | 13.f | | the existing waste facilities must be decommissioned and rehabilitated, but only after an approval of rehabilitation plan by the Department. The rehabilitation plan must include details on proposed adjustment of total security as a result of the works. | | | | | | | | | | | | N/A | Not Applicable | This condition is only relevant until 13Nov2020. Construction has not commenced. | |
| | | 87 | The Operator is authorised to complete works to prepare and construct a Centralised Waste Facility (CWF) for management of general, contaminated and putrescible wastes, in accordance with: | | | | | | | | | | | | Refer to sub conditions | | CWF has not been constructed. Operator currently investigating needs and priorities for this and other infrastructure potentially at the same location. | |
| | | 87.a | concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Schedule B, ensuring detailed designs: | | | | | | | | | | | | N/A | Not Applicable | CWF has not been constructed. Operator currently investigating needs and priorities for this and other infrastructure potentially at the same location. | |
| | | 87.a.i | follow the approved concepts for the facility (including 100 year ARI flood immunity, CCL and protective armour, drainage works and biosecurity control); | | | | | | | | | | | | N/A | Not Applicable | CWF has not been constructed. Operator currently investigating needs and priorities for this and other infrastructure potentially at the same location. | |
| | | 87.a.ii | the structure design and construction is undertaken in accordance with independent oversight consistent with Conditions 48 and 50; | | | | | | | | | | | | N/A | Not Applicable | CWF has not been constructed. Operator currently investigating needs and priorities for this and other infrastructure potentially at the same location. | |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste Management | Open Pit/Underground Workings | Tailings Storage Facility | Water Management and Storages | Overburden Placement Facilities | Exploration | Waterways (including river diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|--|---|---|---|--------------------|------------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------------|-------------|---------------------------------------|----------------------------|-------|-------------------------|--|--|
| | | 87.a.iii - previously 12.a.ii | include allowances for the installation of an adequate number of monitoring bores at suitable locations to monitor the environmental performance of the structure with respect to contaminant seepage. These monitoring locations must be integrated and reported within the site-wide water monitoring requirements. | | 1 | | | | | | | | N/A | Not Applicable | | CFW has not been constructed. Operator currently investigating needs and priorities for this and other infrastructure potentially at the same location. |
| | | 88 | The Operator must ensure the non-mineral waste facility, landfill or equivalent previously in use is rehabilitated following approval by the Department of a rehabilitation plan. | | 1 | | | | | | | | N/A | Not Applicable | | Future item. Still in use. |
| Rehabilitation Trials | | | | | | | | | | | | | | | | |
| | | 89 - previously 14 | The Operator is authorised to undertake the following rehabilitation trials, in accordance with concepts defined in relevant documents in Schedule B and the approved MMP: Construction Test Pads (CTP) on NOEF West stage; | | | | | | | | | | | Refer to sub conditions | | |
| | | 89.a | | | | | | | 1 | | | | 4 | Full Compliance | EMR 2020 -2021. DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) EMR 2020 - 2021 section 2.5.1 states "NOEF West stage: Continued construction of the MS-NAF Halo and advection barriers on the top and southwest faces; conducted the Geosynthetic Liner Constructability Trial on the western face." | The Operator advised that construction test pads "were completed during the reporting period. A report is currently in draft for the trial and is not available for distribution." Independent Monitor advised by the Operator that all runoff from rehabilitation trial areas are contained in the water management system, as required by the January 2020 MMP. DITT Site Inspection Report dated 3Feb2021 states "Deteriorating weather conditions prevented further inspection of NOEF. Instead, recent drone footage undertaken for NOEF was shown to DITT staff, which indicated a second BGM trial underway at the batter of the north western corner of the NOEF." |
| | | 89.b | PAF(RE) Cell and Cover System Performance on NOEF Southeast stage; | | | | | | 1 | | | | 4 | Full Compliance | EMR 2020 -2021. NOEF PAF(RE) Cell Field Trial - Phase 1 Summary Report - 2019/2020 Monitoring Period dated March 2021. DITT Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) EMR 2020 - 2021 states "completed construction of Phase 1 of the PAF(RE) Trial Cell." Section 3.1 of the NOEF PAF(RE) Cell Field Trial - Phase 1 Summary Report - 2019/2020 Monitoring Period also states "A brief summary of the construction works for Phase 1 of the Field Trial is provided as follows: [...] A Construction of temporary surface water management infrastructure. To meet regulatory requirements, namely assessment of the WSC performance during the summer wet-season period, the Phase 1 aspect of the Field Trial was intended to be completed prior to onset of the 2019/2020 wet season. However, the construction period was extended primarily due to delays in obtaining sufficient quantities of the most reactive material available. By delaying construction of the PAF core until which time as the most reactive material was available provided the best opportunity to test the proposed waste placement strategy against a worst case scenario. As a result, the Phase 1 landform was not completed prior to the wet season." DITT Site Inspection Report dated 3Feb2021 states "A bituminous gravel material (BGM) trial, consistent with OMP and Authorisation 0059 was observed on top of the NOEF." | Independent Monitor advised by the Operator that all runoff from rehabilitation trial areas are contained in the water management system, as required by the January 2020 MMP. January 2020 MMP states "Construction of a PAF (RE) cell as per the OMP EIS design, on an impervious geosynthetic-lined base. The PAF (RE) cell will be constructed in 3 x 2 m lifts and will include fine-grained low-air-permeability barriers (advection barriers) and a wet season cover, replicating the OMP EIS design. The PAF (RE) lifts will be instrumented for temperature, moisture and gas analysis. It will be left to stand for at least one wet season (2019/20) to determine the effectiveness of both the wet season cover and the low-air-permeability barriers. PAF (RE) was selected for the cover system trial because it represents the most reactive material that will be encapsulated by the NOEF cover system." |
| | | 89.c | Mine Levee revegetation. | | | 1 | | | | | | | N/A | Not Applicable | | The Operator advised "No works were completed for the Mine Levee revegetation project during the reporting period, due to several delays which have caused the project timing to be too close to the commencement of the NOEF revegetation trial. Therefore, MRM will utilise the outcomes of the NOEF revegetation trials, as the area provides the most appropriate substrate for testing." |
| | | 90 - previously 14 | The Operator must ensure all contaminated runoff is contained and managed within the water management circuit and as detailed in the Water Management Plan. | | | 1 | | | 1 | | | | 4 | Full Compliance | The Operator advised that the NOEF rehab trial area runoff all drains to within the on site water management system. Specifically the plateau surface water management system was not in place prior to the wet season (NOEF PAF(RE) Cell Field Trial - Phase 1 Summary Report - 2019/2020 Monitoring Period dated March 2021.). The Operator advised this did not allow any uncontrolled runoff outside of the water management system. | The NOEF is contained within the water management system on site. |
| Bing Bong Loading Facility | | | | | | | | | | | | | | | | |
| | | 91 | Dredging activities at the Bing Bong Port Facility are authorised, subject to: | | | | | | | | | | | Refer to sub conditions | | Operator advised no dredging has occurred in the audit period. A dredging management plan is being prepared potentially for dredging that may occur in 2022. |
| | | 91.a | submission to the department of a Dredging and Dredge Spoil Management Plan; | | | | | | | | | 1 | N/A | Not Applicable | | Operator advised no dredging has occurred in the audit period. A dredging management plan is being prepared potentially for dredging that may occur in 2022. |
| | | 91.b | approval of the Plan by the Department prior to commencement of dredging. | | | | | | | | | 1 | N/A | Not Applicable | | Operator advised no dredging has occurred in the audit period. A dredging management plan is being prepared potentially for dredging that may occur in 2022. |
| Environmental Monitoring and Management | | | | | | | | | | | | | | | | |
| 61 | 62 | | The Operator must collect and maintain the following to the satisfaction of the Minister: | | | | | | | | | | | Refer to sub conditions | | |
| 61.a | 62.a | | all environmental monitoring data which is contemplated in this document or the MMP or reasonably required for the proper implementation of this document or the MMP; and | | 1 | | | | | | | | 4 | Full Compliance | Operator does not dispose of records. Records are kept on an offsite Glencore server. All raw environmental monitoring data and laboratory analysis results from the lab are uploaded into the Monitor Pro Database. | This condition is only relevant until 13Nov2020. Most monitoring programs are reported in the EMR. |
| 61.b | 62.b | | any other environmental monitoring records and data prepared or obtained by or in the possession of the Operator at any time in connection with the Mine (including for example, monitoring records or data submitted to the Commonwealth government). | | 1 | | | | | | | | 4 | Full Compliance | Data is retained on Operator server in folders. If the water team request monitoring of water quality of the dams, Environment might go out and collect a sample and those results are uploaded into MonitorPro. Potable water samples are also done by the environment team. All data is recorded and stored permanently. | This condition is only relevant until 13Nov2020. |

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste | Management | Open Pit/Underground | Workings | Tailings Storage Facility | Water Management and | Storages | Overburden Emplacement | Facilities | Exploration | Waterways (including river | diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|--------------------|-------------------|------------|----------------------|----------|---------------------------|----------------------|----------|------------------------|------------|-------------|----------------------------|------------|----------------------------|-------|-------------------------|---|---|
| 62 | 63 | | The Operator must ensure data contemplated by condition 58 is provided to a mining officer upon request and will not be destroyed without the written permission of the Minister. | 1 | | | | | | | | | | | | | | 4 | Full Compliance | Glencore Zinc HSEC Management System Procedure MSP-03 : Compliance (Legal and Other Requirements) and Document Control version 1 dated 30Jun2014. | This condition is only relevant until 13Nov2020. The Operator advised there had been no request from DITT. The Glencore Zinc HSEC Management System Procedure MSP-03 : Compliance (Legal and Other Requirements) and Document Control includes "Maintaining compliance verification records associated with evaluation and monitoring activities e.g. report findings, corrective actions, training and communication;" and "All Glencore Zinc managed sites shall implement processes to ensure HSEC: *documentation is:-controlled;-available;-understandable; and -relevant external documentation is registered and current. *records are:-accurate;-legible;-identifiable;-accessed through suitable privacy protocols and restrictions (where required);-securely stored;-readily retrievable; and -have designated retention times, and assigned owners." Note, in 15Aug2019 Authorisation this condition referenced condition 58 which is condition 59 in the 10Aug2020 Authorisation and is condition 81 in the 13Nov2020 Authorisation. OBS: The Glencore Zinc HSEC Management System Procedure MSP-03 : Compliance (Legal and Other Requirements) and Document Control version 1 dated 30Jun2014 had a review date of 30Jun2015. The Operator may consider reviewing and updating this document. |
| 66 | 67 | | The Operator must amend the MMP to include a livestock management plan clearly detailing how the ongoing exclusion of cattle from the Exclusion Area will be managed and monitored. The plan is to include monitoring schedules and remedial actions should monitoring detect cattle within the Exclusion Area, it should also detail the staff member or position responsible for ensuring compliance with the plan. | 1 | | | | | | | | | | | | | | 4 | Full Compliance | EMR 2020 - 2021. Cattle Management Plan (September 2019) January 2019 MMP included the April 2017 to April 2018 Cattle Management Plan. Section 5 of the Cattle Management Plan (September 2019) discusses cattle management including fencing, fence maintenance, mustering and aerial inspections. Figure 7 of the Cattle Management Plan (September 2019) provides a flow chart of cattle management actions. Section 8 of the Cattle Management Plan (September 2019) has a table of responsibilities. | This condition is only relevant until 13Nov2020. April 2017 to April 2018 Cattle Management Plan included in the January 2019 MMP. The April 2018 Cattle Management Plan Figure 3 shows the cattle fence and electric fence surrounding the site (47km of fence), muster yard and lick blocks. Fence maintenance is included in Section 3.1.2. Fences and gates are inspected weekly with maintenance work undertaken as required. The fence will be replaced every 10 years. Section 5 of the April 2018 Cattle Management Plan includes responsibilities for verifying that actions are undertaken as described in the management plan by the Senior Rehabilitation Advisor and communicating roadblocks to compliance by the Manager - Environment, Safety & People and Senior Rehabilitation Advisor. Section 3.2 of the April 2018 Cattle Management Plan states opportunistic cattle monitoring is undertaken weekly during the wet season whilst a helicopter is undertaking other work at site. All cattle sightings are reported to the Rehabilitation team and sightings are recorded in the Cattle Register. Mustering undertaken approximately every 6 weeks in the dry season. The EMR 2020 - 2021 section 3 includes the Cattle Management Plan as "one of the suite of environmental management plans to manage the performance of the Mine". Cattle Management Plan (September 2019) was submitted in the January 2020 MMP. |
| 67 | 68 | | The Operator must remove all livestock and undertake all necessary actions or works to ensure the permanent exclusion of cattle from the Exclusion Area within MLN 1121, MLN 1122, MLN1123 and MLN1124. | 1 | | | | | | | | | | | | | | 4 | Full Compliance | Internal email dated 26/07/2021 1:02 PM FW: IM VoA Audit RFI - Rehab. | This condition is only relevant until 13Nov2020. Figure 12 in the EMR 2020 - 2021 shows the cattle fence and electric fence. Section 3.10.5 mentions cattle muster events. Internal email dated 26/07/2021 1:02 PM FW: IM VoA Audit RFI - Rehab tabulated the fence inspections and cattle musters and showed: * 5 musters across the dry season in the audit period * 36 fence inspections across the audit period. |
| 69 | 70 | | For the purposes of managing dust, to the satisfaction of the Minister: | | | | | | | | | | | | | | | | Refer to sub conditions | This condition is only relevant until 13Nov2020. | |

Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste Management | Open Pit/Underground Workings | Tailings Storage Facility | Water Management and Storages | Overburden Placement Facilities | Exploration | Waterways (including river diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|--------------------|------------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------------|-------------|---------------------------------------|----------------------------|-------|-------------------------|--|---|
| 69.a | 70.a | | the Operator must employ dust mitigation and monitoring measures at the Mine and in the course of all mining activities which generate dust, to minimise dust emission and impact on the Receiving Environment; | 1 | | | | | | | | | 4 | Full Compliance | <p>EMR 2020 - 2021. January 2020 MMP. Complaints log. EMR 2020 - 2021 Appendix E - Ambient Air Monitoring Report May 2020 – April 2021.</p> <p>The EMR 2020 - 2021 Table ES-5 shows investigations did occur related to dust impacts and Section 3.2.1 states "The objective of the monitoring program is to measure the levels of dust and concentration of COPCs in the ambient air near the operational areas of the Mine and the Bing Bong Loading Facility to determine the effectiveness of the air quality controls" and "Twenty-seven dust deposition gauges (21 near the Mine [including two control sites] and six near the BBLF [including one control site])".</p> <p>Table 13 of the EMR 2020 - 2021 shows that there has been progress on the mitigation measures identified in the EMR 2019 - 2020.</p> <p>The EMR 2020-2021 states in Section 3.2.2 "The MiniVol monitoring at the Mine and BBLF ceased in September 2020 and the TEOM01 and TEOM03 monitors were removed in January 2021 in accordance with the revised Air Quality Management Plan (AQMP)." and "Due to equipment malfunctions, equipment communications issues and NT border restrictions due to the COVID-19 pandemic, the real-time dust (also referred to as 'e-sampler') monitoring data was not available for majority of the year, and thus has been excluded from this EMR. The E-sampler monitoring ceased in September 2020 in accordance with the revised Air Quality Management Plan (AQMP)." Independent Monitor notes that there is no real-time dust (e-sampler) monitoring required by the AQMP.</p> <p>EMR 2020-2021 Section 3.2.5 discusses removing monitoring point DDG22, which is consistent with the AQMP as it was not included.</p> | <p>This condition is only relevant until 13Nov2020.</p> <p>Operator advised they have water carts on site. The water carts and binders are only used within the operational area. Air Quality Management Plan (2017) was in place prior to 13Nov2020 and is relevant to this condition.</p> <p>No dust incidents or complaints were reported.</p> |
| 69.b | 70.d | | If dust is entering the Receiving Environment resulting in or having the potential to cause environmental harm the Operator must undertake works or change its systems or practices to reduce dust to levels which no longer cause potential or actual environmental harm; and | 1 | | | | | | | | | 3 | Part Compliance (High) | <p>Complaints Register 2021. EMR 2020 - 2021.</p> <p>The EMR 2020 - 2021 Table ES-5 shows investigations did occur related to dust impacts in terms of assessment related to air quality, soils, aquatic fauna - metals and fluvial sediments. They indicated a potential for environmental harm specifically related to within or directly adjacent operational areas. Table 13 of the EMR 2020 - 2021 shows that there has been progress on the mitigation measures identified in the EMR 2019 - 2020.</p> <p>There is evidence of investigations occurring and implementation of some mitigation measures during the audit period. However, it appears not all proposed measures in the EMR 2019 - 2020 have been completed in the audit period. Hence, the potential for environmental harm remains.</p> | <p>This condition is only relevant until 13Nov2020.</p> <p>Dust binder trial in prep.</p> <p>The complaints log shows no dust related complaints in the audit period.</p> <p>Letter from Operator to DITT Re: McArthur River Mine – 2019-20 Environmental Monitoring Report dated 31 August 2020 "[...] MRM undertook a holistic assessment of multiple monitoring programs and results identified that deposited dust from the Mill and haulage of materials across the Barney Creek bridge are the main contributors to elevated metals in fluvial sediment and biota along Barney Creek. The corrective actions and further investigations are outlined in Table 42 of the EMR and are planned to be carried out during the next reporting period to reduce the levels of deposited dust associated with these sources."</p> <p>No OFI has been prepared as this condition no longer exists in the 13Nov20 Authorisation. Evidence of implementation of mitigation measures in Table 13 of the EMR 2020 - 2021 will be part of the 2022 Independent Monitor audit including related to implementation of the Adaptive Management Plan. The Operator should continue to undertake the dust mitigation measures included in Table 13 of the EMR 2020 - 2021.</p> |
| 69.c | 70.c | | Any dust suppressant must be suitable for the location where it is to be used. | 1 | | | | | | | | | 4 | Full Compliance | <p>Applied 3-324 Speciality Wetting Agent/Dust Suppressant ITW POLYMERS & FLUIDS SDS. EMR 2020 - 2021</p> <p>The Operator advised that more sensitive locations (e.g. near to waterways) are benign material only. They are only concerned about suppressing dust in operational areas as it is non-benign. Runoff at the bridge is captured. Operational areas all drain to the water management system.</p> <p>The EMR 2020 - 2021 has the dust binder trial occurring in Q3 2021, outside of the audit period and Table 13 says "A scope of works has currently been developed for the trial of dust suppression binder 'Applied 3324 Dust Suppressant 100 ppm in Water' (Chemwatch code 5454-24), a suppression binding agent which is considered not to be hazardous. MRM are currently implementing the Change Management Procedure prior to commencing the trial."</p> | <p>This condition is only relevant until 13Nov2020.</p> |
| | | 92 | Environmental monitoring for the McArthur River Mine site (including BBLF) must be undertaken in accordance with requirements in Schedule D and reported as part of Condition 9. | 1 | | | | | | | | | 4 | Full Compliance | <p>EMR 2020 - 2021</p> | <p>EMR 2020 - 2021 does include BBLF.</p> <p>Additional evidence is provided under the individual conditions from Schedule D.</p> |
| Adaptive Management | | | | | | | | | | | | | | | | |
| | | 93 | Within 12 months of the date of authorisation of the Overburden Management Project, the Operator must submit a revised AMP as required under Conditions 45. | 1 | | | | | | | | | N/A | Not Applicable | <p>The trigger date for this condition was after the audit period and so this condition is N/A. The Operator advised that they resubmitted the AMP to DITT in August 2021.</p> | <p>Future item as not required until 13Nov2021.</p> |
| | | 94 | The revised AMP must: | | | | | | | | | | | Refer to sub conditions | | |
| | | 94.a | address the comments from the Independent Monitor or independent third party review of the draft AMP and ensuring compliance with Condition 45; | 1 | | | | | | | | | N/A | Not Applicable | | <p>Future item as not required until 13Nov2021.</p> <p>The trigger date for this condition was after the audit period and so this condition is N/A. The Operator advised that they resubmitted the AMP to DITT in August 2021.</p> |
| | | 94.b | be consistent with the AMP required under the Waste Management and Pollution Control Act 1998 and Environment Protection and Biodiversity Conservation Act 1999; | 1 | | | | | | | | | N/A | Not Applicable | | <p>Future item as not required until 13Nov2021.</p> |

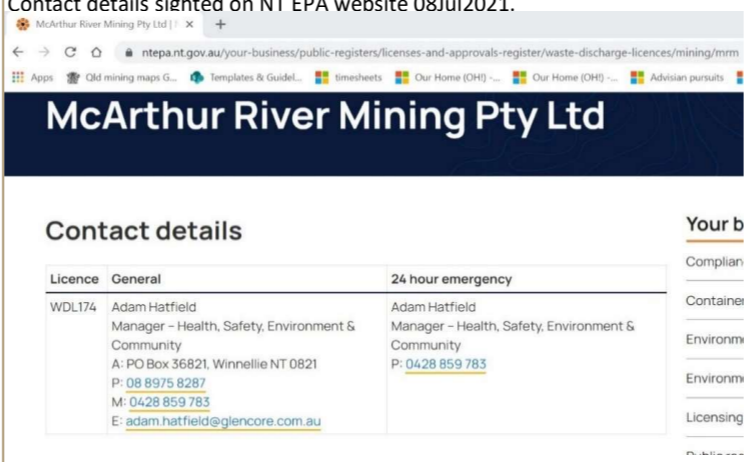
Authorisation Compliance Workbook - Operator

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Governance/General | Non-mineral Waste Management | Open Pit/Underground Workings | Tailings Storage Facility | Water Management and Storages | Overburden Placement Facilities | Exploration | Waterways (including river diversion) | Bing Bong Loading Facility | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|--------------------|------------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------------|-------------|---------------------------------------|----------------------------|-------|-------------------------|--|---|
| | | 94.c | be reviewed by a Department approved independent third-party at the discretion of the Minister; | 1 | | | | | | | | | N/A | Not Applicable | | Future item as not required until 13Nov2021. |
| | | 94.d | be approved by the Minister; | 1 | | | | | | | | | N/A | Not Applicable | | Future item as not required until 13Nov2021. |
| | | 94.e | once approved, be implemented in full. | 1 | | | | | | | | | N/A | Not Applicable | | Future item as not required until 13Nov2021. |
| | | 95 | Any material changes to the AMP required by Condition 94 must be re-approved by the Minister. | 1 | | | | | | | | | N/A | Not Applicable | | Future item. AMP not required until 13 Nov2021. |
| Mine Closure | | | | | | | | | | | | | | | | |
| | | 96 | From the date of authorisation of the Overburden Management Project, the Operator must submit an updated Mine Closure Plan with each MMP that builds upon the closure concepts defined in the Overburden Management Project. | 1 | | | | | | | | | N/A | Not Applicable | | Future item. No MMPs in the audit period. |
| | | 97 | The Mine Closure Plan required under Condition 96 must: | | | | | | | | | | | Refer to sub conditions | | Future item. No MMPs in the audit period so the trigger for the Mine Closure Plan has not occurred. |
| | | 97.a | detail how key mine domains will be rehabilitated to achieve the Overburden Management Project closure objectives; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. No MMPs in the audit period so the trigger for the Mine Closure Plan has not occurred. |
| | | 97.b | address outcomes of the reviews by independent technical and closure panels in accordance with Condition 21 with respect to mine closure; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. No MMPs in the audit period so the trigger for the Mine Closure Plan has not occurred. |
| | | 97.c | incorporate relevant outcomes from rehabilitation trials defined in Condition 89. | 1 | | | | | | | | | N/A | Not Applicable | | Future item. No MMPs in the audit period so the trigger for the Mine Closure Plan has not occurred. |
| | | 98 | Five years prior to the planned closure of the mine, the Operator must: | | | | | | | | | | | Refer to sub conditions | | Future item. Mine closure more than 5 years away. |
| | | 98.a | finalise the Mine Closure Plan required under Condition 96; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Mine closure more than 5 years away. |
| | | 98.b | submit to the Department the plan for approval by the Minister; | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Mine closure more than 5 years away. |
| | | 98.c | following approval, the Mine Closure Plan must be implemented by the Operator in full. | 1 | | | | | | | | | N/A | Not Applicable | | Future item. Mine closure more than 5 years away. |
| Unplanned Mine Closure | | | | | | | | | | | | | | | | |
| | | 99 | From the date of authorisation of the Overburden Management Project, the Operator must annually submit to the Department an Unplanned Mine Closure Plan on or before 31 August, starting 2021, to the Department, which is accompanied by a related security estimate. | 1 | | | | | | | | | 4 | Full Compliance | Email from Operator to DITT dated 16Apr21 MRM 2021 Unplanned Closure Plan and Independent Security Assessment. Enclosure 1 - MRM Unplanned Closure Plan 2021_FINAL_April. Enclosure 2 - MRM Security Calculation_2021_210416_Final. Enclosure 4 - Phronis Independent Security Audit Report 2021. Unplanned Closure Plan submitted annually to the DITT by the Operator with revised security included. Independent Monitor confirmed email evidence of submission via email 16Apr21 stated "In accordance with Condition 11 of Variation of Authorisation 0059, dated 13 November 2020, please find the attached cover letter requesting a revision to McArthur River Mining Pty Ltd's (MRM) security held by the DITT of Industry, Tourism and Trade (DITT).". | Unplanned Mine Closure Plan was submitted early for 2021 activities. The Operator advised "The revised Unplanned Closure Plan and associated security calculation enables the continuation of operations over the next approximately 12 month period. The total cost of the revised security calculation is \$405,116,668 (including the 10% discount), which is approximately \$5.1 million higher than the current security held by DITT." |
| | | 100 | The Operator must comply with the clauses pertaining to it in Schedule C - Independent Monitoring Assessment Conditions. | 1 | | | | | | | | | N/A | Not Applicable | | Assessed through individual conditions in Schedule C. |



Appendix B
Waste Discharge Licence Compliance
Workbook - Operator

Waste Discharge Licence Compliance Workbook - Operator 2021

| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---|---|-------|------------------------|---|--|
| Operator Audit - WDL174-11 (28 April 2019 - 28 April 2021) | | | | | |
| GENERAL | | | | | |
| 1 | The licensee must ensure the contact details recorded with the Administering Agency for this licence are correct at all times. | 4 | Full Compliance | <p>Contact details sighted on NT EPA website 08Jul2021.</p>  | Yes. Adam is the contact to WDL related enquiries and Operator advised the details are correct. |
| 2 | The licensee must at all times have a 24 hour emergency contact. | 4 | Full Compliance | <p>Emergency contact number in operation.</p> <p>The Operator website (08Jul2021) has an Information line 1800 211 573 and also includes the site switchboard phone number (+61 8 8975 8179) that the Operator advised operates 24/7 prominently located in the contact us section. These were also sighted during the audit period by the Independent Monitor.</p> | Switchboard direct calls to ERT as required. 24 hour number: MRM emergency phone number is 08 8975 8222. Independent Monitor called 08 8975 8222 at 8:42pm AEST on 25Aug21. The call was answered promptly as from the Operator with the initial request to determine if it was an emergency. This demonstrated compliance with the condition. |
| 3 | The licensee must notify the Administering Agency prior to making any operational change that will cause, or is likely to cause, an increase in the potential for environmental harm. | 4 | Full Compliance | <p>Meeting minutes from 20 October 2020 between MRM, DEPWS and DITT have been added to the folder as evidence (FW DEPWS Meeting Minutes Adaptive Management Plan).</p> <p>WDL renewal submission email has been added to the folder (McArthur River Mining Pty Ltd Renewal Application for WDL 174-11).</p> | <p>Operator advised no significant changes. Currently ad hoc meetings occur based on any upcoming deliverables. Approximately a month in advance of any submissions.</p> <p>The Operator advised "Within the reporting period, two key operational changes were discussed thoroughly with both regulators prior to their submissions; the WDL Renewal and the submission of the Adaptive Management Plan and associated management plans/programs. [...]"</p> <p>The Adaptive Management Plan and associated plans submission email has been added to the folder (RE MRM Final Adaptive Management Plan and Environmental Monitoring Program). This email demonstrates that MRM socialised the AMP and associated plans with DEPWS well before submission. WDL changes where also discussed in depth within this email."</p> <p>The email evidence provided adequately addresses this condition.</p> |
| 4 | The licensee must cause clear and legible signage, in English, to be displayed in a prominent location at each public entrance to the premises that includes the following details: | | Refer to subconditions | | See sub-conditions 4.1 to 4.2 below. |
| 4.1 | waste discharge licence number issued under the Water Act; and | 4 | Full Compliance | <p>A photo of the front gate at the mine showed the relevant WDL licence number (WDL174-11) for the audit period.</p> <p>A photo of the front gate of the Bing Bong Loading Facility showed the latest WDL licence number (WDL174-12), because this photo was taken after the audit period when the new WDL license was in place.</p> | There is another WDL 174 sign at the front of the TSF gate leading to the WMD. However, as this is not a public entrance it is not required by this condition. |
| 4.2 | 24 hour emergency contact details. | 4 | Full Compliance | Photos of front gate at mine and Bing Bong Loading Facility showed number 8975 8222 for emergency contact. | |
| 5 | The licensee must cause a copy of this licence to be available for inspection by any person, in hard copy form, at the premises. | 4 | Full Compliance | | Operator advised that a copy is held at the front gate security hut and general manager's office. |

Waste Discharge Licence Compliance Workbook - Operator 2021

| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|----------------------------|---|-------|------------------|---|---|
| 6 | The licensee must provide to the Administering Agency, within 10 business days of a request, a copy of any document, monitoring data or other information in relation to the activity, must be provided in electronic form by emailing waste@nt.gov.au unless otherwise specified. | 4 | Full Compliance | Email from DEPWS to Operator on 10 March 2021 RE: URGENT - Request for further information - McArthur River Mining Pty Ltd Renewal Application for WDL 174-11. Email Operator to DEPWS on 18 March 2021 RE: URGENT - Request for further information - McArthur River Mining Pty Ltd Renewal Application for WDL 174-11. Email DEPWS to Operator 1 April RE: URGENT - Request for further information - McArthur River Mining Pty Ltd Renewal Application for WDL 174-11. Email Operator to DEPWS on 7 April RE: URGENT - Request for further information - McArthur River Mining Pty Ltd Renewal Application for WDL 174-11. Email DEPWS to Operator on 13 April RE: URGENT - Request for further information - McArthur River Mining Pty Ltd Renewal Application for WDL 174-11 | One request for data was made by DEPWS on 10 March 2021, requesting data in an excel spreadsheet format. Operator responded on 18 March 2021 early and then provided the data by COB 18 March. DEPWS responded 1 April for further information. Operator responded on 7 April and advised by Operator that email 13 April closed out the issue. General waste@nt.gov.au email address is CCed. |
| 7 | All notices, reports, documents or other correspondence required to be provided as a condition of this licence, unless otherwise specified as a condition of this licence, must be provided in electronic form to the Administering Agency. | 4 | Full Compliance | Email Operator to DEPWS on 18 March 2021 RE: URGENT - Request for further information - McArthur River Mining Pty Ltd Renewal Application for WDL 174-11. Email Operator to DEPWS on 7 April RE: URGENT - Request for further information - McArthur River Mining Pty Ltd Renewal Application for WDL 174-11. | A sample of emails viewed showed that documents are being provided electronically. |
| 8 | The licensee must maintain and implement the current version of the documents listed in Table 1. | | - | | |
| Table 1: Licence Documents | Document Number 1 Communication Plan Waste Discharge Licence (WDL 174-10) | 4 | Full Compliance | Communication Plan Waste Discharge Licence (WDL 174-10). Letter - DEPWS - McArthur River Mine WDL Renewal Application dated 31Dec2020. General Manager update video example (November 2020) Covid updates - (6 examples provided for January and February 2021) Memorandum Magazine (5 examples saved to folder - Dec 20 to April 21) The Operator provided a number of different communication medias used by them during the reporting period. These examples show established communication methods in which the Operator can report water related events (when/if they occur during a reporting period). The Communication Plan includes a requirement for the Operator to communicate related to grant of a new WDL or unplanned discharges. The Operator advised no WDL was granted during the audit period and there were no unplanned discharges so there are not specific communication events to audit. | An observation of the 2020 audit was that the Communication Plan had no date stamp or version control. This appears to remain the same. Operator advised that the Communication Plan Waste Discharge Licence (WDL 174-10) is the current plan submitted to DEPWS on 31 December 2020 as part of the Waste Discharge Licence Renewal (Letter-DEPWS - McArthur River Mine WDL Renewal Application). The Independent Monitor viewed the renewal letter and it does include attachment 1 as the Communication Plan Waste Discharge Licence (WDL 174-10). OBS: The Communication Plan would benefit from including a date of issue, version control and updated WDL title referring to the relevant WDL version. The Operator advised "It can be assumed the date stamp is in line with the date of submission, as indicated on the letter of submission (dated 31 December 2020)." |
| Table 1: Licence Documents | Document Number 2 Emergency Response Plan McArthur River Mining | 4 | Full Compliance | Emergency Response Plan: MPN-26000001 Version 8 dated May 2020. Letter-DEPWS - McArthur River Mine WDL Renewal Application dated 31 December 2020. Att. # 8 Airport Exercise June 2021 - outside the audit period. Att. # 8a IMT exercise 16 April 2021 Att. # 9 IMT Responsibility Matrix Nov 2020 Att. # 14 MRM ERT Training Matrix Nov 2020 Email from Operator Emergency Response Coordinator to Operator Environment team subject RE: 2021 IM audit - evidence of ERP implementation required. | Emergency Response Plan: MPN-26000001 Version 8 dated May 2020 is the accurate document. Section 23 of the Emergency Response Plan includes a requirement to "Follow Communication Plan Waste Discharge Licence (WDL174-11)." Section 26 refers to discharge from the NOEF "Please note, the strategy shall be to release the water from the NOEF into the receding flood waters as soon as possible, to dilute the concentration of contaminants to acceptable WDL limits." The Operator advised "In accordance with the ERP, 21 MRM personnel have been trained and are competent in Incident Management Team (IMT) Roles. Added to the folder is the responsibility Matrix available for the reporting period (IMT responsibility Matrix November 2020). All 21 IMT members hold either a PMAOMIR320 Manage Incident Response or PMAOMIR418 Coordinate an Incident Response qualification." |

Waste Discharge Licence Compliance Workbook - Operator 2021

| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---------------|---|-------|------------------------|--|---|
| 9 | Within 10 business days of any amendment being made to a document listed in Error! Reference source not found [sic]. The licensee must provide the amended document to the Administering Agency, along with: | 3 | Part Compliance (High) | <p>Emergency Response Plan version 6, dated October 2019 (Appendix O - Emergency Response Plan). Tabulated summary of the changes made between version 6 and version 8 (ERP summary of amendments). Ltr - DEPWS - McArthur River Mine WDL Renewal Application dated 31 December 2020. Emergency Response Plan version 8, dated May 2020.</p> <p>The Emergency Response Plan Version 8, May 2020 (Attachment 2 - Emergency Response Plan) was submitted to DEPWS on the 31 December 2020 as part of the WDL 174-11 renewal application. This indicates it was not within 10 business days of any amendment as required by the condition and therefore is a partial compliance.</p> <p>The Independent Monitor has reviewed the tabulated summary of changes made between version 6 and 8 and acknowledges that the changes were generally administrative with none specifically focused on WDL elements. While the potential for environmental risk associated with not submitting the updated Emergency Response Plan is negligible, the condition states "within 10 business days of any amendment being made" and therefore is part compliant.</p> | <p>This pertains to the Communication Plan Waste Discharge Licence (WDL 174-10) and Emergency Response Plan. The Communication Plan was not updated in the audit period.</p> <p>The Operator advised that they undertake a review of the Emergency Response Plan (ERP) annually and, if required, the plan is then updated. Version 8 of the Emergency Response Plan was implemented in May 2020, superseding the previous plan.</p> <p>The Independent Monitor understands that Version 7 of the Emergency Response Plan was not submitted to DEPWS. The Operator advised "this was because Section 23 and Section 25 (the sections relevant to the WDL) remained unchanged between versions."</p> <p>OFI: Issue updated Emergency Response Plan to DEPWS within 10 days of updates and include a tabulated summary of the amendments with document references, reasons for the amendment and an assessment of environmental risk associated with the amendments.</p> <p>OFI: Request a change to the condition to state that submission is only required when a change directly relevant to the WDL is made to the documents listed in Table 1 - Licence Documents.</p> <p>OBS: In WDL 174 -12, relevant for the next audit period, the Adaptive Management Plan is also included in Table 1 - Licence Documents and would require any amended documents to be submitted within 10 business days.</p> |
| 9.1 | a tabulated summary of the amendment(s) with document references; | 3 | Part Compliance (High) | <p>Tabulated summary of the changes made between version 6 and version 8 (ERP summary of amendments). Internal document not submitted to DEPWS.</p> <p>A tabulated summary of changes to the Emergency Response Plan version 6 and 8 was provided to the Independent Monitor by the Operator.</p> <p>The Operator advised that no summary of amendments to the Emergency Response Plan has been submitted to DEPWS. However, if changes were made that were relevant to the WDL, the DEPWS would be notified. For example the Version 7 document was not submitted to DEPWS because Section 23 and Section 25 (the sections relevant to the WDL) remained unchanged between versions.</p> <p>The Independent Monitor has reviewed the tabulated summary of changes made between version 6 and 8 and acknowledges that the changes were generally administrative with none specifically focused on WDL elements. While the potential for environmental risk associated with not submitting a tabulated summary of amendments is negligible, the condition states "within 10 business days of any amendment being made". Therefore, this part compliance is of an administrative nature.</p> | Refer to condition 9 for the relevant OFI. |
| 9.2 | reasons for the amendment(s) ; and | 3 | Part Compliance (High) | No evidence of submission to DEPWS of reasons for the amendments were provided. However, the plan is reviewed annually and these changes were generally administrative in nature with none specifically focused on WDL elements. Therefore, this part compliance is of an administrative nature. | Refer to condition 9 for the relevant OFI. |
| 9.3 | an assessment of environmental risk associated with the amendment(s). | 3 | Part Compliance (High) | No evidence of submission to DEPWS of an assessment of environmental risk associated with the Emergency Response Plan amendments was provided. However, the January 2020 MMP Environmental Risk Assessment was submitted with the Emergency Response Plan and the changes to the Emergency Response Plan were generally administrative with none specifically focused on WDL elements. Therefore, this part compliance is of an administrative nature. | Refer to condition 9 for the relevant OFI. |
| 10 | The Administering Agency may require the licensee to revise or amend and resubmit any amended document or document provided in accordance with this licence. Where the Administering Agency requires a document to be resubmitted, the licensee must submit it to the Administering Agency by the date specified by the Administering Agency. | N/A | Not Applicable | | No amendments were requested by DEPWS. |
| 11 | The licensee must operate and maintain a community feedback number. | 4 | Full Compliance | The Operator website (08Jul2021) has an Information line 1800 211 573 and also includes the site switchboard phone number (+61 8 8975 8179) that the Operator advised operates 24/7 prominently located in the contact us section. These were also sighted during the audit period by the Independent Monitor. | The Independent Monitor also viewed on the Operator website (08Jul2021) and during the audit period that enquiries can also be made via email on an online form. The Independent Monitor called the switchboard number 08 8975 8179 at 8:30pm AEST on 25Aug21 and the call went to voicemail. |

Waste Discharge Licence Compliance Workbook - Operator 2021

| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|-----------------------------------|---|-------|------------------------|--|---|
| 12 | The licensee must display the community feedback number: | | Refer to subconditions | | Refer to sub conditions |
| 12.1 | where the licensee has a website, in a prominent location on the licensee's website; | 4 | Full Compliance | The Operator website (08Jul2021) has an Information line 1800 211 573 and also includes the site switchboard phone number (+61 8 8975 8179) that the Operator advised operates 24/7 prominently located in the contact us section. These were also sighted during the audit period by the Independent Monitor. | |
| 12.2 | in the Communication Plan Waste Discharge Licence; and | 3 | Part Compliance (High) | The Communication Plan Waste Discharge Licence (WDL 174-10) includes "In an emergency contact: MRM on 08 8975 8222". It does not include the community feedback number. | An earlier type of this plan called Consultation and Communication Plan Waste Discharge Licence (WDL 174-10) had the "MRM Information Telephone Line: 1800 211 573" on page 6. OFI: Include the community feedback phone number in the next revision of the Communication Plan Waste Discharge Licence. |
| 12.3 | in other publicly available documents relating to the activity. | 4 | Full Compliance | NT EPA website - MRM Overburden Management Project (OMP) EIS Section E.2 Project Proponent. | Typically no specific documents related to waste discharge. However, example of it during the audit period is the OMP EIS. During the audit period, the Independent Monitor viewed on the NT EPA website the MRM Overburden Management Project EIS Section E.2 Project Proponent that includes the Information line 1800 211 573 and an email address. |
| 13 | The licensee must maintain a Complaint Log for all complaints received by the licensee in relation to the activity. | 4 | Full Compliance | Complaints log. | There were no complaints related to WDL activities in the audit period. Sighted the complaints log. |
| 14 | The licensee must ensure that the Complaint Log includes, for each complaint received by the licensee, the following information: | | Refer to subconditions | | There were no complaints logged in the Complaints log 2020 for the audit period. There was a heading for 2021 so the log wasn't only for 2020. |
| 14.1 | the person to whom the complaint was made; | N/A | Not Applicable | Sighted Complaints log 2020. | Column E complainant. |
| 14.2 | the person responsible for managing the complaint; | N/A | Not Applicable | Sighted Complaints log 2020. | Column D |
| 14.3 | the date and time the complaint was reported; | N/A | Not Applicable | Sighted Complaints log 2020. | Column A includes the date. |
| 14.4 | the date and time of the event(s) that led to the complaint; | N/A | Not Applicable | Sighted Complaints log 2020. | Column B there was not always a date or time, however entries are from outside the audit period. |
| 14.5 | the contact details of the complainant if known, or where no details are provided a note to that effect; | N/A | Not Applicable | Sighted Complaints log 2020. | Column F (empty) |
| 14.6 | the nature of the complaint; | N/A | Not Applicable | Sighted Complaints log 2020. | Column G |
| 14.7 | the nature of event(s) giving rise to the complaint; | N/A | Not Applicable | Sighted Complaints log 2020. | Column G (doesn't specifically request the nature of event(s) giving rise to the complaint) |
| 14.8 | prevailing weather conditions at the time (where relevant to the complaint) | N/A | Not Applicable | Sighted Complaints log 2020. | Column H |
| 14.9 | the action taken in relation to the complaint, including any follow-up contact with the complainant; and | N/A | Not Applicable | Sighted Complaints log 2020. | Column I - Investigation and Outcome |
| 14.10 | if no action was taken, why no action was taken. | N/A | Not Applicable | Sighted Complaints log 2020. | Column I - Investigation and Outcome (doesn't specifically request if no action was taken, why no action was taken.) OBS: Update the complaints log with a prompt in the event that if no action was taken, to state why no action was taken. |
| EARLY SURRENDER OF LICENCE | | | | | |
| 15 | Any reports, records or other information required or able to be provided by the licensee under this licence must be submitted to the Administering Agency prior to the licensee surrendering the licence. If the date on which a report, record or other information is required falls after the date the licensee requests to surrender this licensee, the licensee must provide the report, record or information as far as possible using data available to the licensee up to and including the date the request to surrender the licence is made. | N/A | Not Applicable | | This licence ended on 28 April 2021 and the new licence WDL174-12 commenced outside the audit period on 25 May 2021. While there was a period where the licence was discontinuous, the WDL is not considered to have been surrendered. |

Waste Discharge Licence Compliance Workbook - Operator 2021

| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---------------|--|-------|------------------------|---|---|
| | OPERATIONAL | | | | |
| 16 | The licensee must, without limiting any other condition of this licence, in conducting the activity do all things reasonable and practicable to ensure the activity does not adversely affect the Declared Beneficial Uses and Objectives and Sites of Conservation Significance as declared from time to time, including those applying to: | 4 | Full Compliance | Waste Discharge Licence 174-11 Monitoring Report 1 May 2020 to 30 April 2021. EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 section 6.5 states "Based on the review of surface water quality monitoring data between 1 May 2020 and 30 April 2021, MRM continue to implement effective controls to minimise the risk of environmental harm of downstream receiving waters due to Mine operations. The review concluded that the beneficial uses and community values of the McArthur River continue to be protected from potential mining derived impacts. There were no mine derived SSTV exceedances or non-compliances recorded at the SW11 compliance point in the McArthur River during the reporting period. The SSTV exceedances recorded at SW11 during the reporting period were unrelated to mine activities and were a result of natural river processes and contributions from sources upstream of the Mine." |
| . | McArthur River Area: Aquatic ecosystem protection, recreational water quality and aesthetics (Gazette references G9 11 March 1998 and G20 27 May 1998); | 4 | Full Compliance | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 Section 1.2.3 includes Aquatic ecosystem protection, recreational water quality and aesthetics. |
| . | McArthur River Catchment Area: Environment, cultural and riparian (Gazette references G10 14 March 2001); | 4 | Full Compliance | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 Section 1.2.3 includes McArthur River Catchment Area: environment, cultural and riparian. |
| . | SOCS Number 33: Sir Edward Pellew Island group; | 4 | Full Compliance | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 Section 1.2.3 includes Sir Edward Pellow Island group (SOCS No. 33). |
| . | SOCS Number 34: McArthur River coastal floodplain; and | 4 | Full Compliance | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 Section 1.2.3 includes McArthur River coastal floodplain (SOCS No. 34). |
| . | SOCS Number 35: Borroloola area. | 4 | Full Compliance | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 | EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 Section 1.2.3 includes Borroloola area (SOCS No. 35). |
| 17 | The licensee must ensure any plant and equipment used by the licensee in conducting the activity: | | Refer to subconditions | Mobile Maintenance Department Guideline (GDL-3200003 - Mobile Maintenance). Calibration procedure (PRO-2200044 - Calibration). Example of NSW signed calibration procedure (PRO-2200023 NSW_Signed_KL). Field sheet for the first discharge of the 20/21 wet season (NSW201221DD_UD - Field sheet). Template for Pre-start Checklist for the vessel (Polycraft Prestart). | Procedure PRO-2200023 Natural Surface Water (NSW) Monitoring Procedure is version 1 dated 17Apr20. Using helicopters instead of ATVs for during the wet season. Use an external contractor for helicopters. Sighted - Mobile Maintenance Department Guideline (October 2014). |
| 17.1 | is reasonably fit for purpose and use to which it is put; | 4 | Full Compliance | Mobile Maintenance Department Guideline (GDL-3200003 - Mobile Maintenance). Calibration procedure (PRO-2200044 - Calibration). Example of NSW signed calibration procedure (PRO-2200023 NSW_Signed_KL). Template for Pre-start Checklist for the vessel (Polycraft Prestart). Polycraft Prestart Form - Signed for 1Feb2021 and 22Apr2021. Calibration Report 210923 Unit 1 KL. | Sighted signed NSW Monitoring Procedure (PRO-2200023 NSW) acknowledgement 9 February 2021. OBS: The calibration report provided 210923 Unit 1 KL appears to be dated 23 Sep 2021, which is outside the audit period. YSI ProDSS Calibration and Use Procedure PRO-2200044 includes the requirement to save calibration sheets. |
| 17.2 | is maintained; and | 4 | Full Compliance | Mobile Maintenance Department Guideline MIN-MTC-GDL-1020-0003. Calibration procedure PRO-2200044. Example of NSW signed calibration procedure (PRO-2200023 NSW_Signed_KL) dated 9Feb21. Template for Pre-start Checklist for the vessel (Polycraft Prestart). Polycraft Prestart Form - Signed for 1Feb2021 and 22Apr2021. Internal email FW: Request to discharge dated 30Dec2020. Evidence of maintenance of the Siphons was provided in terms of an email (Internal email FW: Request to discharge dated 30Dec2020) discussing replacement of fittings for the siphons on 25Dec2020. | |

Waste Discharge Licence Compliance Workbook - Operator 2021

| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|----------------------------|--|-------|------------------|--|---|
| 17.3 | is operated by a person trained to use the plant and equipment. | 4 | Full Compliance | <p>Mobile Maintenance Department Guideline (GDL-3200003 - Mobile Maintenance). Calibration procedure (PRO-2200044 - Calibration) version 1 dated 18Dec20. Example of NSW signed calibration procedure (PRO-2200023 NSW_Signed_KL) dated 9Feb21. Field sheet for the first discharge of the 20/21 wet season (NSW201221DD_UD - Field sheet). Procedure PRO-2200023 Natural Surface Water (NSW) Monitoring Procedure is version 1 dated 17Apr20.</p> <p>The Calibration procedure (PRO-2200044 - Calibration) and NSW Monitoring Procedure (PRO-2200023) includes in Section 3 "Only operate equipment if trained and authorised".</p> <p>The Independent Monitor checked the field sheet for the first discharge of the 20/21 season, which occurred on 20Dec2021. The Operator was unable to provide the signed calibration procedure for one of the samplers. Signed procedures for other team members were available. The Independent Monitor was advised that the individual has undertaken the training and it is an administrative issue that the signed procedure cannot be located.</p> | OBS: Improve record keeping associated with ensuring all personnel have completed training in necessary procedures. |
| 18 | No change, replacement or alteration of plant and equipment is permitted if the change, replacement or alteration increases the risk of environmental harm for the licenced activity, unless approved by the Administering Agency. | N/A | Not Applicable | | Advised by Operator there have been no changes over the audit period. Any change could be requested by a WDL renewal or licence amendment application. During the interview, the Operator advised the Independent Monitor that they are in the process of preparing a licence amendment to revise trigger values based on ecotox - for example to lower the trigger values. The Independent Monitor did not note any inconsistencies between the monitoring undertaken and the WDL. |
| 19 | The licensee must submit a Dredging and Dredge Spoil Management Plan to the Administering Agency 20 business days prior to the commencement of any dredging activities. | N/A | Not Applicable | | Advised by the Operator that no dredging has occurred within the audit period. Last dredging was in 2014. |
| 20 | The licensee must comply with the Dredging and Dredge Spoil Management Plan. | N/A | Not Applicable | | Advised by the Operator that no dredging has occurred within the audit period. Last dredging was in 2014. |
| DISCHARGES | | | | | |
| Discharges to water | | | | | |
| 21 | This licence authorises discharge to water from the authorised discharge point(s) as identified in Table 2 and Appendix 2, and as otherwise allowed in accordance with the conditions of this licence. | | - | | General - N/A |

Waste Discharge Licence Compliance Workbook - Operator 2021

| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|--------------------------------------|---|-------|------------------|---|---|
| 22 | The licensee must ensure that all discharge events at each authorised discharge point consist only of waste from the source(s) as specified in Table 2. | 4 | Full Compliance | <p>Monthly Discharge Monitoring Report – December 2020 Monthly Discharge Monitoring Report – January 2021 Monthly Discharge Monitoring Report – February 2021 Monthly Discharge Monitoring Report – March 2021 Email from DEPWS to Operator dated 16Apr21 subject Re: MRM Final Adaptive Management Plan and Environment Monitoring Program. EMR 2020 - 2021 EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21. DEPWS Comments on MRM WDL174-12 Amendment included in email DEPWS to Operator subject RE: MRM - WDL Monitoring Report and Annual Return dated 15Sep2021.</p> <p>EMR 2020- 2021 Section 4.1.3 states "Table 24 presents the releases from the Mine Levee Discharge Point(s) (MLDP), South-East Levee Discharge Point (SEL1 DP) and the Water Management Dam Release Point (WMD RP) to the McArthur River between 1 May 2020 and 30 April 2021. A total of approximately 2,037.7 ML was released from the authorised discharge and release points during the reporting period. This included approximately:</p> <ul style="list-style-type: none"> • 711.3 ML via the MLDP (from TSF WMD and OP P2); • 18.0 ML via the SEL1 DP (from NOEF SEL1); and • 1,308.4 ML via the WMD RP (from the TSF WMD siphons). <p>Managed releases from the MLDP and SEL1 DP were undertaken in accordance with conditions of Waste Discharge Licence (WDL) 174-11. Managed releases from the WMD RP were undertaken in accordance with conditions of MRM's Variation of Authorisation 0059."</p> <p>As an example, the Independent Monitor reviewed the Monthly Discharge Monitoring Report – December 2020 Table 1 and discharges were only at approved locations from approved sources.</p> | <p>The Operator advised "An additional water transfer point (WMD Siphons) is located on the south-western wall of the WMD. At the time this location was planned, MRM approached DPIR who advised that as the release point was located within the mining lease, its regulation could be managed under the VOA. MRM also approached DENR during a site visit in 2018, and were given verbal confirmation of this approach by the senior DENR officer present. In amending the VOA, DPIR consulted DENR as part of their due process. DENR have not requested that MRM have the WMD Siphons added to the WDL.</p> <p>DEPWS Comments on MRM WDL174-12 Amendment "The discharge of waste water from the Water Management Dam is regulated by Department of Industry, Tourism and Trade, who is responsible for management of wastewater within the mining leases of MRM."</p> <p>Operator advised there is only a discharge from the Dredge Spoil Drain (BBDDP) location related to dredging and no dredging has occurred therefore no discharge.</p> <p>Refer to rows below for the Table 2: Authorised Discharge Points.</p> |
| Table 2: Authorised Discharge Points | Mine Levee Discharge Point(s) (MLDP) (Mine levee pumping outlets) Location - Easting: 618661 Northing: 8183459 1. Rain water collecting in the old McArthur River Channel (NC1A) inside the Mine levee. | - | - | | This is the Table 2: Authorised Discharge Points audited in condition 22 above. |
| Table 2: Authorised Discharge Points | Mine Levee Discharge Point(s) (MLDP) (Mine levee pumping outlets) Location - Easting: 618661 Northing: 8183459 2. Groundwater from dewatering bores around main pit collected in and then discharged from Pond 2 (P2). | - | - | | This is the Table 2: Authorised Discharge Points audited in condition 22 above. |
| Table 2: Authorised Discharge Points | Mine Levee Discharge Point(s) (MLDP) (Mine levee pumping outlets) Location - Easting: 618661 Northing: 8183459 3. Water from the Water Management Dam. | - | - | | This is the Table 2: Authorised Discharge Points audited in condition 22 above. |
| Table 2: Authorised Discharge Points | Mine Levee Discharge Point(s) (MLDP) (Mine levee pumping outlets) Location - Easting: 618661 Northing: 8183459 4. Treated water from the Water Treatment Plant that will be stored in (P2) prior to discharge from the MLDP. | - | - | | This is the Table 2: Authorised Discharge Points audited in condition 22 above. |
| Table 2: Authorised Discharge Points | South-East Levee 1 Discharge Point (SEL1 DP) Location - Easting: 618702 Northing: 8184377 Rain water collecting inside the South Eastern Levee and separated from all contaminated seepages. Discharges are pumped via pipe line to Barney Creek and then flow into the McArthur River. Discharge can only occur when flow as measured in the McArthur River at the downstream gauging station is in excess of 20m ³ /s. | - | - | | This is the Table 2: Authorised Discharge Points audited in condition 22 above. |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---|---|-------|------------------------|---|---|
| Table 2: Authorised Discharge Points | <p>Dredge Spoil Drain (BBDDP) Location - Easting: 649514 Northing: 8271536 The dredge spoil perimeter drain exit point (BBDDP) is located on the tidal mudflats to the east of the loading facility and within a tidal area. The drain is constructed around the external boundary of the dredge spoil cells to intercept saline water and extends approximately 400 metres from the final cell. The drain receives overflow from: 1. the final dredge spoil emplacement area cell when in operation; 2. saline water from the perimeter drain which surrounds the dredge spoil emplacement area. At BBDDP passive releases flow across the intertidal flats to the Gulf of Carpentaria via the Bing Bong navigation channel. For the purposes of clarity this licence does not authorise dredging and/or pumping or disposal of dredge slurry to the Dredge Spoil Encasement Area.</p> | | - | | This is the Table 2: Authorised Discharge Points audited in condition 22 above. |
| 23 | The licensee must, for discharge points MLDP and SEL1 DP, install, operate and maintain a device to measure and record, for each discharge event: | | Refer to subconditions | | |
| 23.1 | the time the discharge commenced and the duration of the discharge; | 4 | Full Compliance | <p>Waste discharge procedure PRO-2200035 Version 2.0 16Nov2019 Discharge Spreadsheet (2020-21 Waste Discharge Records and Loads Tracking). Monthly Discharge Monitoring Report – December 2020 Monthly Discharge Monitoring Report – January 2021 Monthly Discharge Monitoring Report – February 2021 Monthly Discharge Monitoring Report – March 2021</p> | Discharge Spreadsheet (2020-21 Waste Discharge Records and Loads Tracking) includes the discharge commencement and duration. |
| 23.2 | the discharge rate of flow; and | 4 | Full Compliance | <p>Waste discharge procedure PRO-2200035 Version 2.0 16Nov2019 Discharge Spreadsheet (2020-21 Waste Discharge Records and Loads Tracking). Photo of flow meter (18-FIT-2831). Monthly Discharge Monitoring Report – December 2020 Monthly Discharge Monitoring Report – January 2021 Monthly Discharge Monitoring Report – February 2021 Monthly Discharge Monitoring Report – March 2021</p> | <p>Sighted teledata real time flow in the McArthur River downstream of site SW11.</p> <p>The Operator advised that the flow data is recorded continuously, and can be checked manually in the field.</p> <p>Discharge Spreadsheet (2020-21 Waste Discharge Records and Loads Tracking) includes the discharge rate of flow and column D includes the measurement type "flow meter".</p> |
| 23.3 | the discharge volume. | 4 | Full Compliance | <p>Discharge Spreadsheet (2020-21 Waste Discharge Records and Loads Tracking). Monthly Discharge Monitoring Report – December 2020 Monthly Discharge Monitoring Report – January 2021 Monthly Discharge Monitoring Report – February 2021 Monthly Discharge Monitoring Report – March 2021</p> | Discharge Spreadsheet (2020-21 Waste Discharge Records and Loads Tracking) includes the discharge volume and column D includes the measurement type "flow meter". |
| 24 | The licensee must ensure that the discharge from all discharge events at each authorised discharge point does not: | | Refer to subconditions | | Refer to sub conditions |
| 24.1 | contain any floating debris, oil, grease, petroleum hydrocarbon sheen, scum, litter or other objectionable matter; | 4 | Full Compliance | <p>Upon Discharge field sheets for: Dec 20 (NSW201221DD_UD - Field sheet, NSW201223DD_UD - Field sheet, NSW201227DD_UD - Field sheet, NSW201231BM_UD - Field sheet) March 21 (NSW210322EP_UD- Field sheet).</p> <p>Sighted Complaints log 2020.</p> | <p>The Operator advised the Independent Monitor "When completing the Upon Discharge Field sheet the MRM technicians note any floating debris, odours, blooms etc in the comments section of the field sheet. The comments column prompts the technician to consider these potential occurrences by listing examples in the column heading which is: Comments e.g. Dying veg, algal blooms, animals, fish/insects, odour, surface sheen, litter, floating debris." No comments were observed by the Independent Monitor on the field sheets provided. However, the relevant prompts are included.</p> <p>The complaints log does not include any complaints about discharge events causing impacts, which is consistent with compliance.</p> |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---------------|--|-------|------------------|---|---|
| 24.2 | cause or generate odours which would adversely affect the use of surrounding waters; | 4 | Full Compliance | <p>Upon Discharge field sheets for: Dec 20 (NSW201221DD_UD - Field sheet, NSW201223DD_UD - Field sheet, NSW201227DD_UD - Field sheet, NSW201231BM_UD - Field sheet) March 21 (NSW210322EP_UD- Field sheet).</p> <p>Sighted Complaints log 2020.</p> | <p>The Operator advised the Independent Monitor "When completing the Upon Discharge Field sheet the MRM technicians note any floating debris, odours, blooms etc in the comments section of the field sheet. The comments column prompts the technician to consider these potential occurrences by listing examples in the column heading which is: Comments e.g. Dying veg, algal blooms, animals, fish/insects, odour, surface sheen, litter, floating debris." No comments were observed by the Independent Monitor on the field sheets provided.</p> <p>The complaints log does not include any complaints about discharge events causing impacts, which is consistent with compliance.</p> |
| 24.3 | cause algal blooms in the receiving water; | 4 | Full Compliance | <p>Upon Discharge field sheets for: Dec 20 (NSW201221DD_UD - Field sheet, NSW201223DD_UD - Field sheet, NSW201227DD_UD - Field sheet, NSW201231BM_UD - Field sheet) March 21 (NSW210322EP_UD- Field sheet).</p> <p>Sighted Complaints log 2020.</p> | <p>The Operator advised the Independent Monitor "When completing the Upon Discharge Field sheet the MRM technicians note any floating debris, odours, blooms etc in the comments section of the field sheet. The comments column prompts the technician to consider these potential occurrences by listing examples in the column heading which is: Comments e.g. Dying veg, algal blooms, animals, fish/insects, odour, surface sheen, litter, floating debris." No comments were observed by the Independent Monitor on the field sheets provided.</p> <p>The complaints log does not include any complaints about discharge events causing impacts, which is consistent with compliance.</p> |
| 24.4 | cause visible change in the behaviour of fish or other aquatic organisms in the receiving water; | 4 | Full Compliance | <p>Upon Discharge field sheets for: Dec 20 (NSW201221DD_UD - Field sheet, NSW201223DD_UD - Field sheet, NSW201227DD_UD - Field sheet, NSW201231BM_UD - Field sheet) March 21 (NSW210322EP_UD- Field sheet).</p> <p>Sighted Complaints log 2020.</p> | <p>The Operator advised the Independent Monitor "When completing the Upon Discharge Field sheet the MRM technicians note any floating debris, odours, blooms etc in the comments section of the field sheet. The comments column prompts the technician to consider these potential occurrences by listing examples in the column heading which is: Comments e.g. Dying veg, algal blooms, animals, fish/insects, odour, surface sheen, litter, floating debris." No comments were observed by the Independent Monitor on the field sheets provided.</p> <p>The complaints log does not include any complaints about discharge events causing impacts, which is consistent with compliance.</p> |
| 24.5 | cause mortality of fish or other aquatic organisms; or | 4 | Full Compliance | <p>Upon Discharge field sheets for: Dec 20 (NSW201221DD_UD - Field sheet, NSW201223DD_UD - Field sheet, NSW201227DD_UD - Field sheet, NSW201231BM_UD - Field sheet) March 21 (NSW210322EP_UD- Field sheet).</p> <p>Sighted Complaints log 2020.</p> | <p>The Operator advised the Independent Monitor "When completing the Upon Discharge Field sheet the MRM technicians note any floating debris, odours, blooms etc in the comments section of the field sheet. The comments column prompts the technician to consider these potential occurrences by listing examples in the column heading which is: Comments e.g. Dying veg, algal blooms, animals, fish/insects, odour, surface sheen, litter, floating debris." No comments were observed by the Independent Monitor on the field sheets provided.</p> <p>The complaints log does not include any complaints about discharge events causing impacts, which is consistent with compliance.</p> |
| 24.6 | cause adverse impacts on plants. | 4 | Full Compliance | <p>Upon Discharge field sheets for: Dec 20 (NSW201221DD_UD - Field sheet, NSW201223DD_UD - Field sheet, NSW201227DD_UD - Field sheet, NSW201231BM_UD - Field sheet) March 21 (NSW210322EP_UD- Field sheet).</p> <p>Sighted Complaints log 2020.</p> | <p>The Operator advised the Independent Monitor "When completing the Upon Discharge Field sheet the MRM technicians note any floating debris, odours, blooms etc in the comments section of the field sheet. The comments column prompts the technician to consider these potential occurrences by listing examples in the column heading which is: Comments e.g. Dying veg, algal blooms, animals, fish/insects, odour, surface sheen, litter, floating debris." No comments were observed by the Independent Monitor on the field sheets provided.</p> <p>The complaints log does not include any complaints about discharge events causing impacts, which is consistent with compliance.</p> |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---------------|--|-------|------------------|--|--|
| | MONITORING | | | | |
| 25 | The licensee must conduct surface water monitoring in accordance with Appendix 4. | 4 | Full Compliance | <p>MRM Environmental Monitoring Schedule 2021 (MRM Environmental Monitoring Schedule 2021) MRM Environmental Monitoring Schedule 2020 (2019-20 MRM Environmental Monitoring Schedule I001 Rev2) Monitoring results spreadsheet for inclusion within the 2020/21 EMR (titled NSW) EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 Internal Operator email dated 9Jul21 FW:Monitoring compliance with WDL 174-11, inclusive of pdf 20-21 continuous data (note this was a forwarded email originally dated 21Jun21). Email Operator to DEPWS RE: MRM COVID-19 travel restrictions and WDL 174-11 compliance dated 26May2020. Waste Discharge Licence 174-11 Monitoring Report 1 May 2020 to 30 April 2021.</p> <p>Email trail provided demonstrates the Operator has advised DEPWS of the inability to monitor at SW08 and SW32 in the community due to the COVID-19 travel restrictions initially on 13Apr2020 with subsequent communications through to 26May2020. This is not considered a non-compliance due to government direction and liaison with DEPWS.</p> | <p>Surface Water & Fluvial Sed in MRM Monitoring Schedule version 2019-20 and Natural Surface in MRM Environmental Monitoring Schedule 2021 appear predominantly consistent with this condition. However, they do not include the requirement for weekly monitoring at Bing Bong Dredge Spoil Drain (BBDDP) when dredging is occurring. BBDDP appears to be scheduled to be monitored monthly when flowing but does not appear to be scheduled to be monitored weekly when dredging is occurring, which is required by Appendix 4. Independent Monitor understands that no dredging has occurred during the audit period.</p> <p>EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21 supports compliance.</p> <p>Monitoring results spreadsheet for inclusion within the 2020/21 EMR appears to show monitoring as required by Appendix 4 (except for flow monitoring that is reported elsewhere).</p> <p>Water flow for SW11 recorded during the reporting period was provided (20-21 continuous data). The internal Operator email dated 9Jul21 FW:Monitoring compliance with WDL 174-11 showed that data was flow captured at SW11 99% of the time and this is compliant.</p> <p>OBS: Add a note to the internal Operator Monitoring Schedule for Bing Bong Dredge Spoil Drain to communicate that monitoring frequency is required to be increased to weekly during any future dredging activities.</p> |
| 26 | The licensee must conduct fluvial sediment monitoring in accordance with Appendix 5. | 4 | Full Compliance | <p>EMR 2020 -2021 Appendix K - Monitoring of Select Analytes & Lead in Fluvial Sediments & Aquatic Fauna 2020 Rev 1 Email Operator to DEPWS RE: MRM COVID-19 travel restrictions and WDL 174-11 compliance dated 26May2020. Appendix V - Metals and Metalloids in Near Shore Sediment, 2020</p> <p>Email trail provided demonstrates the Operator has advised DEPWS of the inability to monitor at SW08 and SW32 in the community due to the COVID-19 travel restrictions initially on 13Apr2020 with subsequent communications through to 26May2020. This is not considered a non-compliance due to government direction and liaison with DEPWS.</p> <p>There is a requirement for annual fluvial sediment sampling in Appendix 5 and the IndoPacific report on fluvial sediment, Jan 2021 is evidence of compliance with this condition. The report details the analysis of aquatic fauna and fluvial sediment collected within the McArthur River catchment in March and May 2020. The May event is within the audit period. Section 2.2.1 of the report states "The sampling of fluvial deposited bed sediments was undertaken in accordance with the following guidelines and documents: [...] Waste Discharge Licence WDL 174-10." Noting the old licence number is included.</p> <p>Appendix V - Metals and Metalloids in Near Shore Sediment includes the BBDDP sediment sample.</p> | <p>IndoPacific report on fluvial sediment, Jan 2021 "In response to the COVID-19 outbreak, [...] To continue operations, MRM was required by the NT government to develop a COVID-19 Health Management Plan (HMP). [...] As part of the COVID 19 HMP, MRM deemed any sites that were outside of lease boundaries AND those that may be accessed by the public were excluded from all MRM monitoring programs. In relation to this program, the section of McArthur River from FS08, upstream to FS32 were excluded completely from the current survey."</p> <p>The Operator advised "the only excluded sites required by WDL 174-11 (see Appendix 5 Table 1) were FS08 and FS32, which were replaced by the site '\$800 Pool' as the downstream site. The \$800 Pool sample has the same function as FS08 and FS32, being a site downstream of the mineral lease." This is also stated in EMR 2020 -2021 Appendix K - Monitoring of Select Analytes & Lead in Fluvial Sediments & Aquatic Fauna 2020 section 2 "Additionally, fluvial sediment was opportunistically collected with the aid of helicopter from the site known as \$800 Pool, located approximately halfway between the Mine and Borroloola, to provide some indication of analyte concentrations downstream of MRM's mineral lease boundary. "</p> |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
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| 27 | The licensee must conduct biota monitoring in accordance with Appendix 6. | 4 | Full Compliance | <p>CONCENTRATIONS OF SELECT BIOAVAILABLE METALS AND LEAD ISOTOPE RATIOS WITHIN OCEAN WATER IN THE VICINITY OF THE BING BONG LOADING FACILITY AS MONITORED BY DIFFUSIVE GRADIENTS IN THIN FILMS: 2019-2020 (20009 DGT monitoring at the BBLF 2019_2020 Rev 0) This sampling was the previous audit period but reported in this period and appendix 6 refers to a report rather than sampling.</p> <p>EMR 2020 -2021 Appendix U - Metals and Lead in Marine Water (DGT) Monitoring 2020-2021 EMR 2020 - 2021 Appendix P - Annual Marine Monitoring Program, November 2020 EMR 2020 - 2021 Appendix K - Monitoring of Select Analytes & Lead in Fluvial Sediments & Aquatic Fauna 2020 Rev 0 EMR 2020 - 2021 Appendix O - Annual Seagrass Survey of the Bing Bong Loading Facility 2020 EMR 2020 - 2021 Appendix L - Aquatic Fauna Monitoring Early Dry Season 2020 EMR 2020 - 2021 Appendix M - Aquatic Fauna Monitoring Late Dry Season 2020 EMR 2020 - 2021 Appendix J - Freshwater Aquatic Macroinvertebrate Assessment 2020 Bing Bong Dredge Spoil Saline Impact Assessment 2020 MRM Environmental Monitoring Schedule 2021</p> | <p>Seagrass and vegetation monitoring are not listed in the MRM Environmental Monitoring Schedule 2021 (MRM Environmental Monitoring Schedule 2021), while the other programs are listed. However, this monitoring has been undertaken and reported on in the audit period as demonstrated by 20010_Bing Bong Dredge Spoil Saline Impact Assessment 2020_Rev 0 and EMR 2020 - 2021 Appendix O - Annual Seagrass Survey of the Bing Bong Loading Facility 2020.</p> <p>OBS: Review the Environmental Monitoring Schedule 2021 to ensure seagrass and vegetation monitoring is included, if required.</p> |
| 28 | The licensee must ensure that all samples and field environmental data are representative of the conditions at the time of sampling. | 4 | Full Compliance | <ul style="list-style-type: none"> •PRO-2200023 Natural Surface Water Monitoring Procedure •PRO-2200024 Groundwater Monitoring Procedure •PRO-2200025 Artificial Surface Water Monitoring Procedure •PRO-2200029 Fluvial Sediment Monitoring Procedure <p>Procedure Register for the Monitoring Team (Procedures and SWIs register).</p> <p>Procedure acknowledgment forms (signed copies) for various monitoring procedures by Operator monitoring team members were provided with the following reviewed:</p> <ul style="list-style-type: none"> •BM - NSW and ASW monitoring procedures •DD - NSW and ASW monitoring procedures •EP - NSW and ASW monitoring procedures •GL - NSW and ASW monitoring procedures •KL - NSW and ASW monitoring procedures | <p>The NSW and ASW monitoring procedures describe the methods and steps to be used for the measurement of field readings as well as for the collection, preservation and transport of the samples in agreement with the Surface Water Sampling Australian Standard described in AS / NZS 5667.11:1998. The procedures doesn't specifically state anything like "ensure that all samples and field environmental data are representative of the conditions at the time of sampling". However, they include steps to ensure that sampling is not representative of contamination from sampling and to sample 15-20 cm below the surface, where possible.</p> <p>The Groundwater Monitoring Procedure requires not disturbing sediments, sampling from the correct depth, waiting for stabilisation of parameters and prevention of contamination techniques.</p> <p>The Operator advised the Independent Monitor that all MRM technicians are trained in the environmental monitoring procedure for the sampling activities they undertake in the field and the signed forms provided support this.</p> <p>OBS: Consider including "ensure that all samples and field environmental data are representative of the conditions at the time of sampling" in the monitoring procedures or field sheet as part of the annual review.</p> |
| 29 | The licensee must ensure that all samples and field environmental data are collected in accordance with recognised Australian Standards and guidelines (such as AS/NZS 5667, ANZECC/ARMCANZ). | 4 | Full Compliance | <ul style="list-style-type: none"> •PRO-2200023 Natural Surface Water Monitoring Procedure •PRO-2200024 Groundwater Monitoring Procedure •PRO-2200025 Artificial Surface Water Monitoring Procedure •PRO-2200029 Fluvial Sediment Monitoring Procedure •PRO-2200044 YSI ProDSS Calibration and Use Procedure <p>Procedure acknowledgment forms (signed copies) for various monitoring procedures by all Operator monitoring team members were provided with the following reviewed:</p> <ul style="list-style-type: none"> •BM - Calibration, NSW and ASW monitoring procedures •DD - Calibration, NSW and ASW monitoring procedures •EP - Calibration, NSW and ASW monitoring procedures •GL - Calibration, NSW and ASW monitoring procedures •KL - Calibration, NSW and ASW monitoring procedures | <p>The Natural Surface Water (NSW) Monitoring Procedure and Artificial Surface Water (ASW) Monitoring Procedure state that they are "in agreement with Surface Water Sampling Australian Standard described in AS / NZS 5667.11:1998".</p> <p>Fluvial Sediment Monitoring Procedure "This procedure describes the methods and steps to be used for the collection, preservation and transport of the samples in agreement with the Sampling guidance on sampling of bottom sediments (AS/NZS 5667.12:1999)".</p> <p>The Groundwater Monitoring Procedure mentions the requirement to be "in agreement with the Groundwater Sampling Australian Standard described in AS / NZS 5667.11:1998".</p> <p>Team members are required to sign acknowledgment of the procedures.</p> |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
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| 30 | The licensee must ensure that all monitoring samples are analysed at a laboratory with current NATA accreditation or equivalent, for the parameters to be analysed in the laboratory. | 4 | Full Compliance | <ul style="list-style-type: none"> •MRM Environmental Lab (190909 MRM EL Services Agreement) •ALS (116 v7 - McArthur River Mine Glencore Tender - 2021 suites) •Intertek NTEL (21001 v1 MRMENV water suites 1-5 & 8) •PRO-2200023 Natural Surface Water Monitoring Procedure •PRO-2200024 Groundwater Monitoring Procedure •PRO-2200025 Artificial Surface Water Monitoring Procedure •PRO-2200029 Fluvial Sediment Monitoring Procedure <p>www.nata.com.au/accredited-facility (listed McArthur River Mining Environmental Laboratory) 14Jul21 ENV2000246 report (MRM Environmental Laboratory results for samples received on 6/12/20).</p> <p>The Operator used the following NATA accredited labs for the parameters to be analysed in a laboratory:</p> <ul style="list-style-type: none"> •MRM Environmental Lab (190909 MRM EL Services Agreement) •ALS (116 v7 - McArthur River Mine Glencore Tender - 2021 suites) •Intertek NTEL (21001 v1 MRMENV water suites 1-5 & 8) <p>The three agreements provided (MRM Environmental Laboratory, Intertek NTEL or ALS) indicate that the laboratories are NATA accredited for sampling required, with the exception of Intertek, which is not accredited for Fe(II) - Filtered Ferrous Iron or Microbiological – E.coli, Total Coliforms, Heterotrophic Plate Count. However, these are not required by the WDL.</p> <p>ENV2000246 report (MRM Environmental Laboratory results for samples received on 6/12/20. Note that turbidity is the only non-NATA result. Turbidity is not required to be undertaken at a laboratory so this is compliant.</p> | <p>Advised by the Operator that the site laboratory has NATA accreditation. Sighted results from January 2021 including NATA accreditation on them. Operator advised that the MRM Environmental Laboratory has NATA accreditation. However, if required they send samples to ALS Brisbane. Independent Monitor checked the NATA website and confirmed MRM Environmental Laboratory accreditation 14Jul21.</p> <p>The Natural Surface Water (NSW), Artificial Surface Water and Fluvial Sediment monitoring procedures don't include the requirement to submit to a NATA accredited or equivalent laboratory. However, the monitoring schedule does state what suites go to MRM Environmental Laboratory, Intertek NTEL or ALS.</p> <p>OBS: Consider adding the requirement for "all monitoring samples to be analysed at a laboratory with current NATA accreditation or equivalent, for the parameters to be analysed in the laboratory" to the monitoring procedures as part of the annual review.</p> |
| 31 | The licensee must ensure that any proposed revisions to the monitoring required by Condition 25 to 27 (other than typographical changes or revisions to formatting or referencing) are: | N/A | Not Applicable | | Advised by the Operator that there were no changes and none have been identified by the Independent Monitor in the audit. |
| 31.1 | reviewed by a suitably qualified professional, who must produce a written report about their review; | N/A | Not Applicable | | Advised by the Operator that there were no changes and none have been identified by the Independent Monitor in the audit. |
| 31.2 | submitted to the Administering Agency with justification for revisions; and | N/A | Not Applicable | | Advised by the Operator that there were no changes and none have been identified by the Independent Monitor in the audit. |
| 31.3 | submitted to the Administering Agency, in both hard copy and electronic form (with a complete copy of the qualified professional's review), 20 business days prior to the proposed implementation date. | N/A | Not Applicable | | Advised by the Operator that there were no changes and none have been identified by the Independent Monitor in the audit. |
| 32 | The licensee must for all land based water monitoring points specified in the monitoring documents: | | Refer to subconditions | | Refer to sub conditions |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
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| 32.1 | install and maintain appropriate identification signage so that they are reasonably identifiable at all times; and | 3 | Part Compliance (High) | <p>Identification signage inspection 2021 and associated photos (conducted in May 2021, the month after the audit period).</p> <p>The photos provided showed that the signage says "Environmental Monitoring Site" and then an identifier for the specific site. Photos were provided for all land based sites with the exception of SW08. The photos indicate that the signage is not new and the Independent Monitor accepts this as evidence for the audit period.</p> <p>The lack of a sign at SW08 is a partial compliance.</p> | <p>The Operator advised "Safe access and appropriate signage was maintained during the reporting period for all land based water monitoring points specified in the monitoring documents."</p> <p>The Operator advised "The annual inspection of the identification signs was completed during May 2021. During the inspection it was confirmed that all land based water monitoring points contain identification signs stating "Environmental Monitoring Site" are installed at the access areas to the MRM Mineral Leases. SW32 and SW08 Identification signage was not installed due to being off the mine lease and at public locations."</p> <p>SW32 is not a land based site so it does not require signage.</p> <p>The Operator advised "Signage was erected at SW08 in 2017, however was stolen/went missing. Given this area is frequently used by the public, MRM does not consider it appropriate to install signage for the purpose of this condition in this area. Additionally, the site is easily identifiable by a rockbar control next to the Borroloola Bridge. The erection of signage at this location would be of limited benefit."</p> <p>OFI: Install and maintain appropriate identification signage at SW08 or obtain agreement from DEPWS that a sign is not required.</p> |
| 32.2 | maintain safe access and egress, as is reasonable and practicable. | 4 | Full Compliance | Identification signage inspection 2021 and associated photos (Identification Signage Inspection 2021) | The Operator advised "Safe access and appropriate signage was maintained during the reporting period for all land based water monitoring points specified in the monitoring documents." |
| 33 | The licensee must ensure any samples collected in accordance with the monitoring documents or in connection with the activity or this licence, are obtained by, or under the supervision of a qualified sampler. | 4 | Full Compliance | <p>Procedure acknowledgment forms (signed copies) for various monitoring procedures by Operator monitoring team members were provided with the following reviewed:</p> <ul style="list-style-type: none"> •BM - NSW and ASW monitoring procedures •DD - NSW and ASW monitoring procedures •EP - NSW and ASW monitoring procedures •GL - NSW and ASW monitoring procedures •KL - NSW and ASW monitoring procedures | The Operator advised that the environment team acknowledge the procedures so are trained and the majority of the team are degree qualified and that subconsultants are suitably qualified (IndoPacific). IndoPacific are suitably degree qualified. |
| 34 | The licensee must ensure that, for each sample collected in accordance with the monitoring documents or the activity the following information must be recorded and retained: | | Refer to subconditions | | Refer to sub conditions |
| 34.1 | the date on which the sample was collected; | 4 | Full Compliance | <p>One example (samples taken 6Dec20) of a:</p> <ul style="list-style-type: none"> •Chain of Custody (NSW201206BM - Submission form) •Field sheet (NSW201206BM - Field sheet) •Laboratory report (excel - ENV2000246 report and pdf - ENV2000246 final report) | |
| 34.2 | the time at which the sample was collected; | 4 | Full Compliance | <p>One example (samples taken 6Dec20) of a:</p> <ul style="list-style-type: none"> •Chain of Custody (NSW201206BM - Submission form) •Field sheet (NSW201206BM - Field sheet) •Laboratory report (excel - ENV2000246 report and pdf - ENV2000246 final report) | |
| 34.3 | the location at which the sample was collected; | 4 | Full Compliance | <p>One example (samples taken 6Dec20) of a:</p> <ul style="list-style-type: none"> •Chain of Custody (NSW201206BM - Submission form) •Field sheet (NSW201206BM - Field sheet) •Laboratory report (excel - ENV2000246 report and pdf - ENV2000246 final report) | |
| 34.4 | the name of the person who collected the sample; | 4 | Full Compliance | <p>One example (samples taken 6Dec20) of a:</p> <ul style="list-style-type: none"> •Field sheet (NSW201206BM - Field sheet) | |
| 34.5 | the chain of custody forms relating to the sample; | 4 | Full Compliance | <p>One example (samples taken 6Dec20) of a:</p> <ul style="list-style-type: none"> •Chain of Custody (NSW201206BM - Submission form) | <p>Viewed a chain of custody form correctly completed for ASW samples on 17Jan21. Reviewed a chain of custody form correctly completed for 6Dec20.</p> <p>A signed copy of the chain of custody forms was not provided. However, the Operator advised the signed hard copies are sent to the laboratory and archived there.</p> |
| 34.6 | the field measurements (if any) and analytical results (if any) relating to the sample; and | 4 | Full Compliance | <p>One example (samples taken 6Dec20) of a:</p> <ul style="list-style-type: none"> •Field sheet (NSW201206BM - Field sheet) •Laboratory report (excel - ENV2000246 report and pdf - ENV2000246 final report) | |

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| 34.7 | laboratory quality assurance and quality control documentation. | 4 | Full Compliance | One example (samples taken 6Dec20) of a: •The QA/QC laboratory report for project 'ENV2000246' has been provided (see AA019487). | The Operator advised "The duplicate was submitted as a 'blind replicate', which provides a different sample code for a sample site. These two samples are then compared to highlight any variations in water qualities. The laboratory and field blank samples are also submitted 'blindly' i.e. name of sample is a number so the laboratory cannot identify it is a QAQC sample." |
| RECORDING AND REPORTING | | | | | |
| 35 | The licensee must keep records of all non-compliances with this licence. These records must be adequate to enable the licensee to comply with the non-compliance notification conditions of this licence. | 4 | Full Compliance | Incident, Exceedance and Non Compliance Register 2021 (Updated June 2021) | The Incident, Exceedance and Non Compliance Register 2021 (Updated June 2021) shows instances of non-compliance and notification to the Regulator. Non-compliances of exceedance on sample from 23/12/2020 (SW11 exceedance for NO3) and 31/12/2020 (SW11 exceedance for Al_F) included in the register. OBS: Include non-compliance associated with inability to record or report continuous flow at Glyde River in the Incident, Exceedance and Non Compliance Register. |
| 36 | The licensee must notify the Administering Agency of any non-compliance with this licence as soon as practicable after (and in any case within 24 hours after) first becoming aware of the non-compliance. | 3 | Part Compliance (High) | Incident, Exceedance and Non Compliance Register 2021 (Updated June 2021) Internal email to #AU McArthur River - Lab Reports subject ENV2000284 Final Report dated 1Jan2021. Internal email to #AU McArthur River - Lab Reports subject ENV2000284 Final Report dated 10Jan2021. Email from Operator to DEPWS subject MRM WDL 174-11 Notification of results triggering investigation dated 15Jan2021. Email DEPWS to Operator RE: MRM WDL 174-11 Notification of results triggering investigation dated 18Jan2021 The Incident, Exceedance and Non Compliance Register 2021 (Updated June 2021) shows instances of non-compliance and notification to the Regulator. Exceedance on sample from 23/12/2020 (SW11 exceedance for NO3) and 31/12/2020 (SW11 exceedance for Al_F) were non-compliances notified to DEPWS on 4Jan21 and 15Jan21 respectively. However, the emails providing the final laboratory results showed the final reports were provided on 1Jan2021 and 10Jan2021. Emails provided indicate that it was more than 24 hours from the laboratory issuing the final report before the Operator advised DEPWS of the two incidents reviewed by the Independent Monitor. | The Independent Monitor was advised by the Operator that "becoming aware" is from the point of the laboratory issuing the final report. In the 2020 Independent Monitor audit, it was identified that results for continuous flow recorded at the Glyde River could not be reported for the 2019/2020 audit period (because the logger was not able to be located/retrieved) as required by condition 62. The Operator obtained the 2019/2020 flow data from loggers after the wet season and therefore when they became aware of the non-compliance was in the current audit period. The Operator did not provide any evidence of notifying DEPWS of the inability to record continuous flow for the 2019/2020 period within 24 hours of becoming aware. Nor is it reported in the Incident, Exceedance and Non Compliance Register 2021, annual return or annual monitoring report as a non compliance. It is reported in the 2019-2020 annual return in terms of inability to comply with condition 45.4 related to Glyde River background loads. OFI: Investigate why notifications to DEPWS were occurring more than 24 hours after first becoming aware of the non-compliance (more than 24 hours after the final laboratory reports were emailed from the laboratory) and implement any actions to rectify findings. OFI: Notify DEPWS within 24 hours of becoming aware of non-compliances with this licence, including non-compliances relating to the inability to monitor continuous flow. Noting that while Condition 62 relating to monitoring continuous flow in the Glyde River and Emu Creek is no longer in WDL174-12 (i.e. the WDL for the next audit period), the requirement is now included as part of Condition 26 due to their inclusion in WDL Appendix 4 (Table 1). |
| 37 | The licensee must include in the notification of non-compliance the following information: | | Refer to subconditions | | Refer to sub conditions |
| 37.1 | when the non-compliance was detected and by whom; | 4 | Full Compliance | Email from Operator to DEPWS subject MRM WDL 174-11 Notification of results triggering investigation dated 15Jan2021. Internal email to #AU McArthur River - Lab Reports subject ENV2000284 Final Report dated 10Jan2021. The email notification advised that the non-compliance was detected 14Jan2021 by MRM Staff. However, the final laboratory report appears to have been emailed to MRM Staff on 10Jan2021. | OBS: Investigate why the date of detection does not correspond to the date the final laboratory results were emailed from the laboratory and implement any actions to rectify any findings. |
| 37.2 | the date and time of the non-compliance; | 4 | Full Compliance | Email from Operator to DEPWS subject MRM WDL 174-11 Notification of results triggering investigation dated 15Jan2021. | The email stated that the date and time of the subject result was "31/12/2020 at 11:38" |
| 37.3 | whether discharge was occurring at the time of the non-compliance and the source of the discharge; and | 4 | Full Compliance | Email from Operator to DEPWS subject MRM WDL 174-11 Notification of results triggering investigation dated 15Jan2021. | The email stated "Yes - discharge was occurring from the Water Management Dam (WMD) via the Mine Levee Discharge Point (MLDP) and WMD Release Point (RP)." |
| 37.4 | a date when an incident investigation report will be submitted to the Administering Agency. | 4 | Full Compliance | Email from Operator to DEPWS subject MRM WDL 174-11 Notification of results triggering investigation dated 15Jan2021. | The email stated "MRM will investigate the data surrounding the results and provide a report that meets the requirements of Condition 38 within 10 business days." |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
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| 38 | Within 10 business days of notifying the Administering Agency of any non-compliance, or a timing otherwise agreed by the Administering Agency, the licensee must provide the Administering Agency an investigation report that includes: | 4 | Full Compliance | <p>Condition 38 report IR013 relating to elevated levels of aluminium at SW11 on 31 December 2020 Email Operator to DEPWS RE: MRM WDL 174-11 Notification of results triggering investigation dated 29Jan2021</p> <p>The original notification email for the 31Dec20 non-compliance was sent 15Jan21 and the condition 38 report was emailed 29Jan21. Compliance is considered based on receipt before 5:00 pm on the 10th business day.</p> <p>The condition 38 report and corresponding email submission correspondence for 1 of the non-compliances that occurred was reviewed and showed it was submitted to DEPWS within 10 business days of the notification on 29Jan21.</p> | The Operator advised the Independent Monitor "In accordance with condition 38 of the WDL 174-11, DEPWS was provided a Condition 38 Report within 10 days of a result triggering further investigation email for the 2 non-compliances that occurred during the reporting period." |
| 38.1 | when the non-compliance was detected and by whom; | 4 | Full Compliance | <p>Condition 38 report IR013 relating to elevated levels of aluminium at SW11 on 31 December 2020 Email Operator to DEPWS RE: MRM WDL 174-11 Notification of results triggering investigation dated 29Jan2021</p> | <p>The Condition 38 report says "The subject result at SW11 was confirmed after the final laboratory report was received on 14 January 2021." While the original notification did advise that MRM staff detected the non-compliance, this is not mentioned in the condition 38 report. This date is inconsistent with the email titled "ENV2000284 Final Report" that appears to have been sent on 10Jan2021.</p> <p>OBS: The Operator should ensure that the Condition 38 report states who detected the non-compliance.</p> |
| 38.2 | the date and time of the non-compliance; | 4 | Full Compliance | <p>Condition 38 report IR013 relating to elevated levels of aluminium at SW11 on 31 December 2020 Email Operator to DEPWS RE: MRM WDL 174-11 Notification of results triggering investigation dated 29Jan2021</p> | The date and time of the non-compliance are included. |
| 38.3 | whether discharge was occurring at the time of the non-compliance and the source of the discharge; and | 4 | Full Compliance | <p>Condition 38 report IR013 relating to elevated levels of aluminium at SW11 on 31 December 2020 Email Operator to DEPWS RE: MRM WDL 174-11 Notification of results triggering investigation dated 29Jan2021</p> | Yes - WMD via MLDP and WMD RP |
| 38.4 | the actual and potential causes and contributing factors to the non-compliance; | 4 | Full Compliance | <p>Condition 38 report IR013 relating to elevated levels of aluminium at SW11 on 31 December 2020 Email Operator to DEPWS RE: MRM WDL 174-11 Notification of results triggering investigation dated 29Jan2021</p> | There is a section on actual and potential causes and contributing factors. |
| 38.5 | the risk of environmental harm arising from the non-compliance; | 4 | Full Compliance | <p>Condition 38 report IR013 relating to elevated levels of aluminium at SW11 on 31 December 2020 Email Operator to DEPWS RE: MRM WDL 174-11 Notification of results triggering investigation dated 29Jan2021</p> | There is a section on the risk of environmental harm. |
| 38.6 | all water quality monitoring data collected in accordance with Appendix 4 for monitoring sites SW6, SW9, SW11, SW12, SW21, SW27, SW24, SW26, SW30, SW28 and SW29 (as shown in Appendix 2) collected for the date the non-compliance was triggered and three sampling rounds prior to the non-compliance being detected; | 3 | Part Compliance (High) | <p>Condition 38 report IR013 relating to elevated levels of aluminium at SW11 on 31 December 2020 Email Operator to DEPWS RE: MRM WDL 174-11 Notification of results triggering investigation dated 29Jan2021</p> <p>Water quality monitoring data is included for the Condition 38 report IR013 that was reviewed, with the exception of one SW30 sample for 27Dec2020.</p> | <p>Sites SW24, SW29 and SW30 were not submitted in the report. The Operator advised "In relation to IR013:</p> <ul style="list-style-type: none"> • 13/12/20 - SW24, SW29 and SW30 were all cease flow, hence no sample was collected; • 20/12/20 - SW24, SW29 and SW30 were all cease flow, hence no sample was collected; • 27/12/20 - SW24 & SW29 were cease flow and hence were not sampled, however SW30 was flowing and wasn't supplied with the report; and • 31/12/20 - SW24, SW29 and SW30 were not sampled on this date as they are not an 'upon discharge' requirement, hence data could not be supplied. <p>Other sites required were submitted for the date of the sample and three samples before that. The Independent Monitor notes that SW24 is not included in Appendix 4.</p> <p>OBS: DEPWS include SW24 in Appendix 4 if the intention is for that monitoring to be included.</p> <p>OFl: Ensure that all required water quality monitoring data are submitted in Condition 38 reports.</p> |

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| 38.7 | available flow rates for the McArthur River, Barney Creek and Surprise Creek and flow rate at SW11 to demonstrate any influence these creeks and rivers may have had on the exceedance of trigger value; | 4 | Full Compliance | Condition 38 report IR013 relating to elevated levels of aluminium at SW11 on 31 December 2020 Email Operator to DEPWS RE: MRM WDL 174-11 Notification of results triggering investigation dated 29Jan2021 Table 2 includes the flow rates for these sites at the time of sampling. | OBS: The condition does not require submission of flow rates at Glyde River or Emu Creek in the audit period. However, "available" flow rates from those locations are required to be submitted for the 2021 - 2022 audit period based on the revised WDL174-12 and this will be assessed in 2022. |
| 38.8 | rainfall recorded at the site prior to the exceedance of trigger values and non-compliance occurring; | 4 | Full Compliance | Condition 38 report IR013 relating to elevated levels of aluminium at SW11 on 31 December 2020 Email Operator to DEPWS RE: MRM WDL 174-11 Notification of results triggering investigation dated 29Jan2021. Three months of rainfall data was included in the report. | |
| 38.9 | the action(s) that have or will be undertaken to mitigate any environmental harm arising from the non-compliance; | 4 | Full Compliance | Condition 38 report IR013 relating to elevated levels of aluminium at SW11 on 31 December 2020 Email Operator to DEPWS RE: MRM WDL 174-11 Notification of results triggering investigation dated 29Jan2021 The report includes that no actions will be undertaken as they are not required because the non-compliance was not considered to be mine-derived. | |
| 38.10 | corrective actions that have or will be undertaken to ensure the non-compliance does not reoccur; and | 4 | Full Compliance | Condition 38 report IR013 relating to elevated levels of aluminium at SW11 on 31 December 2020 Email Operator to DEPWS RE: MRM WDL 174-11 Notification of results triggering investigation dated 29Jan2021. The report includes that no actions will be undertaken as they are not required because the non-compliance was not considered to be mine-derived. | |
| 38.11 | if no action was taken, why no action was taken. | 4 | Full Compliance | Condition 38 report IR013 relating to elevated levels of aluminium at SW11 on 31 December 2020 Email Operator to DEPWS RE: MRM WDL 174-11 Notification of results triggering investigation dated 29Jan2021. The report includes that no actions will be undertaken as they are not required because the non-compliance was not considered to be mine-derived. | |
| 39 | A non-compliance with this licence includes: | | Refer to subconditions | | Refer to sub conditions |
| 39.1 | an exceedance of a trigger value at SW11, as specified in Appendix 3, on three consecutive sampling occasions; | N/A | Not Applicable | | This condition provides an example definition of a non-compliance rather than a requirement/action. |
| 39.2 | an exceedance of greater than or equal to three times a trigger value at SW11; | N/A | Not Applicable | | This condition provides an example definition of a non-compliance rather than a requirement/action. |
| 39.3 | subsequent consecutive exceedances of trigger values as described in Condition 39.1 and 39.2 | N/A | Not Applicable | | This condition provides an example definition of a non-compliance rather than a requirement/action. |
| 40 | The licensee must keep records of all exceedances of trigger values specified in Appendix 3 Table 1. These records must be adequate to enable the licensee to comply with the non-compliance notification conditions of this licence. | 4 | Full Compliance | Incident, Exceedance and Non Compliance Register 2021 (Updated June 2021) The Operator has kept record of all exceedances of trigger values that occurred within the reporting period in the Incident, Exceedance and Non Compliance Register 2021. | |
| 41 | The licensee must submit to the Administering Agency a Monthly Discharge Report for any month when a discharge occurs from the South-East Levee 1 and / or the Mine Levee Discharge Point, to waste@nt.gov.au . | 4 | Full Compliance | Monthly Discharge Monitoring Report – December 2020 Monthly Discharge Monitoring Report – January 2021 Monthly Discharge Monitoring Report – February 2021 Monthly Discharge Monitoring Report – March 2021 Discharge Spreadsheet (2020-21 Waste Discharge Records and Loads Tracking). | Sighted January 2021 monthly discharge monitoring report submitted via email 25 February 2021 Operator to Waste NTEPA email address condition 41 and 42. Advised by Operator monthly reports were done for December, January, February, March. These were received as evidence by the Independent Monitor. The Independent Monitor confirmed that the 2020-21 Waste Discharge Records and Loads Tracking Spreadsheet showed that 4 months (December, January, February, March) had a discharge in the reporting period. |
| 42 | The Monthly Discharge Report is due by the end of the subsequent calendar month following a discharge and must include: | 4 | Full Compliance | Monthly Discharge Monitoring Report – January 2021 | Sighted January 2021 monthly discharge monitoring report submitted via email on the 25Feb21 (within the required subsequent calendar month following discharge) from the Operator to Waste NTEPA email address. |
| 42.1 | the discharge start and end dates and times for each discharge event in that month; | 4 | Full Compliance | Monthly Discharge Monitoring Report – January 2021 | Monthly Discharge Monitoring Report – January 2021 included the start and end dates for each discharge. |

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| 42.2 | source of water discharged during each discharge event; | 4 | Full Compliance | Monthly Discharge Monitoring Report – January 2021 | Monthly Discharge Monitoring Report – January 2021 included the source of water for each discharge. |
| 42.3 | the total volumes of water discharged for each discharge event; | 4 | Full Compliance | Monthly Discharge Monitoring Report – January 2021 | Monthly Discharge Monitoring Report – January 2021 included the total volume of water discharged for each discharge. |
| 42.4 | include all analysis of water quality monitoring conducted as per Appendix 4 Table 1 for each discharge event; and | 4 | Full Compliance | Monthly Discharge Monitoring Report – January 2021 | Monthly Discharge Monitoring Report – January 2021 included the water quality monitoring (as per Appendix 4 Table 1) in Appendix A for each discharge. The requirement was for weekly, once the discharge had arrived at SW06, SW11, SW12 and SW21, which was included in the Monthly Discharge Monitoring Report – January 2021. Noting that Appendix 4 Table 1 of the WDL also requires continuous monitoring of river flow at SW11, which is not included in the Monthly Discharge Monitoring Report – January 2021. However, "river flow" is not "water quality monitoring" and therefore it is not specifically required for this condition and is audited where relevant in condition 42.5. |
| 42.5 | for South-east Levee 1 include calculations to demonstrate that the 20m ³ /s flow as measured in the McArthur River at the downstream gauging station has been achieved for the necessary time of the discharge event. | 4 | Full Compliance | Monthly Discharge Monitoring Report – January 2021 Monthly Discharge Monitoring Report – December 2020 | Monthly Discharge Monitoring Report – December 2020 includes discharge from South-east Levee 1 and the river flow summary shows that the flow as measured in the McArthur River at the downstream gauging station is greater than 20 m ³ /s for the discharge event. |
| 43 | The licensee must submit a completed Annual Return to the Administering Agency within 10 business days after each anniversary date of this licence, which report relates to the preceding 12 month period. | 4 | Full Compliance | 2019-20 WDL Annual Return (WDL Annual Return) and submission email correspondence (MRM 2019-20 WDL Annual Return). Dated 14 September 2020. Sighted email from Operator to DEPWS Subject: MRM - WDL Monitoring Report and Annual Return - dated 31Aug21 (relevant to the audit period but submitted after the audit period). | Note, the anniversary date is 31Aug so submission is due 14Sep. Sighted annual return 1May19 to 30Apr20 submitted on 14Sep20 (in the audit period). Sighted submission for annual return 1May20 to 30Apr21 submitted on 31Aug2021 (relevant to the audit period but submitted after the audit period). In the 2020 AEPAR, it was identified that results for continuous flow recorded at the Glyde River could not be reported for the 2019/2020 audit period (because the logger was not able to be located/retrieved) as required by condition 62. The Operator obtained the 2019/2020 flow data from loggers after the wet season and therefore when they became aware of the non-compliance was in the current audit period. The Operator did not provide any evidence of inclusion in the annual return of inability to record continuous flow for the 2019-2020 period. It is reported in the 2019-2020 annual return in terms of inability to comply with condition 45.4 related to Glyde River background loads. While outside the audit period, inability to record flow at Glyde River for the audit period is also not included in the 2020-2021 annual return. OBS: The non-compliance related to not recording continuous flow data at Glyde River related to conditions 60 and 62 has not been included in the 2019-2020 or 2020-2021 annual returns or annual monitoring report. However, the 2019-2020 Annual Return does discuss this related to condition 45.4. |
| 44 | The licensee must complete and provide to the Administering Agency a Monitoring Report, as prescribed by this licence, by 31 August each year, which relates to the preceding 1 May to 30 April period. | 4 | Full Compliance | WDL 174-11 Annual Monitoring Report 2019-20 dated 31Aug2020. Sighted email from Operator to DEPWS Subject: MRM - WDL Monitoring Report and Annual Return - dated 31Aug21 (after audit period). WDL 174-11 Monitoring Report 1 May 2020 to 30 April 2021 (after audit period). Viewed Annual Monitoring Report that covered 1 May 2019 to 30 April 2020. The report was dated 31Aug2020 and the submission email was dated 31Aug2020. | Sighted WDL 174-11 Annual Monitoring Report 2019-20 dated 31 August 2020 (in the audit period). Sighted submission for WDL 174-11 Monitoring Report 1 May 2020 to 30 April 2021 submitted on 31Aug2021 (relevant to the audit period but submitted after the audit period). OBS: Refer to condition 43. |
| 45 | The licensee must ensure that each Monitoring Report is prepared in consultation with a Qualified Person to determine the relevance of the information being provided as it relates to the waste discharge component of the site and in the format described in the National Water Quality Management Strategy, Australian Guidelines for Water Quality Monitoring and Reporting, Chapter 7 and must include: | 4 | Full Compliance | WDL 174-11 Annual Monitoring Report 2019-20 dated 31Aug2020. WDL 174-11 Annual Monitoring Report 2019-20 states "This Monitoring Report and its appendices have been generally structured consistent with Chapter 7 of the Guideline. This includes the provision of the executive summary and primary technical report. This Monitoring Report is based on reviews completed by qualified specialists from Kohn Crippen Berger (KCB) and WRM Water and Environment (WRM)." The generally Independent Monitor supports this statement. | Waste Discharge Licence 174-11 Monitoring Report 1 May 2020 to 30 April 2021 (relevant to the audit period but submitted after the audit period) states "This Monitoring Report and its appendices have been generally structured consistent with Chapter 7 of the Guideline. This includes the provision of the executive summary and primary technical report. This Monitoring Report is based on reviews completed by the qualified specialists WRM Water & Environment Pty Ltd (WRM)." |

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| 45.1 | a data analysis and interpretation using the National Water Quality Management Strategy, Australian Guidelines for Water Quality Monitoring and Reporting, Chapter 6; | 4 | Full Compliance | <p>WDL 174-11 Annual Monitoring Report 2019-20 dated 31Aug2020. Bing Bong Dredge Spoil Saline Impact Assessment 2020</p> <p>WDL 174-11 Annual Monitoring Report 2019-20 states "This Monitoring Report has been generally structured consistent with Chapter 6 of the Guideline. This includes:</p> <ul style="list-style-type: none"> • Analysis of changes in time and space (Section 4); • Checks for data integrity (Section 5); • Comparison of site and water quality guidelines (Section 7); and • Interpretation in relation to study objectives (Section 8)." <p>The Independent Monitor generally supports this statement.</p> | <p>Waste Discharge Licence 174-11 Monitoring Report 1 May 2020 to 30 April 2021 (relevant to the audit period but submitted after the audit period) states "This Monitoring Report has been generally structured consistent with Chapter 6 of the Guideline. This includes:</p> <ul style="list-style-type: none"> • analysis of changes in time and space (Section 4); • checks for data integrity (Appendix A); • comparison of site and water quality guidelines (Section 6); and • interpretation in relation to study objectives (Section 7)." <p>The results of the Bing Bong Dredge Spoil Saline Impact Assessment 2020 do not appear to be included in the Waste Discharge Licence 174-11 Monitoring Report 1 May 2020 to 30 April 2021. This will be addressed in the 2022 audit.</p> <p>OBS: Include data on the Bing Bong Dredge Spoil Saline Impact Assessment 2020 in the WDL Annual Monitoring Report.</p> |
| 45.2 | a tabulation of all monitoring data required as a condition of this licence; | 4 | Full Compliance | <p>WDL 174-11 Annual Monitoring Report 2019-20 dated 31Aug2020.</p> <p>WDL 174-11 Annual Monitoring Report 2019-20 states "Tabulation of data required under the monitoring schedules listed in Conditions 25 to 27 of WDL 174-11 is provided in Section 4.2 and the EMR (Attachment 2)." This has been confirmed.</p> | <p>Waste Discharge Licence 174-11 Monitoring Report 1 May 2020 to 30 April 2021 (relevant to the audit period but submitted after the audit period) states "Tabulation of data required under the monitoring schedules listed in Conditions 25 to 27 of WDL 174-11 is provided in Section 4.2 and the EMR (Attachment 2).</p> <p>Continuous flow data required by conditions 60 and 62 would also be part of the requirement of condition 45.2. The data available is included in the 2019-2020 and 2020-2021 Mine Derived Analyte Loads Assessment, which are attachments to the Annual Monitoring Report.</p> |
| 45.3 | includes long term trend analysis of monitoring data to demonstrate any environmental impact associated with the activity over a minimum period of three years (where the data is available); | 4 | Full Compliance | <p>WDL 174-11 Annual Monitoring Report 2019-20 dated 31Aug2020.</p> <p>The WDL 174-11 Annual Monitoring Report 2019-20 includes "A summary of long term trends for surface water sites in the McArthur River has been provided from 1 January 2008 (where data was available) in Section 4.3 of this report.</p> <p>Cease to flow conditions were observed for all monthly samples at BBDDP, and hence no water quality sampling was undertaken during the reporting period. As such, please refer to Waste Discharge Licence 174-10 Monitoring Report 1 June 2017 – 31 May 2018 (MRM, 2018) for long term trend analysis of BBDDP monitoring data.</p> <p>Long term trend analysis for the various monitoring programs is also provided in the EMR (Attachment 2) and its Appendices." This has been confirmed.</p> | <p>Waste Discharge Licence 174-11 Monitoring Report 1 May 2020 to 30 April 2021 (relevant to the audit period but submitted after the audit period) includes "A summary of long term trends for surface water sites in the McArthur River has been provided from 1 January 2008 (where data was available) in Section 4.3 of this report.</p> <p>Cease to flow conditions were observed for all monthly observations at the Bing Bong Dredge Spoil Drain, and hence no water quality sampling was undertaken during the reporting period. As such, please refer to Waste Discharge Licence 174-10 Monitoring Report 1 June 2017 – 31 May 2018 (MRM, 2018) for long term trend analysis of Bing Bong Dredge Discharge Point (BBDDP) monitoring data.</p> <p>Long term trend analysis for the various monitoring programs is also provided in the EMR (Attachment 2) and its Appendices."</p> |

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|--------------------------------|---|-------|------------------|--|---|
| 45.4 | includes mine derived loads of contaminants for the contaminants listed in Appendix 3 Table 1, reporting to the McArthur River including sources of contaminant loads, compared against background loads in the McArthur River and Glyde River; | 4 | Full Compliance | <p>WDL 174-11 Annual Monitoring Report 2019-20 dated 31Aug2020. Refer to WDL 174-11 Annual Monitoring Report 2019-20 Section 6 and Appendix T of Attachment 2 (EMR). Email DEPWS to Operator subject RE: MRM Final Adaptive Management Plan and Environmental Monitoring Program dated 16Apr2021. 2019-20 WDL Draft Annual Return 2019-20 WDL Annual Return and submission email correspondence (MRM 2019-20 WDL Annual Return) dated 14 September 2020.</p> <p>Email DEPWS to Operator subject RE: MRM Final Adaptive Management Plan and Environmental Monitoring Program dated 16Apr2021. "The load calculation as presented in the report submitted with the application is not truly representative of the total loads entering the McArthur River from the mine."</p> <p>WDL 174-11 Annual Monitoring Report 2019-20 dated 31Aug2020. "WRM Water & Environment (2020) reviewed the mine derived analyte loads for the period between 1 May 2019 and 30 April 2020. There were no managed releases from the mine that occurred during the reporting period and therefore mine derived analyte loads for the reporting period is zero."</p> <p>The non-compliance reported in the 2019-2020 Annual Return listed against condition 45.4 of "flow (loads) could not be determined for Glyde River over reporting period reported" on 31Aug2020 does not appear to be discussed as a non compliance in the Annual Monitoring Report 2019-2020. The inability to provide Glyde River average weekly flow and calculated volumes is included in the 2019/20 Mine Derived Analyte Loads Assessment, which is an attachment to the Annual Monitoring Report 2019-2020.</p> | <p>Waste Discharge Licence 174-11 Monitoring Report 1 May 2020 to 30 April 2021 (relevant to the audit period but submitted after the audit period) includes "refer to Section 5 and Attachment 4." Section 5 is the analyte loads section and Attachment 4 is the 2020/21 Mine Derived Analyte Loads Assessment.</p> <p>OBS: This condition is changed in the WDL 174-12 to "includes mine derived loads entering the McArthur River from the mine site for the contaminants listed in Appendix 3 Table 1".</p> |
| 45.5 | a comparison of the mine derived contaminant loads referred to in Condition 45.4 against contaminant loads reporting to the McArthur River from July 2017 to June 2018; | 4 | Full Compliance | <p>WDL 174-11 Annual Monitoring Report 2019-20 dated 31Aug2020. Refer to WDL 174-11 Annual Monitoring Report 2019-20 Section 6 and Appendix T of Attachment 2 (EMR).</p> <p>WDL 174-11 Annual Monitoring Report 2019-20 Section 6 states "Managed release loads estimated for 2019-20 were compared to the annual 2017-18 managed release loads estimate. It should be noted that the 2019-20 reporting period was from May to April, whereas the 2017-18 assessment period was from July to June. During the 2019-20 period there were no discharge events from MRM. As there were no discharge events the contribution of zinc and lead loads from MRM are zero as shown in Chart 43. "</p> | <p>Waste Discharge Licence 174-11 Monitoring Report 1 May 2020 to 30 April 2021 (relevant to the audit period but submitted after the audit period) includes "refer to Section 5 and Attachment 4." Section 5 is the analyte loads section and Attachment 4 is the 2020/21 Mine Derived Analyte Loads Assessment.</p> <p>OBS: The non-compliance reported in the 2019-2020 Annual Return listed against condition 45.4 of "flow (loads) could not be determined for Glyde River over reporting period reported" on 31Aug2020 does not appear to be discussed in the Annual Monitoring Report 2019-2020. The inability to provide Glyde River average weekly flow and calculated volumes is included in the 2019/20 Mine Derived Analyte Loads Assessment, which is an attachment to the Annual Monitoring Report 2019-2020.</p> |
| 45.6 | an assessment of all monitoring data (including flow rate and calculated volume from each river contributing to water quality at SW11) and whether the activity has been conducted in a manner that has ensured the McArthur River and waters potentially impacted from the Bing Bong discharge point are being protected at all times from mine related impacts. | 4 | Full Compliance | <p>WDL 174-11 Annual Monitoring Report 2019-20 dated 31Aug2020. Refer to WDL 174-11 Annual Monitoring Report 2019-20 Section 7 and Attachment 3. Section 7 is the discussion and Attachment 3 is the 2019/20 Mine Derived Analyte Loads Assessment.</p> <p>The annual monitoring report includes an assessment of all the monitoring data that was collected (i.e. Glyde River data was not available so was not assessed).</p> | <p>Waste Discharge Licence 174-11 Monitoring Report 1 May 2020 to 30 April 2021</p> <p>Waste Discharge Licence 174-11 Monitoring Report 1 May 2020 to 30 April 2021 includes "refer to Section 6 and Attachment 3". Section 6 is the discussion and Attachment 3 is the EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21. The 2020/21 Mine Derived Analyte Loads Assessment is also relevant to meet the requirement of this condition.</p> |
| PERFORMANCE IMPROVEMENT | | | | | |
| 46 | The licensee must develop and submit to the administering authority an Adaptive Management Plan. | 4 | Full Compliance | <p>Draft AMP (Enclosure 1 - Draft Adaptive Management Plan) Email correspondence of the submission (20201130 Draft Adaptive Management Plan and Environmental Monitoring Program) Final response by Waste NTEPA (RE MRM Draft Adaptive Management Plan and Environmental Monitoring Program).</p> | <p>Sighted email of evidence of submission of draft AMP on 30Nov20. Sighted email evidence of the DEPWS's response, including comments on the AMP on 18Feb21.</p> |
| 47 | A draft Adaptive Management Plan must be provided to the Administering Authority by 30 November 2020. | 4 | Full Compliance | <p>Draft AMP (Enclosure 1 - Draft Adaptive Management Plan) Email correspondence of the submission (20201130 Draft Adaptive Management Plan and Environmental Monitoring Program) Final response by Waste NTEPA (RE MRM Draft Adaptive Management Plan and Environmental Monitoring Program).</p> | <p>Sighted email of evidence of submission of draft AMP on 30Nov20. Sighted email evidence of the DEPWS's response, including comments on the AMP on 18Feb21.</p> |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
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| 48 | The final Adaptive Management Plan must be provided to the Administering Authority by 31 March 2021. | 4 | Full Compliance | Email from Operator to DEPWS - MRM Final Adaptive Management Plan and Environmental Monitoring Program - dated 31Mar21. Letter Operator to DEPWS dated 26 March 2021 RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan Enclosure 1 McArthur River Mine Final Adaptive Management Plan. Email DEPWS to Operator RE: MRM Final Adaptive Management Plan and Environmental Monitoring Program dated 1Apr2021 | MRM submitted the following reports to DEPWS on the 31 March 2021: <ul style="list-style-type: none"> Final Adaptive Management Plan for the McArthur River Mine; Consolidated Environmental Monitoring Programs; and Bing Bong Loading Facility Environment Management Plan. <p>The Operator advised they "have not received formal correspondence in relation to the letter dated 26 March 2021".</p> |
| 49 | The Adaptive Management Plan must set out how the licensee will ensure the health of the McArthur River is protected from mine related impacts. The Adaptive Management Plan must include as a minimum: | 4 | Full Compliance | Enclosure 1 McArthur River Mine Final Adaptive Management Plan. Enclosure 5 Peer Review of the Final AMP and BBLF EMP. DEPWS's email to Operator RE: MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 18Feb21. DEPWS's letter to Operator Re: Review of Adaptive Management Plan dated 18Feb21. Operator's email to the DEPWS RE MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 26Mar21. Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21. | The Adaptive Management Plan Section 1.3 states "The AMP has also been developed to ensure the OMP is implemented in a manner that protects the health of the McArthur River from mine related impacts, [...]" Section 3.2 Environmental Objectives states "Ensure the health of the McArthur River is protected along its whole length at all times from mine related impacts. [...]" The key environmental management objectives for the Mine are described as follows: <ol style="list-style-type: none"> 1. Protect the McArthur River beneficial uses and community values from mining impacts; 2. Facilitate development of the ecosystems and their functions along the McArthur River Diversion Channel for terrestrial and aquatic flora and fauna; 3. Achieve a recovering trend in the water quality and ecosystem function in creeks on the Mine site within 20 years of cessation of mining; and 4. Minimise air quality related impacts from the Mine's operations with respect to community health and the environment." <p>Enclosure 5 Peer Review of the Final Adaptive Management Plan and BBLF EMP states "The proposed monitoring programs have been developed with reference to contemporary environmental guidelines and performance criteria. These guidelines together with proactive management and monitoring are able to ensure that potential impacts of the handling of ore and overburden and processed materials (tailings and concentrate) do not adversely impact the surrounding environment or community."</p> <p>The DEPWS's letter to the Operator Re: Review of Adaptive Management Plan dated 18Feb21 queried that the environmental management objectives outlined in the AMP did not mirror the language from the WDL. This was responded to in the Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21 and appears to validate that the condition is fulfilled.</p> <p>A full review of the Adaptive Management Plan is scheduled to occur in 2022 as part of the Independent Monitor scope.</p> |
| 49.1 | clear, measurable environmental objectives for all significant environmental risks and potential impacts for the: | | Refer to subconditions | | Refer to sub conditions |
| . | area from the discharge points to SW11 including all convergent water sources; | 4 | Full Compliance | Enclosure 1 McArthur River Mine Final Adaptive Management Plan Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions | Section 3.2 of the Adaptive Management Plan has high level environmental objectives and it states "The overarching objectives are supplemented by performance indicators and associated SMART environmental triggers detailed in sub-management plans and Section 5." The area from SW11 to the mouth of the McArthur River is included. The Independent Monitor agrees with the statement in Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions "The Final AMP (Enclosure 1) links each environmental objective to Performance Indicators and specific, measurable, achievable, results-oriented and time-bound (SMART) trigger values developed for all significant environmental risks associated with the Mine." A full review of the Adaptive Management Plan is scheduled to occur in 2022 as part of the Independent Monitor scope. |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
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| . | area from SW11 to mouth of the McArthur River. | 4 | Full Compliance | Enclosure 1 McArthur River Mine Final Adaptive Management Plan DEPWS's email to Operator RE: MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 18Feb21. DEPWS's letter to Operator Re: Review of Adaptive Management Plan dated 18Feb21. Operator's email to the DEPWS RE MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 26Mar21. Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21. | Section 3.2 of the Adaptive Management Plan has high level environmental objectives and it states "The overarching objectives are supplemented by performance indicators and associated SMART environmental triggers detailed in sub-management plans and Section 5." The DEPWS's letter to the Operator Re: Review of Adaptive Management Plan dated 18Feb21 queried that SW32 and SW08 were not included in the AMP. This was responded to in the Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21 that both SW32 and SW08 are included in the AMP monitoring program and that a new figure 6b will be included to clearly show them. The final AMP included the new figure 6b. A full review of the Adaptive Management Plan is scheduled to occur in 2022 as part of the Independent Monitor scope. |
| 49.2 | measurable performance indicators underpinned by scientific evidence and Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018 to demonstrate whether environmental objectives are being met. At a minimum measurable performance indicators must be specified for surface water, groundwater, fluvial sediments and biota. | 4 | Full Compliance | Enclosure 1 McArthur River Mine Final Adaptive Management Plan DEPWS's email to Operator RE: MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 18Feb21. DEPWS's letter to Operator Re: Review of Adaptive Management Plan dated 18Feb21. Operator's email to the DEPWS RE MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 26Mar21. Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions. | Section 3.2 of the Adaptive Management Plan states "The overarching objectives are supplemented by performance indicators and associated SMART environmental triggers detailed in sub-management plans and Section 5." Section 5 is the Trigger Action Response Plan (TARP)section. Table 7 has SMART performance criteria. The DEPWS's letter to the Operator Re: Review of Adaptive Management Plan dated 18Feb21 queried that the performance indicators needed "to be refined to clearly articulate the measure i.e. what is the statistical difference for each of the indicators that can be measured". This was responded to in the Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21 saying "footnotes have been added to the Section 5 TARP summary table", and the Independent Monitor confirms a footnote has been added. Performance indicators for surface water, groundwater, fluvial sediments and biota are included in the Adaptive Management Plan in Table 8: Trigger Action Response Plan Summary - McArthur River Mine. Table 5 of Section 4.1 of the Adaptive Management Plan includes the Water Management Plan, which is Appendix A of the Adaptive Management Plan and has the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018 listed as a performance indicator guideline. A full review of the Adaptive Management Plan is scheduled to occur in 2022 as part of the Independent Monitor scope. |
| 49.3 | triggers to warn of potential for performance indicators to be exceeded. | 4 | Full Compliance | Enclosure 1 McArthur River Mine Final Adaptive Management Plan Enclosure 5 Peer Review of the Final AMP and BBLF EMP. DEPWS's email to Operator RE: MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 18Feb21. DEPWS's letter to Operator Re: Review of Adaptive Management Plan dated 18Feb21. Operator's email to the DEPWS RE MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 26Mar21. Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21. | Enclosure 5 Peer Review of the Final Adaptive Management Plan and BBLF EMP states "The TARPs outline pre-emptive triggers for MRM to initiate further investigation and implement management measures." Table 8 of the Adaptive Management Plan includes the triggers (for example the performance indicator "Water quality downstream of the McArthur River Mine lease does not exceed site specific trigger values (SSTVs) from managed release" a trigger included is if the SW11 analyte predicted or measured is greater than or equal to 90% of SSTV due to the managed release or if a load is greater than 90% but less than 100% of the defined limit. The DEPWS's letter to the Operator Re: Review of Adaptive Management Plan dated 18Feb21 queried that the triggers were largely retrospective. This was responded to in the Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21 saying "pre-emptive triggers and action/responses prior to potential environment harm are outlined in Table 8". A full review of the Adaptive Management Plan is scheduled to occur in 2022 as part of the Independent Monitor scope. |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
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| 49.4 | realistic and achievable contingency interventions to maintain performance indicators if triggers are exceeded. | 4 | Full Compliance | <p>Enclosure 1 McArthur River Mine Final Adaptive Management Plan</p> <p>Enclosure 5 Peer Review of the Final AMP and BBLF EMP.</p> <p>DEPWS's email to Operator RE: MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 18Feb21.</p> <p>DEPWS's letter to Operator Re: Review of Adaptive Management Plan dated 18Feb21.</p> <p>Operator's email to the DEPWS RE MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 26Mar21.</p> <p>Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21.</p> <p>Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions.</p> | <p>Enclosure 5 Peer Review of the Final Adaptive Management Plan and BBLF EMP states "The TARP's outline pre-emptive triggers for MRM to initiate further investigation and implement management measures. The TARP's are implemented by MRM to manage potential adverse environmental conditions, mitigate environmental impacts, inform mitigation options where required and to assess performance against overarching environmental objectives. The TARP process is supported by robust data analysis and reporting."</p> <p>The DEPWS's letter to the Operator Re: Review of Adaptive Management Plan dated 18Feb21 stated "the action responses and contingency interventions are clearly outlined." However, the DEPWS felt it was only investigation and reporting. This was responded to in the Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21 saying that a number of action/responses are provided in Table 8 such as: *"cease further managed release" *"removal of mine affected baseflow" *"sediment removal" *"commence recharge". Other potential management and contingency measures are listed in Table 9 of the Adaptive Management Plan." The Independent Monitor confirms Table 8 and Table 9 include contingency interventions.</p> <p>A full review of the Adaptive Management Plan is scheduled to occur in 2022 as part of the Independent Monitor scope.</p> |
| 49.5 | clearly defined management measures / actions capable of being implemented in a timely way to ensure that the performance indicators are not exceeded and environmental objectives are achieved. | 4 | Full Compliance | <p>Enclosure 1 McArthur River Mine Final Adaptive Management Plan</p> <p>Enclosure 5 Peer Review of the Final AMP and BBLF EMP.</p> <p>DEPWS's email to Operator RE: MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 18Feb21.</p> <p>DEPWS's letter to Operator Re: Review of Adaptive Management Plan dated 18Feb21.</p> <p>Operator's email to the DEPWS RE MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 26Mar21.</p> <p>Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21.</p> <p>Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions.</p> | <p>Enclosure 5 Peer Review of the Final Adaptive Management Plan and BBLF EMP states "The TARP's outline pre-emptive triggers for MRM to initiate further investigation and implement management measures. The TARP's are implemented by MRM to manage potential adverse environmental conditions, mitigate environmental impacts, inform mitigation options where required and to assess performance against overarching environmental objectives. The TARP process is supported by robust data analysis and reporting."</p> <p>AMP Section 5 "Outlines management actions that can be implemented should trigger levels be exceeded. Actions should take into account industry best practice and relevant guidelines. Outlines the process for determining the most appropriate management."</p> <p>The DEPWS's letter to the Operator Re: Review of Adaptive Management Plan dated 18Feb21 stated "the action responses and contingency interventions are clearly outlined." However, the DEPWS felt it was only investigation and reporting. This was responded to in the Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21 saying that a number of action/responses are provided in Table 8 such as: *"cease further managed release" *"removal of mine affected baseflow" *"sediment removal" *"commence recharge". Other potential management and contingency measures are listed in Table 9 of the AMP."</p> <p>A full review of the Adaptive Management Plan is scheduled to occur in 2022 as part of the Independent Monitor scope.</p> |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
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| 49.6 | clear processes to guide decision making if triggers are exceeded that address timeframes for initiation of actions, including decisions to discontinue an activity, and responsibility and evidentiary basis for decision-making. | 4 | Full Compliance | Enclosure 1 McArthur River Mine Final Adaptive Management Plan Enclosure 5 Peer Review of the Final AMP and BBLF EMP. DEPWS's email to Operator RE: MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 18Feb21. DEPWS's letter to Operator Re: Review of Adaptive Management Plan dated 18Feb21. Operator's email to the DEPWS RE MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 26Mar21. Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions. | Adaptive Management Plan Section 5 "Outlines the process for determining the most appropriate management." The DEPWS's letter to the Operator Re: Review of Adaptive Management Plan dated 18Feb21 stated "the action responses and contingency interventions are clearly outlined." However, the DEPWS felt it was only investigation and reporting. This was responded to in the Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21 saying "Figure 18 shows the process flow chart that the Operator generally follows when a trigger is exceeded. As outlined in Table 8 of the draft Adaptive Management Plan, each performance indicator has an associated timed reporting requirement. For example, "Issue the investigation report to DEPWS and DITT within 10 days of assessment completion". A full review of the Adaptive Management Plan is scheduled to occur in 2022 as part of the Independent Monitor scope. |
| 49.7 | a continual feedback system to ensure appropriate actions are initiated when triggered and environmental objectives are always being met. | 4 | Full Compliance | Enclosure 1 McArthur River Mine Final Adaptive Management Plan Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions. DEPWS's email to Operator RE: MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 18Feb21. DEPWS's letter to Operator Re: Review of Adaptive Management Plan dated 18Feb21. Operator's email to the DEPWS RE MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 26Mar21. Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21. | Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "Addressed as part of the TARP process (Section 5.2 and Figure 18) of the Final AMP (Enclosure 1). Further monitoring would be conducted following the implementation of additional controls to assess their effectiveness (Figures 17 and 18)." The DEPWS's letter to the Operator Re: Review of Adaptive Management Plan dated 18Feb21 stated "Reporting to regulators at the time of becoming aware of an incident in the WDL is required. The AMP does not have any reporting to regulators until after an investigation and assessment of a level 3 trigger, which realistically could be months after an incident occurs. The Adaptive Management Plan needs to be clear about the contingency actions and corrective actions to be applied." The Final Adaptive Management Plan has been updated to include in Table 8 "Notify WDL administrating authority of potential non-compliance as conditioned within the WDL, including any required preliminary investigation report." where relevant to the WDL, except for the annual lead and zinc monitoring. |
| 49.8 | review management actions as required based on knowledge gained from experience at the site and elsewhere across industry. | 4 | Full Compliance | Enclosure 1 McArthur River Mine Final Adaptive Management Plan Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions. DEPWS's email to Operator RE: MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 18Feb21. DEPWS's letter to Operator Re: Review of Adaptive Management Plan dated 18Feb21. Operator's email to the DEPWS RE MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 26Mar21. Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21. | Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "The ongoing AMP review process is described in Section 8 and shown on Figure 19 of the Final AMP (Enclosure 1)." The DEPWS noted "The AMP by its very nature infers that it will be modified as more information and understanding of the McArthur River and potential impact of the mining operations becomes available through monitoring (surface and groundwater, sediment, biota). The general structure of the AMP allows for this. However, there may be merit in including a 'review' section in the AMP to ensure that the AMP is reviewed periodically". The Operator responded "As outlined in Section 8 Review and Update of the draft AMP (November 2020 version), the AMP will be subject to ongoing review and revisions as part of the MRM's environmental performance reporting. The AMP will be reviewed, and if necessary revised, on an annual basis as part of the preparation of the annual Environmental Monitoring Report." The AMP states in Section 8 Review and Update "This AMP will be reviewed, and if necessary revised, on an annual basis as part of the preparation of the annual EMR". |
| 50 | The Adaptive Management Plan required by Condition 48 must: | | Refer to subconditions | | Refer to sub conditions |

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| 50.1 | be prepared by a suitably qualified person; | 4 | Full Compliance | <p>Enclosure 1 McArthur River Mine Final Adaptive Management Plan</p> <p>Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions.</p> <p>DEPWS's email to Operator RE: MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 18Feb21.</p> <p>DEPWS's letter to Operator Re: Review of Adaptive Management Plan dated 18Feb21.</p> <p>Operator's email to the DEPWS RE MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 26Mar21.</p> <p>Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21.</p> <p>EMR 2020 - 2021 Appendix R - Surface Water Monitoring Report 2020-21</p> | <p>AMP states it was prepared by "Senior Environmental Advisor".</p> <p>The DEPWS requested information from the Operator on this after submission of the draft and the Operator responded "In addition to the internal expertise used to develop this draft AMP, MRM also sought input from a number of external experts in regards to TARP development and sub-plan content including Dr Dean Thorburn of Indo-pacific Environmental, Dr Brent Usher of Klohn Crippen Berger, Aleks Todoroski of Todoroski Air Sciences and Julian Orth of WRM Water and Environment."</p> <p>The Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "The Final AMP (Enclosure 1) has been prepared by suitability qualified persons within the MRM Environment Team. MRM also sought input from a number of external experts in regards to TARP development and sub-plan content including Dr Dean Thorburn of Indo pacific Environmental, Dr Brent Usher of Klohn Crippen Berger, Aleks Todoroski of Todoroski Air Sciences and Julian Orth of WRM Water and Environment."</p> |
| 50.2 | the final Adaptive Management Plan must be reviewed by a suitably qualified third party prior to submission to the Administering Authority. | 4 | Full Compliance | <p>Letter Operator to DEPWS with submission of the Final Adaptive Management Plan dated 31Mar21.</p> <p>Enclosure 5 Peer Review of the Final AMP and BBLF EMP.</p> <p>Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions.</p> <p>DEPWS's email to Operator RE: MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 18Feb21.</p> <p>DEPWS's letter to Operator Re: Review of Adaptive Management Plan dated 18Feb21.</p> <p>Operator's email to the DEPWS RE MRM Draft Adaptive Management Plan and Environmental Monitoring Program dated 26Mar21.</p> <p>Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21.</p> <p>https://smi.uq.edu.au/profile/519/barry-noller</p> <p>Third party review by Professor Barry N. Noller, Principal Research Fellow, Centre for Mined Land Rehabilitation. The Independent Monitor viewed his credentials on the University of Queensland website.</p> <p>Letter from the Operator to the DEPWS with submission of the Final Adaptive Management Plan dated 31Mar21 stated under INDEPENDENT PEER REVIEW</p> <p>"In accordance with Conditions 50.2 and 59.3 of WDL 174-11, the Final Adaptive Management Plan and the Bing Bong Loading Facility Environmental Management Plan have been subject to independent peer review by Associate Professor Barry Noller of the University of Queensland (see Enclosure 5). Professor Noller has made a number of conclusions regarding the adequacy of the plans including:</p> <p>"The proposed monitoring programs have been developed with reference to contemporary environmental guidelines and performance criteria. These guidelines together with proactive management and monitoring are able to ensure that potential impacts of the handling of ore and overburden and processed materials (tailings and concentrate) do not adversely impact the surrounding environment or community."</p> | <p>The Operator advised "The suitably qualified professional, Dr Barry Noller, completed technical reviews on conditions within WDL 174-10 and was again used for the conditions within WDL 174-11."</p> <p>DEPWS requested information from the Operator related to the review by a suitably qualified third party after submission of the draft and the Operator responded in the Operator's letter to the DEPWS RE: McArthur River Mine - Response to Comments on Draft Adaptive Management Plan dated 26Mar21 "The final AMP will be reviewed by Professor Barry Noller of the University of Queensland, and a review letter will be provided in the submission package."</p> |
| 51 | The licensee must conduct a review of all environmental monitoring undertaken for the McArthur River and provide one consolidated Environmental Monitoring Program to the administering Authority. | 4 | Full Compliance | <p>Enclosure 2: Consolidated Environmental Monitoring Program.</p> <p>EMR 2020 - 2021.</p> <p>The Environmental Monitoring Program annually provides all results and data undertaken for each monitoring program and holistically reviews them. The Operator advised the "EMR is considered the review of all environmental monitoring and was used in conjunction with the Source-Pathway-Receptor model (found within Adaptive Management Plan) for the development of the Environmental Monitoring Program."</p> | |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
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| 52 | A draft Environmental Monitoring Program must be provided to the administering authority by 30 November 2020. | 4 | Full Compliance | MRM Environmental Monitoring Schedule (Enclosure 2 - MRM Environmental Monitoring Schedule) Email correspondence of the submission (20201130 Draft Adaptive Management Plan and Environmental Monitoring Program) Final response by Waste NTEPA (RE MRM Draft Adaptive Management Plan and Environmental Monitoring Program). The Independent Monitor acknowledges that the emails shows compliance. | |
| 53 | The final Environmental Monitoring Program must be provided to the administering authority by 31 March 2021. | 4 | Full Compliance | Email from Operator to DEPWS - MRM Final Adaptive Management Plan and Environmental Monitoring Program - dated 31Mar21. Letter Operator to DEPWS with submission of the Final Adaptive Management Plan dated 31Mar21. Enclosure 2: Consolidated Environmental Monitoring Program. The Environmental Monitoring Program was submitted with the Final Adaptive Management Plan on 31Mar21 as evident by the submission email and letter. The Independent Monitor acknowledges that the emails shows compliance. | |
| 54 | The revised Environmental Monitoring Program must be capable of identifying and quantifying impacts of mining activities to assess the health of the McArthur River. | 4 | Full Compliance | Enclosure 2: Consolidated Environmental Monitoring Program. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions. Enclosure 5 Peer Review of the Final AMP and BBLF EMP. Enclosure 1 McArthur River Mine Final Adaptive Management Plan. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "The environmental objectives are described in Section 3.2 of the Final AMP and include the requirement for MRM to: *Protect the McArthur River beneficial uses and community values from mining impacts. The NT EPA Assessment Report 86 directly refers to quantifying impacts of mining activities on the 'environmental values' and 'beneficial uses' of the McArthur River as a measure to assess performance against the NT EPA's overarching environmental outcome. The Final Adaptive Management Plan (Enclosure 1) Links each environmental objective to Performance indicators and specific, measurable, achievable, results-oriented and time-bound (SMART) trigger values developed for all significant environmental risks associated with the Mine." Enclosure 5 Peer Review of the Final Adaptive Management Plan and BBLF EMP states "The proposed monitoring programs are appropriate to assess environmental performance for the risks relevant to the Mine and environment. The monitoring takes into account receptors identified as communities surrounding the mine including at Borroloola, aquatic flora and fauna of the downstream (off-lease) McArthur River, and on-lease pools within and upstream of the McArthur River Diversion Channel." | |
| 55 | At a minimum, the Environmental Monitoring Program for the Mine must: | | Refer to subconditions | | Refer to sub conditions |
| 55.1 | be capable of determining whether performance indicators and environmental objectives as outlined in the Adaptive Management Plan are being met. | 4 | Full Compliance | Enclosure 2: Consolidated Environmental Monitoring Program. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions. Enclosure 5 Peer Review of the Final AMP and BBLF EMP. Enclosure 1 McArthur River Mine Final Adaptive Management Plan. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "The Final Adaptive Management Plan (Enclosure 1) Links each environmental objective to Performance Indicators and specific, measurable, achievable, results-oriented and time-bound (SMART) trigger values developed for all significant environmental risks associated with the Mine." Enclosure 5 Peer Review of the Final Adaptive Management Plan and BBLF EMP "The proposed monitoring programs are appropriate to assess environmental performance for the risks relevant to the Mine and environment. The monitoring takes into account receptors identified as communities surrounding the mine including at Borroloola, aquatic flora and fauna of the downstream (off-lease) McArthur River, and on-lease pools within and upstream of the McArthur River Diversion Channel." | |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---------------|--|-------|------------------|---|---|
| 55.2 | quantify impacts to water quality and trends in groundwater and surface water at appropriate points including upstream and downstream of the mine to determine that environmental objectives and performance indicators are being met. | 4 | Full Compliance | Enclosure 2: Consolidated Environmental Monitoring Program. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions. Enclosure 1 McArthur River Mine Final Adaptive Management Plan Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "Numerous groundwater and surface water sites are located upstream and downstream of the Mine (Section 4 of the Final AMP [Enclosure 1]). These sites allow for the identification of potentially adverse trends and assist with the identification of the source of impact (see Section 3.3 for discussion on the Source-Pathway-Receptor Model). This information informs the most effective contingency measures. The TARPs are used to confirm performance and make a conclusion with regards to whether the Mine's key environmental objectives are being met." | |
| 55.3 | include upstream and downstream monitoring in terms of fluvial sediment and biota (including macroinvertebrates) diversity and abundance. | 4 | Full Compliance | Enclosure 1 McArthur River Mine Final Adaptive Management Plan. Enclosure 2: Consolidated Environmental Monitoring Program. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "Upstream and downstream monitoring sites for fluvial sediment and aquatic biota (including macroinvertebrates) are described in Section 4 of the Final AMP." Adaptive Management Plan: *Figure 6a Local Surface Water and Fluvial Sediment Monitoring Sites and Figure 6b Regional Surface Water and Fluvial Sediment Monitoring Sites *Figure 12a - Local Macroinvertebrate Monitoring Sites and Figure 12b - Regional Macroinvertebrate Monitoring Site *Aquatic Abundance and Diversity (Figures 11 and 13). *Metals in Aquatic Fauna (Figure 14) | |
| 55.4 | ensure that all likely parameters and contaminants of concern are monitored in groundwater, surface water, fluvial sediment and biota. | 4 | Full Compliance | Enclosure 1 McArthur River Mine Final Adaptive Management Plan. Enclosure 2: Consolidated Environmental Monitoring Program. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "Specific parameters monitored in relation to TARPs are outlined in Table 8 of the Final AMP (Enclosure 1). The full list of analytes monitored in groundwater, surface water and fluvial sediments are provided in the Consolidated Environmental Monitoring Program for the McArthur River and Bing Bong Dredge Spoil Drain Discharge Point is provided in Enclosure 2. Further details regarding the full list of analytes monitored in biota is provided in Appendix A Water Management Plan of the Final AMP (Enclosure 1)." | A full review of the Adaptive Management Plan is scheduled to occur in 2022 as part of the Independent Monitor scope. |
| 55.5 | quantify mine-derived loads of lead and zinc entering the McArthur River each year. | 4 | Full Compliance | Enclosure 1 McArthur River Mine Final Adaptive Management Plan. Enclosure 2: Consolidated Environmental Monitoring Program. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "The Consolidated Environmental Monitoring Program for the McArthur River and Bing Bong Dredge Spoil Drain Discharge Point (Enclosure 2) allows for quantification of mine-derived loads from managed releases by using concentration data measured at discharge source waters and flow rates provided by flow meters on discharge infrastructure. A TARP for managed discharges from the Mine is provided in Table 8 of the AMP." | A full review of the Adaptive Management Plan is scheduled to occur in 2022 as part of the Independent Monitor scope. |
| 55.6 | include appropriate monitoring sites to assess the effectiveness of source control in reducing contaminant loads entering the McArthur River. | 4 | Full Compliance | Enclosure 1 McArthur River Mine Final Adaptive Management Plan. Enclosure 2: Consolidated Environmental Monitoring Program. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "Section 3.3 of the Final AMP (Enclosure 1) includes an extensive list of source controls that have been developed by MRM to reduce contaminant loads. The monitoring programs for the Mine have been developed in consideration of the potential sources and are designed to inform effectiveness of the source controls." | A full review of the Adaptive Management Plan is scheduled to occur in 2022 as part of the Independent Monitor scope. |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---------------|---|-------|------------------------|---|---|
| 55.7 | include an aquatic ecosystem monitoring program in line with recommendation 14 and 15 of the NT EPA Assessment Report 86 McArthur River Mine Overburden Management Project McArthur River Mining Pty Ltd July 2018. | 4 | Full Compliance | <p>Enclosure 1 McArthur River Mine Final Adaptive Management Plan. Enclosure 2: Consolidated Environmental Monitoring Program. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions.</p> <p>Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "MRM plan to submit an application to amend WDL 174 in early April 2021. The amendment application will include submission of the McArthur River Site Specific Guideline Values: Review Report which includes results from the ecotoxicology research program completed in accordance with Recommendation 14 of the NT EPA Assessment Report 86. The aquatic ecosystem monitoring program is summarised in Section 4.2 of the Final AMP (Enclosure 1). Further details of the aquatic ecosystem monitoring are provided in Appendix A Water Management Plan of the Final AMP (Enclosure 1)."</p> | |
| 56 | The monitoring undertaken for the Bing Bong Dredge Spoil Drain Discharge Point (BBDDP) in accordance with Appendix 4, 5 and 6 must be reviewed to: | | Refer to subconditions | | Refer to sub conditions |
| 56.1 | ensure that the beneficial uses and sites of conservation significance surrounding the BBDDP are protected from any discharges from the Bing Bong Dredge Spoil Drain Discharge Point. | 4 | Full Compliance | <p>Enclosure 3 Bing Bong Loading Facility Environmental Management Plan. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions. Enclosure 5 Peer Review of the Final AMP and BBLF EMP.</p> <p>Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "Section 3 of the BBEMP (Enclosure 3) outlines the community values, beneficial uses and sites of conservation significance (SOCS) relevant to the Bing Bong Dredge Spoil Drain Discharge Point, and a Source-Pathway-Receptor conceptual site model which influences the environmental monitoring and management at the Bing Bong Loading Facility. Section 6 of the BBEMP (Enclosure 3) outlines the monitoring programs undertaken and their performance criteria. To ensure performance criterion are suitable for the protecting ecosystem health, they were derived from the following sources: - WDL 174-11 Appendix 3 Table 1 (Surface Water Monitoring) - Australia and New Zealand Guideline Values (ANZG) 2018 (Marine Metal Concentration, Marine Water) - Sediment quality assessment: a practical guide (Simpson and Batley, 2016) (various sediment monitoring programs) - Schedule 19 of Standard 1.4.1 Contaminants and Natural Toxicants (Food Standards Australia New Zealand [FSANZ], 2017) (Marine Biota)"</p> <p>Enclosure 5 Peer Review of the Final AMP and BBLF EMP states "The BBEMP has a focus on protecting the community values and beneficial uses in the areas adjacent to / influenced by the BBLF." and "Key sources of risk to the environment from MRM's operations have been identified in the Adaptive Management Plan and BBLF Environment Management Plan. Proactive management and monitoring are in place to ensure potential impacts of the handling of ore and overburden and processed materials (tailings and concentrate) from mining activities do not adversely impact the surrounding environment or community."</p> | |
| 56.2 | determine if additional monitoring in the Dredge Spoil Drain is required to verify the likely source of any exceedances detected at the BBDDP. | 4 | Full Compliance | <p>Enclosure 3 Bing Bong Loading Facility Environmental Management Plan. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions.</p> <p>Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "Application of marine water quality guideline values at the BBDDP drain is considered overly conservative as these guideline values are designed to be applied within receiving marine waters, not drains. However, the current monitoring of the dredge spoil drain as outlined in WDL 174-11 (weekly monitoring when active dredge disposal is occurring) is considered sufficient to verify the likely source of any exceedances detected at the BBDDP."</p> | The Operator advised "A review of BBDDP exceedance notifications was undertaken during preparation of the BBEMP, and it was considered the reinstatement of the monthly DSD sampling locations was not required." |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---------------|---|-------|------------------------|---|--|
| 57 | The licensee must provide an Environmental Monitoring Program for the Bing Bong Dredge Spoil Drain Discharge Point to the Administering Authority by 31 March 2021. | 4 | Full Compliance | Email from Operator to DEPWS - MRM Final Adaptive Management Plan and Environmental Monitoring Program - dated 31Mar21. Letter Operator to DEPWS with submission of the Final Adaptive Management Plan dated 31Mar21. Enclosure 2: Consolidated Environmental Monitoring Program. Enclosure 3 Bing Bong Loading Facility Environmental Management Plan. Enclosure 1 McArthur River Mine Final Adaptive Management Plan. The Environmental Monitoring Program was submitted with the Final Adaptive Management Plan on 31Mar21 as evident by the submission email and letter. Monitoring of the Bing Bong Dredge Spoil Drain Discharge Point is included. | |
| 58 | The Environmental Monitoring Program for the Bing Bong Dredge Spoil Drain Discharge Point must include: | | Refer to subconditions | | Refer to subconditions |
| 58.1 | any revised water and sediment monitoring required to achieve the objectives of Condition 56.1. | 4 | Full Compliance | Enclosure 2 Consolidated Environmental Monitoring Program. Enclosure 3 Bing Bong Loading Facility Environmental Management Plan. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "MRM has conducted several monitoring programs in compliance with other regulatory requirements, which are not a requirement of WDL 174-11. The following programs have been integrated into the BBEMP (Enclosure 3): - Metal and Metalloid Concentrations in Near Shore Sediment (Section 6.4.2) - Metal and Metalloid Concentrations in Transshipment Sediment (Section 6.4.3) - Depositional Dust Monitoring (Section 6.3) - Groundwater Monitoring (Section 6.2)". The Independent Monitor confirms that these programs are included in the BBEMP. | |
| 58.2 | a biota monitoring plan that will replace the biota monitoring schedule in Appendix 6. | 4 | Full Compliance | Enclosure 2 Consolidated Environmental Monitoring Program. Enclosure 3 Bing Bong Loading Facility Environmental Management Plan. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions. "Biota monitoring to replace the biota monitoring schedule in WDL 174-11 Appendix 6 can be found in the following sections: - Marine Sediment Quality, Water Quality and Metals in Marine Biota (Section 6.4.4) - Seagrass Diversity and Abundance Monitoring (Section 6.4.5)". The Independent Monitor confirms these sections are included in the Enclosure 3 Bing Bong Loading Facility Environmental Management Plan. | OBS: The biota monitoring schedule included in the consolidated Environmental Monitoring Program has removed the seagrass assessment and vegetation monitoring at Bing Bong Loading Facility. However, they remain in in the WDL194-12 Appendix 6. |
| 59 | The Environmental Monitoring Programs required by Condition 51 and 57 must: | | Refer to subconditions | | Refer to sub conditions |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---------------|--|-------|------------------|--|---|
| 59.1 | be prepared in accordance with the National Water Quality Management Strategy Australian Guidelines for Water Quality Monitoring and Reporting October 2000. | 4 | Full Compliance | <p>Enclosure 3 Bing Bong Loading Facility Environmental Management Plan. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions.</p> <p>There is no reference to the National Water Quality Management Strategy Australian Guidelines for Water Quality Monitoring and Reporting October 2000 in the Consolidated Environmental Monitoring Program, AMP or BBEMP. However, the EMP sets objectives, uses a conceptual model, study design (temporal, frequency, site selection, parameters, etc), ecotoxicological assessment, implementing the field program, QA/QC requirements, laboratory analysis and data analysis and reporting that supports that the Environmental Monitoring Program is in accordance with the Guideline.</p> | <p>Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "The Environmental Monitoring Program meets the general requirements of the National Water Quality Management Strategy Australian Guidelines for Water Quality Monitoring and Reporting October 2000. Specifically:</p> <ul style="list-style-type: none"> - The Program has been designed in conjunction with the Source-Pathway Receptor conceptual model, with each type of monitoring including specific objectives to both confirm the model and inform environmental management. - Monitoring methodologies, sample designs and frequencies, and measured parameters have been designed to meet the objectives of the Program. - Formal reporting requirements have been listed as annually as a part of the Environmental Monitoring Report, which is appropriate for both environmental management and regulatory requirements. Note that additional reporting requirements will continue to be completed by MRM in accordance with specific conditions within WDL 174. - The field sampling programs have largely been developed by suitably qualified specialists, and follow the relevant standards and guidelines. Sampling undertaken by MRM personnel is completed in accordance with the listed MRM procedures and Australian Standards. - MRM and consultants follow standard sample handling and receipt processes, and engage accredited laboratories to undertake analysis of samples. <p>As required by WDL 174-11 Condition 30, analysis of all water samples is completed by a National Association of Testing Authorities (NATA) accredited laboratory."</p> |
| 59.2 | be prepared by a suitably qualified person. | 4 | Full Compliance | <p>Enclosure 3 Bing Bong Loading Facility Environmental Management Plan. Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions.</p> | <p>Adaptive Management Plan states it was prepared by "Senior Environmental Advisor".</p> <p>Enclosure 4 Reconciliation of Relevant WDL 174-11 Conditions states "The Final AMP (Enclosure 1) and BBEMP (Enclosure 3) have been prepared by suitability qualified persons within the MRM Environment Team. MRM also sought input from a number of external experts including Dr Dean Thorburn of Indo-Pacific Environmental, Dr Brent Usher of Klohn Crippen Berger, Aleks Todoroski of Todoroski Air Sciences, and Julian Orth of WRM Water and Environment." The Independent Monitor considers this sufficient to demonstrate that suitably qualified people from the Operator and environmental service providers prepared the Environmental Monitoring Programs.</p> |
| 59.3 | the final environmental monitoring program must be reviewed by a suitably qualified third party prior to submission to the Administering Authority. | 4 | Full Compliance | <p>Letter Operator to DEPWS with submission of the Final Adaptive Management Plan dated 31Mar21. Enclosure 5 Peer Review of the Final AMP and BBLF EMP. https://smi.uq.edu.au/profile/519/barry-noller</p> <p>Third party review by Professor Barry N. Noller, Principal Research Fellow, Centre for Mined Land Rehabilitation. The Independent Monitor viewed his credentials on the University of Queensland website.</p> <p>Letter from the Operator to the DEPWS with submission of the Final Adaptive Management Plan dated 31Mar21 stated under INDEPENDENT PEER REVIEW</p> <p>"In accordance with Conditions 50.2 and 59.3 of WDL 174-11, the Final Adaptive Management Plan and the Bing Bong Loading Facility Environmental Management Plan have been subject to independent peer review by Associate Professor Barry Noller of the University of Queensland (see Enclosure 5). Professor Noller has made a number of conclusions regarding the adequacy of the plans including:</p> <p>"The proposed monitoring programs have been developed with reference to contemporary environmental guidelines and performance criteria. These guidelines together with proactive management and monitoring are able to ensure that potential impacts of the handling of ore and overburden and processed materials (tailings and concentrate) do not adversely impact the surrounding environment or community."</p> | |

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| Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---------------|--|-------|----------------------------|--|---|
| 60 | The licensee must ensure a device is installed to measure flow and calculate the volume of water from the Glyde River and Emu Creek contributing to flow, volume and water quality at SW11. | 2 | Part Compliance (moderate) | <p>Internal Operator email dated 9Jul21 FW:Monitoring compliance with WDL 174-11, inclusive of pdf 20-21 continuous data (note this was a forwarded email originally dated 21Jun21). Email DEPWS to Operator subject RE: MRM Final Adaptive Management Plan and Environmental Monitoring Program dated 16Apr2021. Email Operator to DEPWS subject RE: WDL174-11 Condition 60 and 61 dated 3Feb2020 (before audit period).</p> <p>Water level data for the Glyde River and Emu Creek and water flow for SW11 recorded during the reporting period was provided (20-21 continuous data). The internal Operator email dated 9Jul21 FW:Monitoring compliance with WDL 174-11 showed that data was only captured 54.72% of the time (i.e. data was available between 1Dec20 and 21Feb21, but from then until 1May21 was missing) for the Glyde River. According to the email and supported by the pdf 20-21 continuous data, Emu Creek had 100% data capture.</p> <p>The Independent Monitor understands devices to measure water level were installed. However, there is no evidence to demonstrate collection of water level or flow data for the full wet season at Glyde River.</p> <p>Email DEPWS to Operator subject RE: MRM Final Adaptive Management Plan and Environmental Monitoring Program dated 16Apr2021 states "The non-operational flow devices in Emu Creek and Glyde River are not ideal and should be addressed as a priority. I have clarified that plant and equipment includes flow devices, and there is a need to ensure that they are installed, maintained and operated by someone who is trained to do so. This will be something of interest to us for the coming licensing period." Condition 18 in WDL174-12 has been update to specifically include flow devices "The licensee must ensure any plant and equipment, including flow devices, used by the licensee in conducting the activity: 18.1. is reasonably fit for purpose and use to which it is put; 18.2. is maintained and operational; and 18.3. is operated by a person trained to use the plant and equipment."</p> | <p>The Operator advised the Independent Monitor that: *they consider that devices are installed to measure flow. *they propose to install permanent stations when possible. *the situation can currently occur where they are not able to provide flow data at a time of non-compliance.</p> <p>Issues associated with obtaining flow data for the Glyde River have occurred since 2019. The flow data would be used for the zinc and lead load calculations. There are potential environmental risks if adequate controls are not implemented, including collecting monitoring data that factors into load calculations.</p> <p>OFI: Progress negotiations relating to necessary approval requirements with other authorities to enable construction of the permanent monitoring structures (e.g. Glyde River). Deploy additional loggers in Emu Creek and Glyde River to provide redundancy to ensure continuous data collection.</p> <p>OBS: The condition states installing a device to measure flow. However, water level data is what is recorded, which DEPWS were advised via email Operator to DEPWS subject RE: WDL174-11 Condition 60 and 61 dated 3Feb2020.</p> <p>OBS: This condition has been removed from WDL174-12 (i.e. the WDL for the next audit period) with the requirement now captured via condition 26 due to the inclusion of Emu Creek and the Glyde River in Appendix 4: Table 1.</p> |
| 61 | The licensee must ensure the devices required by condition 60 are installed by 31 December 2019. | 4 | Full Compliance | <p>Email Operator to Department of Environment and Natural Resources subject RE:WDL174-11 Condition 60 and 61 dated 03Feb2020.</p> <p>Email from Operator to Department of Environment and Natural Resources on 03Feb2020 confirming Operator installed data loggers at Emu Creek (monitoring location SW26) and on the Glyde River (monitoring location SW09) in November 2019 titled RE:WDL174-11 Condition 60 and 61</p> | |
| 62 | The licensee must include in the monitoring report, average weekly flow and calculated volumes in each creek or river outlined in condition 60, calculated volumes contributed to SW11 and at any time a non-compliance is reported. | 2 | Part Compliance (moderate) | <p>WDL 174-11 Monitoring Report 1 May 2019 to 30 April 2020 attachment 3 2019-2020 Mine Derived Analyte Loads Assessment.</p> <p>Results for continuous flow recorded at the Glyde River could not be reported for the 2019-2020 audit period (because the logger was not able to be located/retrieved) as required by condition 62. The Operator obtained the 2019-2020 flow data from loggers after the wet season and therefore when they became aware of the non-compliance was in the current audit period.</p> <p>2019-2020 Mine Derived Analyte Loads Assessment section 5 states "The water level logger on Glyde River at SW09 was not able to be retrieved in time for this assessment due to persistent natural base flow conditions. Hence, the Glyde River average weekly flow and calculated volumes could not be provided in this report."</p> <p>The flows and calculated volumes at SW30 are in section 5 of the Annual Monitoring Report. Flows or calculated volumes for Glyde River or Emu Creek do not appear to be reported at the times a non-compliance is reported.</p> | <p>Refer to condition 9 for the relevant OFI.</p> <p>The Operator advised that loggers are deployed when water is present, through the wet season period and into the start of the dry season. Loggers cannot be checked until water level recedes because they are underwater. Manually-downloaded loggers cannot be downloaded until after the wet season.</p> <p>The Operator advised the Independent Monitor that the situation can currently occur where they are not able to provide flow data at a time of non-compliance.</p> <p>The Glyde River 2020-2021 logger was downloaded in June 2021 (outside the audit period) after the water level in the pool which it was installed in became low enough. The assessment of that data was therefore completed outside the audit period and will be audited in 2022.</p> <p>OBS: Flows or calculated volumes for Glyde River or Emu Creek do not appear to be reported at any time a non-compliance is reported.</p> <p>OBS: This condition is not in the WDL 174-12 however, condition 39.7 requires "available" flow rates to be reported in investigation reports for any non-compliance. Given the WDL 174-12 condition only requires "available" flows to be reported with non-compliances the 2022 audit would consider circumstances where the flow data is not available and therefore not reported in the non-compliance report would not be a non-compliance.</p> |



Appendix C
Authorisation Compliance Workbook - DITT

Authorisation Compliance Workbook - DITT

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|-------|-------------------------|--|---|
| Mining Management Plan and Reporting | | | | | | | |
| | | 6 | The Operator must on 31 August 2021 and on each anniversary of that date (or such other date as nominated by the Operator and approved by the Minister), review the approved MMP and if necessary, amend the MMP. [6] | N/A | Not Applicable | | No alternate date was nominated by the Operator for approval by the Minister. There was no new MMP in the audit period. The January 2020 MMP was approved in the audit period. DITT is agreeable to the observation that the Operator note in the EMR annually review of MMP. |
| 7 | 7 | 7 | The Operator must submit quarterly all environmental monitoring data [7] which has been collected since the previous data submission. The data submission must be provided in the approved form (being an MS Excel template that can be provided on request) and include laboratory and field data for the following: | | Refer to sub conditions | C7 EsDat notification example.pdf | Operator submitted Q2 2021, Q1 2021, Q3 2020, Q4 2020 in the required excel file customised to Esdat requirements. DITT provided evidence that they had received the relevant submissions. There was no evidence provided of review of the data, however that requirement is not specified in the condition. EsDat automatically determines any exceedance detected on receipt of the Operator monitoring data. DITT advised "The automated detection of an exceedance in Operator data prompts a targeted review of the data by the responsible Mining Officer. In the event that the identified exceedance has potential to result in environmental harm on the site, the Mining Officer will followup. In the event there are no exceedances, or there is no likelihood of a potential environmental impact, no further action is taken at that point in time." DITT's reievw of the EMR also looks for an explanation of exceedances . No evidence of response to the Operator to their submission of Q4 2020 was provided. |
| 7.a | 7.a | 7.a | surface water; | 4 | Full Compliance | Acknowledgement of receipt of submissions. Email receipt DITT to Operator subject RE: MRM Quarterly Data - Q1 2021 dated 3Jun2021. Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020) Email receipt DITT to Operator (DITT Receipt of Data Q3 2020) | Operator submitted Q2 2021, Q1 2021, Q3 2020, Q4 2020 in the required excel file customised to Esdat requirements. DITT provided evidence that they had received the relevant submissions. There was no evidence provided of review of the data. No evidence of response to the Operator to their submission of Q4 2020 was provided. |
| 7.b | 7.b | 7.b | groundwater; | 4 | Full Compliance | Acknowledgement of receipt of submissions. Email receipt DITT to Operator subject RE: MRM Quarterly Data - Q1 2021 dated 3Jun2021. Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020) Email receipt DITT to Operator (DITT Receipt of Data Q3 2020) | Operator submitted Q2 2021, Q1 2021, Q3 2020, Q4 2020 in the required excel file customised to Esdat requirements. DITT provided evidence that they had received the relevant submissions. There was no evidence provided of review of the data. No evidence of response to the Operator to their submission of Q4 2020 was provided. |
| 7.c | 7.c | 7.c | dust | 4 | Full Compliance | Acknowledgement of receipt of submissions. Email receipt DITT to Operator subject RE: MRM Quarterly Data - Q1 2021 dated 3Jun2021. Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020) Email receipt DITT to Operator (DITT Receipt of Data Q3 2020) | Operator submitted Q2 2021, Q1 2021, Q3 2020, Q4 2020 in the required excel file customised to Esdat requirements. DITT provided evidence that they had received the relevant submissions. There was no evidence provided of review of the data. No evidence of response to the Operator to their submission of Q4 2020 was provided. |

Authorisation Compliance Workbook - DITT

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---|---|---|---|-------|---------------------------|---|---|
| 7.d | 7.d | 7.d | soil; | 3 | Part Compliance (High) | <p>Acknowledgement of receipt of submissions. Email receipt DITT to Operator subject RE: MRM Quarterly Data - Q1 2021 dated 3Jun2021. Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020) Email receipt DITT to Operator (DITT Receipt of Data Q3 2020) EMR 2019- 2020 Appendix D - Soil Monitoring Report McArthur River Mine and Bing Bong Loading Facility October 2019 (SOIL MONITORING REPORT MCARTHUR RIVER MINE AND BING BONG LOADING FACILITY MAY 2019 – APRIL 2020) dated 1Jul2020 EMR 2020- 2021 Appendix D - Soil Monitoring Report May 2020 – April 2021 dated 14Jul2021.</p> <p>Soils sampling occurred in the audit period and did not appear to be submitted in the format required by this condition and that does not appear to have been identified by DITT.</p> | <p>Operator submitted Q2 2021, Q1 2021, Q3 2020, Q4 2020 in the required excel file customised to Esdat requirements.</p> <p>DITT provided evidence that they had received the relevant submissions. No evidence of response to the Operator to their submission of Q4 2020 was provided.</p> <p>There was no evidence provided of review of the data. No soils data had been submitted in the audit period.</p> <p>In the event that the Operator has not provided all the data or it was not in the satisfactory format there is a need for DITT to have identified and followed up on such omissions.</p> <p>OFl: Identify and follow up on any data omissions (i.e. soils, sediments or water transfers in 2021) in the quarterly reports.</p> <p>OFl: Prepare an annual program/register of Operator deliverables and submissions to assist DITT to manage the acknowledgement of receipt, adequacy review of submissions, and timely request for additional information, if required.</p> |
| 7.e | 7.e | 7.e | sediments; | 3 | Part Compliance (High) | <p>Acknowledgement of receipt of submissions. Email receipt DITT to Operator subject RE: MRM Quarterly Data - Q1 2021 dated 3Jun2021. Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020) Email receipt DITT to Operator (DITT Receipt of Data Q3 2020)</p> <p>An improvement has occurred in that sediment samples for May 2021 have been submitted (outside the audit period). However, there is no evidence of sediment samples being submitted in the audit period and that does not appear to have been identified by DITT.</p> | <p>Operator submitted Q2 2021, Q1 2021, Q3 2020, Q4 2020 in the required excel file customised to Esdat requirements.</p> <p>DITT provided evidence that they had received the relevant submissions. There was no evidence provided of review of the data.</p> <p>No evidence of response to the Operator to their submission of Q4 2020 was provided.</p> <p>OFl: Ref to condition 7.d.</p> |
| 7.f | 7.f | 7.f | gas; and | 4 | Full Compliance | <p>Acknowledgement of receipt of submissions. Email receipt DITT to Operator subject RE: MRM Quarterly Data - Q1 2021 dated 3Jun2021. Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020) Email receipt DITT to Operator (DITT Receipt of Data Q3 2020)</p> | <p>Operator submitted Q2 2021, Q1 2021, Q3 2020, Q4 2020 in the required excel file customised to Esdat requirements.</p> <p>DITT provided evidence that they had received the relevant submissions. There was no evidence provided of review of the data.</p> <p>No evidence of response to the Operator to their submission of Q4 2020 was provided.</p> |
| 7.g | 7.g | 7.g | water transfers and discharges (including dates, times and volumes).[8] | 3 | Part Compliance (High) | <p>Acknowledgement of receipt of submissions. Email receipt DITT to Operator subject RE: MRM Quarterly Data - Q1 2021 dated 3Jun2021. Email receipt DITT to Operator (DPIR receipt of DPIR Data Q2 2020) Email receipt DITT to Operator (DITT Receipt of Data Q3 2020)</p> <p>The recommendation in the 2020 AEPAR for the Operator to submit water transfer data quarterly has been implemented in the submission of the last quarter of the audit period. However, the data was not provided for the first three quarters.</p> <p>Water discharge is included in the spreadsheets where discharges occurred (2010-2012 DPIR Data and 2101 - 2103 DITT Data). Provision of water transfer data is compliant.</p> | <p>Operator submitted Q2 2021, Q1 2021, Q3 2020, Q4 2020 in the required excel file customised to Esdat requirements.</p> <p>DITT provided evidence that they had received the relevant submissions. No evidence of response to the Operator to their submission of Q4 2020 was provided.</p> <p>There was no evidence provided of review of the data. No water transfer data had been submitted for the first three quarters of the audit period.</p> <p>In the event that the Operator has not provided all the data or it was not in the satisfactory format there is a need for DITT to have identified and followed up on such omissions.</p> <p>OFl: Ref to condition 7.d.</p> |

Authorisation Compliance Workbook - DITT

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|-------|-------------------------|--|--|
| | | 8 | From the date of authorisation of the Overburden Management Project, the Operator must provide an "as built" construction report, for the structures that the approved MMP specifies require "as built" construction reports, at the completion of each structure approved as per the MMP, within 30 days upon construction being finalised. | N/A | Not Applicable | DITT emailed Operator 26Aug2020 acknowledging receipt of the TSF Cell 2 Stage 5 Raise Construction Report. DITT emailed Operator 9Nov2020 TSF Cell 1 Stage 4 construction report. | This condition is only relevant from 13Nov2020. DITT advised that all TSF lifts and NOEF stages would require this. The Operator advised "Jan 2020 MMP Appendix G 'NOEF Management Plan' section 10.1 outlines the requirements of the NOEF design and as-built reporting. Note DITT advised the Independent Monitor that they flag the requirement for construction reports from the Operator in response to submission of TSF Quarterly Reports. August 2020 TSF Cell 1 stage 5 design report received. No as built construction reports received in the audit period. |
| | | 9 | The Operator must submit on or before 31 August 2021 and on each anniversary of that date (or such other date as nominated by the Operator and approved by the Minister), an EMR for the previous year in the reporting period as agreed with the Department. | 4 | Full Compliance | Letter dated 31Aug2020 from Operator to DITT Re: McArthur River Mine – 2019-20 Environmental Monitoring Report. Letter of response from DITT to Operator dated 13 July 21 Re: McArthur River Mining Pty Ltd – McArthur River Mine 20 EMR (outside audit period). | EMR for 2020 received by DITT (registered in system on 4 September 2020). DITT advised the EMR was discussed in technical groups. Acceptance letter from DITT to Operator following review of EMR dated 13Jul2021. Letter of response from DITT to Operator dated 13 July 2021 Re: McArthur River Mining Pty Ltd – McArthur River Mine 2020 EMR stated "To ensure MRM's commitment to meet its obligations and requirements under the MMA and Authorisation, this department's comments resulting from the review of the 2020 EMR are provided at Attachment A." OBS: Reduce the timeframe required to review the EMR and respond to the Operator on the EMR sooner to enable timely implementation of any recommended improvements. |
| Security and Levy | | | | | | | |
| | | 10 - previously 8 | The Operator must provide to the Minister a security of \$400,003,226 in the form of cash or an unconditional bank guarantee prior to undertaking any mining activities authorised by this Variation of Authorisations 0059-01 and 0059-02. [9] | 4 | Full Compliance | Letter from DPIR to Operator dated 10Aug20 Re: Variation of Authorisation 0059 and Mining Management Plan Approval (10Aug20_Security Reassessment). Letter from DPIR to Operator dated 15Aug19 Re: Variation of Authorisation 0059-01 and 0059-02 and Security Request (15Aug19_Security.) Letter DITT to Operator subject Re: Variation of Authorisation 0059, Unplanned Closure Plan Approval and Security Request dated 18Jun21. The previous Authorisations required the following: 15Aug19: \$519,728,466 and 10Aug2020: \$519,669,461. Letter from DPIR to Operator dated 15Aug19 stated "In accordance with Condition 8 of the Schedule, the security for the McArthur River Mine has been reviewed in relation to activities proposed in the January 2019 Amendment, and I advise that an additional security of \$33,045,183 is required. Due to the staged approvals provided for this MMP Amendment, DPIR currently holds \$33,045,183 in credit. This credit will be claimed as part of meeting the security requirements of the MMA, equating to total security held for the McArthur River Mine at \$519,728,466. As such no further security is required and you may commence activities approved under the MMP amendment." The Independent Monitor confirms this as compliance. Letter from DPIR to Operator dated 10Aug20 stated "In accordance with condition 8 of the schedule the security for McArthur River Mine has been reassessed and it has been determined that the security amount required to be held against the project has reduced by \$59,005." The Independent Monitor confirms this as compliance. | Letter DITT to Operator dated 18Jun21, while outside the audit period, states "As such, you are required to either: (a) provide the additional security amount of \$5,113,442; or (b) provide a replacement bank guarantee for the total amount of \$405,116,668." The Independent Monitor considers this sufficient to support that the security had been in place. |
| | | 11 - previously 9 | The security provided for under Condition 10 will be reassessed, and may be revised, following the submission, assessment and approval of an: | | Refer to sub conditions | | |

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| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|-------|---------------------|---|---|
| | | 11.a | independent third party assessment of the security by a qualified person approved by the Minister (also refer Condition 40); | 4 | Full Compliance | Letter from Operator to DITT dated 3Feb2020 RE: INDEPENDENT THIRD-PARTY ASSESSMENT OF MCARTHUR RIVER MINE SECURITY (outside the audit period) Letter from DITT to Operator 11Feb2020 Re: Independent Third-party Assessment of McArthur River Mine Security (outside the audit period). Email from Operator to DITT dated 10Jul20 MRM Security - Independent Third-Party Assessment (20200710 MRM-DPIR Security - Independent Third-Party Assessment) Email from DITT to Operator dated 10Jul20 MRM Security - Independent Third-Party Assessment (20200710 DPIR receipt - MRM Security - Independent Third-Party Assessment). Enclosure 4 - Phronis Independent Security Audit Report 2021 | Operator requested independent third party assessors and DITT approved them before the audit period. The assessment was used for the security that was approved 13Nov2020 (in the audit period). |
| | | 11.b | amended MMP; | 4 | Full Compliance | Authorisation 0059 13Nov20 No MMP amendments were submitted in the audit period. However January 2020 MMP was approved as Authorisation 0059 13Nov20, which included the updated security amount. | |
| | | 11.c | amendment to the Unplanned Closure Plan. | 4 | Full Compliance | Email from Operator to DITT dated 16Apr21 MRM 2021 Unplanned Closure Plan and Independent Security Assessment Enclosure 1 - MRM Unplanned Closure Plan 2021_FINAL_April Enclosure 2 - MRM Security Calculation_2021_210416_Final Enclosure 4 - Phronis Independent Security Audit Report 2021 | DITT advised Operator submitted revision to Unplanned Closure Plan with increase in security (funds received 30Jun21 - outside the audit period). |
| | | 12 | The revised security amount to be provided under Condition 10 is to be provided prior to creating the new disturbance, covered under the revised security as per written notification from the Department. For the avoidance of doubt, the Operator must provide the revised security amount in the form of cash or an unconditional bank guarantee to the Minister. | 4 | Full Compliance | Refer to condition 10 for evidence of security payment. As the security amount decreased in the audit period, this condition is considered compliant. | DITT was not advise of any incident in the audit period where the Operator commenced any new disturbance before providing the bank guarantee. Operator aware of need to undertake additional works before January 2020 MMP approved so requested TSF raise via an amendment to the MMP, which provided the 10Aug20 authorisation. |
| | | 13 - previously 10 | Each financial year, upon receipt of a written notice by the Minister as to the levy payable for that financial year, the Operator must pay a levy to the Mining Remediation Fund of an amount calculated in accordance with the Act and as stated by the Minister in the notice. [10] | 4 | Full Compliance | Internal DITT email 28Oct20 FW: MRM 2020/21 Levy[External Sender] Mining Security Levy Reminder Notice from DITT to Operator dated 21Sep20. The levy was paid late by the Operator. However, DITT has issued a reminder notice and so DITT are considered compliant. | Internal DITT email advising that the Operator levy invoice for \$5,197,283 has been paid dated 28Oct20. OBS: Prepare an annual program/register of Operator deliverables and submissions to assist DITT to manage the acknowledgement of receipt and adequacy review of submissions and timely request for additional information, if required. |
| Overburden Management Project | | | | | | | |
| | | 15 - previously 108 | The Operator must provide written notice to the Minister and NT EPA if it alters or proposes to alter the McArthur River Mine Overburden Management Project and/or commitments, safeguards or mitigation measures in the Environmental Impact Statement in such a manner that the environmental significance of the action may have changed, in accordance with clause 14A of the Environmental Assessment Administrative Procedures 1984. | N/A | Not Applicable | Minutes of Technical Working Group Meeting Thursday 17 June (outside audit period) | DITT advised that they are not aware of any works in the audit period that were not in accordance with the approval. Technical working group meetings (DITT and Operator) operational and general update provided by Operator (i.e. water balance tracking, activities occurring). Not indicating any works not approved. |
| | | 16 - previously 107, there are changes | Within 18 months of the date of authorisation of the Overburden Management Project, unless otherwise agreed in writing by the Department, the Operator must submit a plan to the Department for review, that: | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20 |
| | | 16.a | Enables measurement of total loads of lead and zinc and is consistent with requirements of Condition 27; | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |
| | | 16.b | Quantifies and ensures annual loads of lead and zinc discharged to the McArthur River in future years (July to June) do not exceed the loads discharged in 2017-2018 (as per Condition 68(e)) taking into account seasonal variations in rainfall, and subject to future annual load calculations; | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |
| | | 16.c | addresses recommendations and outcomes arising from audits of loads by the Independent Monitor; | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |

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| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|-------|-------------------------|----------|---|
| | | 16.d | include sufficient detail to inform the development of monitoring and management measures (including but not limited to early warning alerts and intervention levels), as part of the site wide AMP (Condition 45); | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |
| | | 16.e | once approved by the Department, be implemented by the Operator by the Operator. | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |
| | | 17 - previously 110, there are changes | Within 18 months date of authorisation of authorisation of the Overburden Management Project, the Operator must: | | Refer to sub conditions | | |
| | | 17.a | submit a plan to the Department for review, that shall include: | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |
| | | 17.a.i | site-specific trigger values determined in accordance with Australian and New Zealand Guidelines for Fresh and Marine Water Quality, 2018 framework, incorporating ANZECC (2000) guidelines, at appropriate monitoring locations, in accordance with Condition 27; | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |
| | | 17.a.ii | a commitment that creeks on the mine site to show long-term improving trends in water quality within 20 years after cessation of mining; | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |
| | | 17.a.iii | methodology to calculate contaminant loads and contaminant concentrations entering creeks and the McArthur River using system modelling that must: | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |
| | | 17.a.iii.a | use suitable site-specific data collected as part of Condition 26; | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |
| | | 17.a.iii.b | be subject to review by the relevant independent panel; | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |
| | | 17.a.iii.c | detail specific assumptions to be tested including but are not limited to: | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |
| | | 17.a.iii.c.i | groundwater flow paths; | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |
| | | 17.a.iii.c.ii | attenuation of metals from mine-derived wastes; | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |
| | | 17.b | once approved by the Department, implement the plan; | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |
| | | 17.c | incorporate the relevant findings from the plan into the AMP. | N/A | Not Applicable | | Future item - Due 18 months from 13Nov20. |
| | | 18 - previously included in 111 | The Operator must provide a written response to the Department, if an independent technical panel's, required under Condition 21, review of the models and modelling outputs, and the data collection programs that informed the model development at Condition 17(a)(iii) address recommendations for improvements. All relevant outputs must be used to inform and update the AMP. | N/A | Not Applicable | | Future item. DITT advised that no independent technical panels (TSF, NOEF or mine closure) have been set up. Community reference group is the priority and then independent technical panels. |
| | | 19 - previously 112, changed | Every three (3) years from the date of authorisation of the Overburden Management Project, an independent environmental audit of the Quality Assurance (QA) and Quality Control (QC) procedures and waste rock identification and handling performance must be undertaken and: | | Refer to sub conditions | | |
| | | 19.a | the results of the audit be provided within six (6) weeks to the Department and to the relevant independent panel; | N/A | Not Applicable | | Future item. Only 3 years from 13Nov21. |
| | | 19.b | the Operator must provide a written response to the satisfaction of the Department where findings from the audit and review by the relevant panel includes matters that need to be addressed or areas for improvement. | N/A | Not Applicable | | Future item. Only 3 years from 13Nov21. |
| | | 21 - previously 114 | The Operator must provide funding and assist the Department to establish and operate an independent panel(s) of experts to advise on matters affecting the environmental performance of the NOEF, TSF and mine closure planning. | N/A | Not Applicable | | Future item. No panels set up. DITT is working through the appropriate timeframes for panels. |
| | | 22 - previously 115 | Within 12 months of date of authorisation of the Overburden Management Project, the Operator must submit a report to the Department for review, detailing the results of relevant studies undertaken to inform the requirements for implementation (including timelines) of a NOEF groundwater seepage interception and recovery system that: | N/A | Not Applicable | | Future item. Twelve months from 13Nov20. Noted in the 2019-2020 EMR report how the Operator is tracking. |
| | | 22.a | controls seepage to the Barney Creek diversion channel and the McArthur River; | N/A | Not Applicable | | Future item. Twelve months from 13Nov20. Noted in the 2019-2020 EMR report how the Operator is tracking. |
| | | 22.b | achieves a recovering trend in the Barney Creek diversion channel and the old McArthur River channel (at SW06) water quality within 20 years of cessation of mining; | N/A | Not Applicable | | Future item. Twelve months from 13Nov20. Noted in the 2019-2020 EMR report how the Operator is tracking. |

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| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|-------|---------------------|----------|---|
| | | 22.c | facilitates achieving requirements of Conditions 16 and 17. | N/A | Not Applicable | | Future item. Twelve months from 13Nov20. Noted in the 2019-2020 EMR report how the Operator is tracking. |
| | | 23 | Within 24 months of date of authorisation of the Overburden Management Project, the Operator must submit a NOEF geosynthetic liner cover system plan to the Department for review. The plan must: | N/A | Not Applicable | | Future item. Twenty-four months from 13Nov21. DITT site visit observed a new trial site on the NOEF in addition to the site on the CENOEF (monitoring sensors embedded). |
| | | 23.a | outline a process (including timelines) to test and evaluate (i.e. criteria) the constructability and effectiveness of geosynthetic liner cover options including a geosynthetic liner /compacted clay layer combination; | N/A | Not Applicable | | Future item. Twenty-four months from 13Nov21. DITT site visit observed a new trial site on the NOEF in addition to the site on the CENOEF (monitoring sensors embedded). |
| | | 23.b | include implementation of trials on rehabilitated stages of the NOEF; | N/A | Not Applicable | | Future item. Twenty-four months from 13Nov21. DITT site visit observed a new trial site on the NOEF in addition to the site on the CENOEF (monitoring sensors embedded). |
| | | 23.c | identify relevant performance parameters must be monitored, including but not limited to: | N/A | Not Applicable | | Future item. Twenty-four months from 13Nov21. DITT site visit observed a new trial site on the NOEF in addition to the site on the CENOEF (monitoring sensors embedded). |
| | | 23.c.i | slope stability during extreme events; | N/A | Not Applicable | | Future item. Twenty-four months from 13Nov21. DITT site visit observed a new trial site on the NOEF in addition to the site on the CENOEF (monitoring sensors embedded). |
| | | 23.c.ii | cover performance as a result of heat effects; | N/A | Not Applicable | | Future item. Twenty-four months from 13Nov21. DITT site visit observed a new trial site on the NOEF in addition to the site on the CENOEF (monitoring sensors embedded). |
| | | 23.c.iii | tolerance of the geosynthetic liner to expected differential settlement; | N/A | Not Applicable | | Future item. Twenty-four months from 13Nov21. DITT site visit observed a new trial site on the NOEF in addition to the site on the CENOEF (monitoring sensors embedded). |
| | | 23.c.iv | veracity of cover longevity predictions; | N/A | Not Applicable | | Future item. Twenty-four months from 13Nov21. DITT site visit observed a new trial site on the NOEF in addition to the site on the CENOEF (monitoring sensors embedded). |
| | | 23.c.v | likely long-term maintenance requirements. | N/A | Not Applicable | | Future item. Twenty-four months from 13Nov21. DITT site visit observed a new trial site on the NOEF in addition to the site on the CENOEF (monitoring sensors embedded). |
| | | 23.d | Include reporting of trial results and monitoring outcomes: | N/A | Not Applicable | | Future item. Twenty-four months from 13Nov21. DITT site visit observed a new trial site on the NOEF in addition to the site on the CENOEF (monitoring sensors embedded). |
| | | 23.d.i | within three years from the submission of the plan; | N/A | Not Applicable | | Future item. Twenty-four months from 13Nov21. DITT site visit observed a new trial site on the NOEF in addition to the site on the CENOEF (monitoring sensors embedded). |
| | | 23.d.ii | every three years thereafter, to the relevant independent panel and the Community Reference Group for review, and shall be audited by the Independent Monitor. The Operator must provide a written response to the Department, if review from the relevant panels and Community Reference Group require matters to be addressed; | N/A | Not Applicable | | Future item. Twenty-four months from 13Nov21. DITT site visit observed a new trial site on the NOEF in addition to the site on the CENOEF (monitoring sensors embedded). |
| | | 23.d.iii | must be used to inform the AMP and closure planning for the mine. | N/A | Not Applicable | | Future item. Twenty-four months from 13Nov21. DITT site visit observed a new trial site on the NOEF in addition to the site on the CENOEF (monitoring sensors embedded). |
| | | 23.e | The NOEF geosynthetic liner cover system plan, once approved by the Department, must be implemented by the Operator. | N/A | Not Applicable | | Future item. Twenty-four months from 13Nov21. DITT site visit observed a new trial site on the NOEF in addition to the site on the CENOEF (monitoring sensors embedded). |
| | | 24 -previously 117, changed | Within five (5) years of the date of authorisation of the Overburden Management Project, the Operator must submit a strategy to the Department that details the long-term disposal management of tailings into the mine pit void, submerged under a suitable depth of pit water. The plan must: | N/A | Not Applicable | | Future item. Five years from 13Nov21. 2020 MMP approval EPA recommendations 86 required the tailings to all go in the pit. Currently not able to fit in the pit (or be submerged) so additional security included to address this. |
| | | 24.a | include strategies on the tailings reprocessing and assessment of residual chemical contaminants that may likely impact on meeting the requirements of Condition 16; | N/A | Not Applicable | | Future item. Five years from 13Nov21. |
| | | 24.b | be reviewed by the relevant independent panel. | N/A | Not Applicable | | Future item. Five years from 13Nov21. |

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| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|-------|-------------------------|----------|---|
| | | 25 | Once approved by the Department, the strategy developed in accordance with Condition 24 must be used to develop a plan five (5) years prior to cessation of mining, for approval by the Department. Any requirement to vary the approved disposal strategy or plan must be: | N/A | Not Applicable | | Future item. Condition triggered by condition 24, which is not until required until five years from 13Nov21. |
| | | 25.a | applied for in writing to the Minister; | N/A | Not Applicable | | Future item. Condition triggered by condition 24, which is not until required until five years from 13Nov21. |
| | | 25.b | based on leading practice and site conditions; | N/A | Not Applicable | | Future item. Condition triggered by condition 24, which is not until required until five years from 13Nov21. |
| | | 25.c | supported by the relevant independent panel; | N/A | Not Applicable | | Future item. Condition triggered by condition 24, which is not until required until five years from 13Nov21. |
| | | 25.d | notified to the NT EPA in accordance with Condition 15. | N/A | Not Applicable | | Future item. Condition triggered by condition 24, which is not until required until five years from 13Nov21. |
| | | 26 - previously 118, changed | Within 12 months of date of authorisation of the Overburden Management Project, the Operator must review and synthesise all available and relevant information to submit a revised water monitoring plan (surface water and groundwater) to the Department for review, ensuring the plan is capable of identifying and quantifying impacts of mining activities on the environmental values and beneficial uses of the McArthur River. | N/A | Not Applicable | | Future item. Within 12 months from 13Nov21. DITT advised they had let Operator know that before the 2020 EMR no holistic or trends assessment of plans had been seen in the EMR. DITT observed commencement of this in the 2020 EMR. The holistic assessment undertaken (refer 2020 EMR) noted via dust, water quality and fluvial assessments that there was an issue near the bridge. Refer DITT letters responding to 2019 and 2020 EMRs. |
| | | 27 - previously 118, changed | The plan required under Condition 26 must: | | Refer to sub conditions | | Future item. Condition triggered by condition 26, which is not until required until 12 months from 13Nov21. |
| | | 27.a | allow for assessment of compliance with Condition 16 and include sufficient detail to inform/develop/update the AMP; | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not until required until 12 months from 13Nov21. |
| | | 27.b | at a minimum: | | Refer to sub conditions | | |
| | | 27.b.i | quantify loads of lead and zinc entering the McArthur River each year; | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not until required until 12 months from 13Nov21. |
| | | 27.b.ii | quantify impacts to water quality and trends in groundwater to determine that objectives and targets are being met, including the effectiveness of source control to reduce loads to as low as is reasonably practicable; | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not until required until 12 months from 13Nov21. |
| | | 27.b.iii | develop appropriate future trigger values for waterways on the mine site and the McArthur River in accordance with the ANZECC Guidelines. In the interim, the trigger values in the most current WDL shall be used; | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not until required until 12 months from 13Nov21. |
| | | 27.c | be prepared in consultation with the NT EPA; | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not until required until 12 months from 13Nov21. |
| | | 27.d | be prepared in consultation with the relevant independent panel; | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not until required until 12 months from 13Nov21. |
| | | 27.e | once approved by the Department, be implemented by the Operator; | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not until required until 12 months from 13Nov21. |
| | | 27.f | be subject to consultation with the relevant independent panel in the event that the plans requires updating (e.g.to maintain the currency of the monitoring network); | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not until required until 12 months from 13Nov21. |
| | | 27.g | ensure results of the program: | | Refer to sub conditions | | |
| | | 27.g.i | are reported annually to the Department; | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not until required until 12 months from 13Nov21. |
| | | 27.g.ii | are audited by the Independent Monitor every three years; | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not until required until 12 months from 13Nov21. |
| | | 27.g.iii | be published on the Operator's website. | N/A | Not Applicable | | Future item. Condition triggered by condition 26, which is not until required until 12 months from 13Nov21. |
| | | 28 - previously 119, changed | Within 18 months of date of authorisation of the Overburden Management Project, the Operator must submit a research and investigation program to the Department for review that establishes the concentration of mine-derived contaminants at which chronic and acute impacts to biota of relevance to the McArthur River system occur using recognised and accepted eco-toxicological testing, and: | N/A | Not Applicable | | Future item. 18 months from 13Nov20. |

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| | | 28.a | the results of this program must be integrated with other relevant programs monitoring programs and management plans; | N/A | Not Applicable | | Future item. 18 months from 13Nov20. |
| | | 28.b | the plan once approved by the Department must be implemented by the Operator. | N/A | Not Applicable | | Future item. 18 months from 13Nov20. |
| | | 29 - previously 120, changed | Within 18 months of date of authorisation of the Overburden Management Project, the Operator must submit an aquatic ecosystem monitoring program to the Department for review that provides improved understanding of aquatic ecosystems in the McArthur River from changing water flows, levels and quality, including available dry season habitat. The program must: | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov20. |
| | | 29.a | assess impacts of the mine on water levels in refuge pools/waterholes, upstream and downstream of the mine, including in the McArthur River diversion channel; | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov20. DITT recommended technical working group discussions related to sacred site be expanded to broader sacred site issues (to infer if water quality has been maintained). Operator not able to sample sacred site water directly but consider using surrounding data. Dependent on the outcome of the TWG discussions, DITT may request inclusion of this broader assessment in the EMR to proactively address this. DITT does not have access to conditions of the AAPA certificate but looking to proactively manage this. |
| | | 29.b | assess impacts of the mine on water quality in refuge pools/waterholes in the dry season; | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. |
| | | 29.c | assess impacts of the mine on the health of aquatic biota in the McArthur River using non-lethal sampling methods; | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov20. |
| | | 29.d | be designed to be integrated with requirements of the AMP consistent with Condition 45; | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov20. |
| | | 29.e | once approved by the Department, be implemented by the Operator. | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov20. |
| | | 30 - previously 121 | At all times, the Operator must conduct works consistent with the Northern Territory Aboriginal Sacred Sites Act 1989 and valid AAPA certificate. All conditions of the AAPA certificate must be complied with (including but not limited to NOEF height restrictions), and evidence produced to demonstrate compliance, when requested by the Minister. | N/A | Not Applicable | | DITT advised no requests have been made. |
| | | 31 - previously 122 | The Operator must not disturb or encroach within 5m of archaeological site MRM4, until a design of the NOEF is agreed in writing by the Department. Consultation between the Operator and Minister for Arts, Culture and Heritage must be undertaken prior to seeking endorsement of the design. | N/A | Not Applicable | | NOEF design is not agreed in writing by DITT so this condition is a future item for DITT. |
| | | 32 - previously 123 | Within six months of date of authorisation of the Overburden Management Project, the Operator must provide a report to the Minister, and AAPA or the Minister for Arts, Culture and Heritage (where relevant) that demonstrates the consultation process undertaken or provide a plan to the Minister that details consultation activities and timeliness to identify and engage with appropriate custodians and traditional owners with an interest in land that would be or maybe affected by the Overburden Management Project. | 4 | Full Compliance | Email Operator to DITT re TRM: RE: Cultural Heritage Management Stakeholder Engagement Report dated 9Feb21. Updated Cultural Heritage Management Stakeholder Engagement Report dated February 2021 submitted on 9Feb21. | DITT advised that the Operator was asked to update the report. |
| | | 33 - previously 124, changed | Within 12 months of date of authorisation of the Overburden Management Project, the Operator must develop or revise and submit to the Department for review an existing air quality plan that monitors sulfur dioxide emissions at an appropriate location between the NOEF and sensitive receptors determined in consultation with NT EPA. | N/A | Not Applicable | Letter DENR to DITT Re : Proposed sulfur dioxide monitoring location (Recommendation 19 of Assessment Report 86) dated 17Jul20. | Future item for inclusion of "monitors sulfur dioxide emissions at an appropriate location between the NOEF and sensitive receptors determined in consultation with NT EPA". Within 12 months from 13Nov20. |
| | | 34 - previously 124, changed | The air quality monitoring plan required under Condition 33 must include: | | Refer to sub conditions | | Future item. Condition 33 is the trigger and not required until within 12 months from 13Nov20. |
| | | 34.a | objectives, locations, frequency of monitoring, trigger values and reporting commitments to manage and protect any potential air quality risk to human health outside of the mineral lease; | N/A | Not Applicable | | Future item. Condition 33 is the trigger and not required until within 12 months from 13Nov20. |
| | | 34.b | evidence of consultation with the NT EPA to be provided at the time of the plan submission; | N/A | Not Applicable | | Future item. Condition 33 is the trigger and not required until within 12 months from 13Nov20. |

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| | | 34.c | once approved by the Department, be implemented by the Operator. | N/A | Not Applicable | | Future item. Condition 33 is the trigger and not required until within 12 months from 13Nov20. |
| | | 35 - previously 124, changed | The results of the air quality plan for each reporting frequency must be: | | Refer to sub conditions | | |
| | | 35.a | made available on the Operator's website. Initial monitoring results to be reported within 6 months of the plan being accepted by the Department or an alternative timeframe as agreed in writing with the Department; | N/A | Not Applicable | | Future item. Condition 33 is the trigger and not required until within 12 months from 13Nov20. |
| | | 35.b | incorporated where relevant in the AMP. | N/A | Not Applicable | | Future item as AMP not due until 2022. |
| | | 36 - previously 125, changed | Within 24 months of date of authorisation of the Overburden Management Project, the Operator must submit a monitoring and management plan to the Department for review that manages risks of metal toxicity from human consumption of aquatic fauna obtained from the McArthur River. The plan must: | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov20. |
| | | 36.a | determine if aquatic fauna obtained from any reach of the McArthur River, that may be impacted by the mine's operations, is safe to eat; | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov20. |
| | | 36.b | include demonstrated evidence of consultation with NT EPA; | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov20. |
| | | 36.c | detail public reporting of the monitoring results, including at appropriate locations in the Borroloola region; | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov20. |
| | | 36.d | include provisions for implementation and maintenance of signage at waterways at the MRM site in accordance with the requirements of Condition 62 until the risk of contamination from consumption of this aquatic fauna is demonstrated to be acceptable by the Department; | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov20. |
| | | 36.e | once approved by the Department, be implemented by the Operator. | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov20. |
| | | 37 - previously 126, changed | Within 24 months of date of authorisation of the Overburden Management Project, the Operator must submit a plan to the Department for review that outlines monitoring program for management of Largemouth Sawfish. The plan must: | N/A | Not Applicable | EMR 2019 - 2020 Appendix O Acoustic Monitoring in the McArthur River, 2019 | Future item. Within 24 months from 13 Nov20. EMR 2019 - 2020 Appendix O did report tagging of the sawfish. |
| | | 37.a | include a sampling strategy for Largemouth Sawfish that is non-lethal; | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov20. EMR 2019 - 2020 Appendix O did report tagging of the sawfish. |
| | | 37.b | include details of parameters and criteria, from which the results could be used to define specific (measurable and time-bound) performance indicators to abate a significant decline in Largemouth Sawfish movement; | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov20. EMR 2019 - 2020 Appendix O did report tagging of the sawfish. |
| | | 37.c | include trigger levels for investigation and implementation of management measures; | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov20. EMR 2019 - 2020 Appendix O did report tagging of the sawfish. |
| | | 37.d | once approved by the Department, be implemented by the Operator. | N/A | Not Applicable | | Future item. Within 24 months from 13 Nov20. EMR 2019 - 2020 Appendix O did report tagging of the sawfish. |
| | | 38 - previously 127, changed | Within six months following the establishment of the required panels and groups in accordance with Condition 21, the Operator must: | | Refer to sub conditions | | Future item. Panels and groups not established. |
| | | 38.a | develop environmental objectives for a Care and Maintenance Plan in consultation with the relevant Independent Panels, CRG, custodians and traditional owners; | | - | | Provided for context related to condition 38.b. |
| | | 38.b | submit this to the Department for review. | N/A | Not Applicable | | Future item. Panels and groups not set up. |
| | | 39 - previously 127, changed | Within five years of date of authorisation of the Overburden Management Project, the environmental objectives arising from Condition 38 must be used to develop a Care and Maintenance Plan in consultation with the Department. | N/A | Not Applicable | | Future item. Within five years from 13 Nov2020. |
| | | 40 - previously 128, changed | The Operator must facilitate an independent third-party assessment of the security for rehabilitation of disturbances resulting from authorised activities in the approved MMP that is consistent with requirements under Conditions 10, 11 and 12, to the satisfaction of the Department, and every 3 years thereafter if the security has been re-calculated or adjusted. | 4 | Full Compliance | Internal memo dated 18 June 2021 Re: Vary Authorisation 0059 McArthur River Mining Pty Ltd - McArthur River Mine (outside audit period but assessment of plan submitted in the audit period) | Unplanned Closure Plan submitted by Operator on 19Apr2021. Internal DITT endorsement memo recommendation implies satisfaction of DITT. |

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| | | 41 - previously 128, changed | The Operator, consistent with Condition 40, must: | | Refer to sub conditions | | |
| | | 41.a | commission a qualified person to review the security amount whose appointment is accepted by the Minister; | 4 | Full Compliance | Letter from Operator to DITT dated 3Feb20 RE: INDEPENDENT THIRD-PARTY ASSESSMENT OF MCARTHUR RIVER MINE SECURITY (outside the audit period) Letter from DITT to Operator 11Feb20 Re: Independent Third-party Assessment of McArthur River Mine Security (outside the audit period) | Letter dated 11Feb20 from DITT approved independent third-party auditor. |
| | | 41.b | ensure that the security is reviewed and delivered to the Department within six months of acceptance of the qualified person. | 4 | Full Compliance | Email from DITT to Operator dated 10Jul20 DPIR receipt - MRM Security - Independent Third-Party Assessment. Email from Operator to DITT dated 10Jul20 MRM-DPIR Security - Independent Third-Party Assessment. Email Operator to DITT subject MRM 2021 Unplanned Closure Plan and Independent Security Assessment dated 16Apr2021 Enclosure 1 - MRM Unplanned Closure Plan 2021_FINAL_April Enclosure 2 - MRM Security Calculation_2021_210416_Final Enclosure 4 - Phronis Independent Security Audit Report 2021 DITT acknowledged receipt of the independent third-party review of the security amount on 10Jul20, which is within six months of the acceptance of the qualified person on 11Feb20. The 16Apr2021 submission of the security included a third party review that was not required by a condition of the Authorisation and therefore there is no compliance issue associated with it not being undertaken within six months of acceptance of the qualified person. | |
| | | 42 - previously 129, changed | For every approved MMP and MMP amendment, the Operator must provide a revised copy of the approved document that removes commercially sensitive information, includes an overview and environmental section, and is suitable for publication on the Department's website, or provide written approval to make the complete documents publicly accessible. | 4 | Full Compliance | https://industry.nt.gov.au/__data/assets/pdf_file/0005/931208/mcarthur-river-mine-mining-management-plan.pdf | January 2020 MMP (sanitised version) is on the DITT's website. |
| | | 43 - previously 130 | The Operator must assist, as required, the Department to establish and operate a Community Reference Group (CRG). | 4 | Full Compliance | Letter DITT to CEO DITT of the Chief Minister and Cabinet RE: Development of Terms of Reference for McArthur River Mine Community Reference Group dated 30Nov20. (M2015 0024-0063~0003 Letter CEO DCMC - CRG) Email AAPA to DITT subject Correspondence from CEO AAPA - MRM dated 15Dec20 Email DITT to DEPWS Subject For consideration draft Terms of Reference - McArthur River Mine Community Reference Group DEPWS finalisation of ToR dated 31May21 (outside audit period) Email NT EPA to DITT subject NT EPA correspondence draft Terms of Reference - McArthur River Mine Community Reference Group dated 6Jun20 (endorsement of ToR) (outside the audit period) The evidence provided demonstrates that DITT is progressing the CRG. | refer CRG on DITT website : https://industry.nt.gov.au/boards-and-committees/mcarthur-river-mine-community-reference-group . Nominations closing date 31Oct21 DITT advised that a draft terms of reference was circulated to Northern Territory Government agencies as per NT EPA recommendation December 2020 and: *Feedback received January 2021 *DITT met with NT EPA April 2021 *DITT worked with DEPWS to finalise draft to satisfaction of NT EPA May 2021 *NT EPA endorsed draft ToR 5Jun21. |
| | | 44 | Within 18 months of date of authorisation of the Overburden Management Project, the Operator must undertake a synthesis of all environmental monitoring programs (Condition 26) that assess impacts of mining activities on the environmental values and beneficial uses of the McArthur River, in accordance with NT EPA's overarching environmental outcome. The revised monitoring programs must: | | Refer to sub conditions | | |
| | | 44.a | use outputs generated for review and synthesis of water monitoring programs, as part of addressing Condition 26; | | - | | Provided for context of condition 44.c. |
| | | 44.b | demonstrate how all monitoring data collected under various monitoring programs and management plans were considered and synthesised (e.g. conceptual site models, trend analysis); | | - | | Provided for context of condition 44.c. |
| | | 44.c | be incorporated in the AMP. | N/A | Not Applicable | | Future item. Within 18 months from 13 Nov2020. DITT has already encouraged the Operator to review this more holistically to identify trends. |

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| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
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| | | 45 - previously 132, changed | Within 18 months of date of authorisation of the Overburden Management Project, the Operator must submit an AMP to the Department: | N/A | Not Applicable | | Future item. Within 18 months from 13Nov2020. Note DITT received a revised AMP 23June2021. Any updates (if triggered by other Departments e.g. DEPWS) are submitted to DITT. |
| | | 45.a | The AMP must include the following key elements: | | Refer to sub conditions | | Provided for context of the subconditions. |
| | | 45.a.i | clear, measurable environmental objectives for all significant environmental risks and potential impacts; | N/A | Not Applicable | | Future item. Within 18 months from 13Nov2020. Note DITT received a revised AMP 23June2021. Any updates (if triggered by other Departments e.g. DEPWS) are submitted to DITT. |
| | | 45.a.ii | measurable performance indicators to show that objectives are on target to be met; | N/A | Not Applicable | | Future item. Within 18 months from 13Nov2020. Note DITT received a revised AMP 23June2021. Any updates (if triggered by other Departments e.g. DEPWS) are submitted to DITT. |
| | | 45.a.iii | pre-determined triggers to warn of potential for performance indicators to be exceeded, as informed by monitoring; | N/A | Not Applicable | | Future item. Within 18 months from 13Nov2020. Note DITT received a revised AMP 23June2021. Any updates (if triggered by other Departments e.g. DEPWS) are submitted to DITT. |
| | | 45.a.iv | realistic and achievable contingency interventions to maintain performance indicators if triggers are consistently exceeded; | N/A | Not Applicable | | Future item. Within 18 months from 13Nov2020. Note DITT received a revised AMP 23June2021. Any updates (if triggered by other Departments e.g. DEPWS) are submitted to DITT. |
| | | 45.a.v | clearly defined management measures/actions that are capable of being implemented in a timely way to meet performance indicators and environmental objectives; | N/A | Not Applicable | | Future item. Within 18 months from 13Nov2020. Note DITT received a revised AMP 23June2021. Any updates (if triggered by other Departments e.g. DEPWS) are submitted to DITT. |
| | | 45.a.vi | monitoring in accordance with relevant Recommendations in NT EPA Assessment Report 86 to determine whether management measures are effective and to inform the need for adjustments to management measures or need for alternatives; | N/A | Not Applicable | | Future item. Within 18 months from 13Nov2020. Note DITT received a revised AMP 23June2021. Any updates (if triggered by other Departments e.g. DEPWS) are submitted to DITT. |
| | | 45.a.vii | a continual feedback system to inform appropriate actions to be initiated when triggered and environmental objectives are always being met; | N/A | Not Applicable | | Future item. Within 18 months from 13Nov2020. Note DITT received a revised AMP 23June2021. Any updates (if triggered by other Departments e.g. DEPWS) are submitted to DITT. |
| | | 45.a.viii | continual development of new management actions as required based on knowledge gained from experience at the site and elsewhere across industry. | N/A | Not Applicable | | Future item. Within 18 months from 13Nov2020. Note DITT received a revised AMP 23June2021. Any updates (if triggered by other Departments e.g. DEPWS) are submitted to DITT. |
| | | 45.b | The AMP must be reviewed by the Independent Monitor or an appropriately qualified, independent third party, and updated with inputs from the CRG (once established under Condition 43); | N/A | Not Applicable | | Future item. Within 18 months from 13Nov2020. Note DITT received a revised AMP 23June2021. Any updates (if triggered by other Departments e.g. DEPWS) are submitted to DITT. |
| | | 45.c | all review findings and CRG input requirements are to be provided to the Department for approval. | N/A | Not Applicable | | Future item. Within 18 months from 13Nov2020. Note DITT received a revised AMP 23June2021. Any updates (if triggered by other Departments e.g. DEPWS) are submitted to DITT. |
| | | 46 - previously 133, changed | Unless agreed otherwise in writing by the Department, the AMP must: | | Refer to sub conditions | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.a | clearly set out the required management objectives and performance indicators; | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.b | provide clarity on the triggers for changes to management actions, and responsibility and evidentiary basis for decision-making; | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.c | establish the timeframe for initiation of certain actions if triggers are exceeded, including decisions to discontinue an activity and clarify responsibility and evidentiary basis for decision-making; | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.d | establish a process for adjusting triggers that includes the regulator; | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.e | establish transparent monitoring, reporting and review requirements; | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |

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| | | 46.f | establish processes to achieve transparency and stakeholder engagement in AMP design and implementation that includes NT EPA, DAWE and CRG; | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.g | set out the mechanism for periodic review by Independent Monitor, which must not exceed a frequency of every three years; | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 46.h | be provided to the Department for re-approval in the event that any material changes are made to the AMP. | N/A | Not Applicable | | Future item. Not triggered as condition 45 not triggered. |
| | | 47 - previously 134 | The Operator must provide written notice to the Minister and to the NT EPA (under clause 14A of the Environmental Assessment Administrative Procedures 1984) where trends indicate performance indicators and environmental objectives will not, or are unlikely to be, met by implementing the AMP. | N/A | Not Applicable | | Future item. This condition is related to the AMP that is not triggered. Trends reporting would be through EMR. The AMP includes Level 1, Level 2 and Level 3 criteria. |
| Independent Tailings Review Board | | | | | | | |
| | | 50 - previously 47, 48 and 49, 50 | The Operator must: | | Refer to sub conditions | | |
| | | 50.a | convene an advisory board (Independent Tailings Review Board or ITRB); | | - | | Included for condition wording related to 50c. Condition not assessed. |
| | | 50.c | provide details of the members of the ITRB panel and meeting frequency to the Department for endorsement by the Department; | 4 | Full Compliance | The ITRB members are Dr. Tamie Weaver, Prof. David Williams and Dr. Bruce Brown, which is consistent with the individuals listed in the Email Operator to Department 30Oct2017 MRM DPIR Meeting with ITRB. The Department advised the Independent Monitor in the 2020 audit that they had endorsed the members of the ITRB before the audit period and there have been no changes in the audit period. | ITRB remains in place. DITT has not seen any specific frequency of meetings. DITT is aware ITRB panel is engaged and their meeting frequency is as required based on specific activities. |
| | | 50.d | together with the ICE, provide a written response to the satisfaction of the Department, in the event that future review of the designs by independent experts require additional matters to be addressed; | N/A | Not Applicable | | Future item. No panel exists. |
| Waste Rock Management | | | | | | | |
| 18 | 18 | | The Operator must only place PAF (HC) and PAF (RE) Waste Rock at the following locations: | | Refer to sub conditions | | |
| 18.b | 18.b | | Central West NOEF (CWNOEF) Alpha and Bravo stages, but only after the Western Perimeter Runoff Dam (WPROD) has been designed, constructed and commissioned in accordance with all requirements of the Minister; | N/A | Not Applicable | Email 2Jul2015 DITT to Operator WESTERN PAF RUNOFF DAM (WPROD). CONDITIONAL APPROVAL | Before the audit period. The Independent Monitor was verbally advised by the DITT that WPROD was completed and operational prior to any waste placement at CWNOEF prior to 2018. |
| | | 51 - previously 16 | From the date of authorisation Non-benign Waste is to be permanently placed consistent with the approved MMP: | | Refer to sub conditions | | |
| | | 51.i | in the event that future review of the designs or as-built structure by independent experts require additional matters to be addressed, the Operator together with the ICE must provide a written response to the satisfaction of the Department; | N/A | Not Applicable | | Future item. No panel exists. |
| | | 51.j | at mine closure, non-benign waste rock is encapsulated and fully contained within an engineered cover system consistent with the Overburden Management Project, or an alternative cover system endorsed by the relevant independent technical panels to the satisfaction of the Department. | N/A | Not Applicable | | Future item. Mine closure not relevant at this point in time. |
| CONSTRUCTION OF THE CWNOEF | | | | | | | |
| | | | ALPHA AND BRAVO STAGES | | | | |
| 19 | 19 | | The Operator must construct, operate and maintain the CWNOEF Alpha and Bravo Stages in accordance with: | | Refer to sub conditions | | |
| 19.a | 19.a | | The version of the document entitled Northern Overburden Emplacement Facility (Central West Phase) Design, Construction & Operations Manual which has been approved by the Minister from time to time, subject to any conditions imposed or changes required by the Minister[9]. | N/A | Not Applicable | Screen shot of manual title page. | No change since last audit period. DITT provided evidence of approval of Northern Overburden Emplacement Facility (Central West Phase) Design, Construction & Operations Manual. Submitted 05Feb2016 and approved August 2016 (outside of the audit period). |

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| 19.b | 19.b | | Concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.l.ii.12. Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ICE must provide a written response that justifies the existing design or proposes an alternate design to the satisfaction of the department. | N/A | Not Applicable | TRM reference MR2015/0076. | No change since last audit period. Alpha and Bravo stages were previously approved and developed outside of the audit period as advised by DITT. Alpha and Bravo stages were part of the 2013-2015 MMP. Refer to TRM reference MR2015/0076. |
| 20 | 20 | | During construction of the CWNOEF Alpha and Bravo stages, | | Refer to sub conditions | | |
| 20.b | 20.b | | the Operator must provide construction reports to the Minister upon request including the following: | N/A | Not Applicable | | DITT advised the Independent Monitor that no request was made. However, it was covered by the ICE construction certification reports that were provided to DITT. |
| 20.b.i | 20.b.i | | QA and QC results and reporting for CCLs; and | N/A | Not Applicable | | DITT advised the Independent Monitor that no request was made. |
| 20.b.ii | 20.b.ii | | results and reporting of testing undertaken to waste rock placement.; | N/A | Not Applicable | | DITT advised the Independent Monitor that no request was made. |
| 20.b.iii | 20.b.iii | | results and reporting of testing undertaken to confirm alluvial materials placed at the CWNOEF would not generate AMD if exposed to water and were geotechnically suitable for the location they were placed. | N/A | Not Applicable | | DITT advised the Independent Monitor that no request was made. |
| CHARLIE STAGE | | | | | | | |
| 22 | 22 | | The Operator is authorised to complete works to prepare and construct CWNOEF Charlie stage in accordance with: | | Refer to sub conditions | | |
| 22.a | 22.a | | the 2013-2015 MMP amendment entitled Mining Management Plan Amendment: North Overburden Emplacement Facility – Central West Charlie Stage Foundation and additional information provided to the Department, as defined in condition 1(j)(ii)(10). The Operator must ensure: | | Refer to sub conditions | Sighted screen shots of various documents for approving the 2019 MMP amendment. | Refer to sub conditions |
| 22.a.ii | 22.a.ii | | the acceptance criteria for all tests, including those outlined in the condition 1.(j)(ii)(10), that are to be undertaken as part of the construction must be provided to the Department prior to commencement of the construction; | N/A | Not Applicable | Email Operator to DITT subject MRM Central West Charlie Stage - Detailed Design Report dated 20Aug2019. (before audit period) Email DITT to Operator subject RE MRM Central West Charlie Stage - Detailed Design Report dated 21Aug2019. (before audit period) Condition 1 (j)(ii)(10) refers to a number of documents that have not been sighted. DITT did receive the detailed design report and respond to Operator accordingly. Operator submission email 22Aug2018 states "The NOEF Central West Charlie Stage 2018 Works Report (provided as Enclosure 2 of the Central West Charlie MMP Amendment) outlines the design and construction specifications that will apply specifically to the construction of the Central West Charlie stage." DITT advised "this condition refers to CW Charlie foundation works. Operator provided this document to Department [sighted cover email .pdf] - refer to MDOC2018/05440." | No change in the audit period. Provided to DITT prior to the audit period. |
| 22.b | 22.b | | concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.l.ii.12, and subject to Condition 18c, ensuring: | | Refer to sub conditions | | Refer to sub conditions |
| 22.b.ii | 22.b.ii | | The detailed designs must be reviewed and endorsed by an ICE without limitation on responsibility and provided to the department prior to commencement of construction; and | N/A | Not Applicable | Email from Operator to DITT dated 20Aug2019 submitting Central Charlie West Detailed Design Report and endorsement of that report by the ICE. | Independent Monitor advised by DITT no changes in the audit period. |
| 22.b.iii | 22.b.iii | | Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ICE must provide a written response that justifies the existing design or proposes an alternate design to the satisfaction of the department. | N/A | Not Applicable | | Advised by DITT that no independent panels have been established at this time. Refer to 50d of 13 Nov2020 authorisation. Words not identical. |

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|---|---|---|---|-------|-------------------------|---|---|
| 24 | 24 | | An Independent Certifying Engineer (ICE) must warrant and accept both the design and construction works, without limitation on responsibility: | | Refer to sub conditions | | |
| 24.c | 24.c | | any material changes to the amendment must be approved by the ICE and the Department notified as soon as practicable; | N/A | Not Applicable | Email from Operator to DITT dated 20Aug2019 submitting Central Charlie West Detailed Design Report and endorsement of that report by the ICE. (before the audit period). | Design submitted and acknowledged by DITT prior to the audit period. DITT refer to the construction reports in general but DITT has not been notified of any material changes in the audit period. |
| CONSTRUCTION OF THE CENOEF | | | | | | | |
| 25 | 25 | | The Operator must construct, operate and maintain the CENOEF in accordance with: | | Refer to sub conditions | | |
| 25.a | 25.a | | Concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12, and subject to Condition 18d, ensuring: | | Refer to sub conditions | | |
| 25.a.iii | 25.a.iii | | The detailed designs must be reviewed and endorsed by an ICE without limitation on responsibility and provided to the department prior to commencement of construction; and | N/A | Not Applicable | | DITT advised the Independent Monitor that no works were conducted by the Operator prior to 13Nov2020. This condition superseded by new Authorisation on 13Nov2020. |
| 25.a.iv | 25.a.iv | | Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ICE must provide a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department. | N/A | Not Applicable | | DITT advised the Independent Monitor that no works were conducted by the Operator prior to 13Nov2020. This condition superseded by new Authorisation on 13Nov2020. |
| Remaining Waste Rock Management Facilities | | | | | | | |
| | | 55 | From the date of authorisation of the Overburden Management Project, temporary placement of non-benign waste is authorised for the following: | | Refer to sub conditions | | Provided for context for subconditions. No DITT action. |
| | | 55.a | EOEF (except for PAF(RE)); | | - | | Provided for context for subcondition. No DITT action. DITT not aware of waste placement currently at EOEF. Currently foundations being constructed. |
| | | 55.b | stockpiles on NOEF, SOEF and WOEF; | | - | | Provided for context for subcondition. No DITT action. |
| | | 55.c | ROM Pad; | | - | | Provided for context for subcondition. No DITT action. |
| | | 55.d | any other location approved by Department in writing. | N/A | Not Applicable | | Noted correspondence regarding approval by DITT on Nov2019 and Jan2020 for temporary storage. Operator required to notify DITT once temporary storage at these locations is complete. DITT advised no request for additional storage locations in the audit period. |
| Water Management and Storage | | | | | | | |
| | | 59 - previously 35 changed | Until the AMP (including Environmental Management Plans and sub-plans) is approved by the Department in writing, the Operator must prepare, review and include the following for each MMP and where appropriate each MMP amendment, a Water Management Plan which includes: | N/A | Not Applicable | | AMP approved by DITT 13Nov2020 as a component of the January 2020 MMP. DITT advised that this condition is therefore redundant. |
| Water Transfer and Discharge | | | | | | | |
| | | 68 | The Operator must: | | Refer to sub conditions | | |
| | | 68.e - previously 38 | by 30 June 2020, characterise total loads of mine-derived contaminants from all source inputs for the 2017-2018 period consistent with Condition 16.b), unless otherwise agreed in writing by the Department. | 4 | Full Compliance | Email DITT to Operator subject RE: MRM Variation of Authorisation Condition 38(c); 2017-2018 Mine-Derived Loads dated 15May2020. Email 15 May 2020 DPIR acknowledges receipt of the report, as required under Condition 38c of the Authorisation (referring to old Authorisation). | Operator provided a loads report on 15May2020. EMR included this report. DITT acknowledged receipt of the report, as required under Condition 38c of the 15Aug2019 Authorisation. |
| | | 69 - previously 38 | The Operator must in relation to the WMD release point to Little Barney Creek undertake: | | Refer to sub conditions | | |
| | | 69.b | remediation in the event of unacceptable erosion occurring at the Carpentaria Highway culvert system to the satisfaction of the Department of Infrastructure, Planning and Logistics and the Department; | N/A | Not Applicable | | DITT advised that there was no unacceptable erosion during the audit period. |

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| | | 69.h | Measure total loads of analytes (including lead and zinc) from all controlled discharge activities entering McArthur River at location SW06 or an alternate location as agreed by the Department; | N/A | Not Applicable | | DITT advised there were no alternative locations agreed by DITT in the audit period. |
| | | 71 | At the conclusion of the trials in Condition 70, the Operator must apply in writing to the Department for approval of full-scale implementation. | N/A | Not Applicable | | Future item. DITT advised that the Operator has not applied in writing to DITT for approval of full-scale implementation. |
| 45 | 45 | | Construction reports including QA and QC data endorsed by the Independent Certifying Engineer (ICE) must be provided to the Department prior to commencement of operation within 30 days of construction being completed | 3 | Part Compliance (High) | <p>Email DITT to Operator subject MRM - Commissioning of EPROD dated 20Mar 2020. Eastern Perimeter Runoff Dam Commissioning Plan, March 2020</p> <p>DITT approved early operation of EPROD based on correspondence listed above stating "Given that ICE has identified the pit can be dewatered and the water used as part of the commissioning tests, it is accepted that the intent of Condition 45 of the Authorisation for operational use EPROD will be achieved."</p> <p>Construction reports including QA and QC data has not been received by DITT. The Eastern Perimeter Runoff Dam Commissioning Plan stated "The following documentation will need to be completed as soon as possible and prior to Stage 2 commissioning: [...] EPROD Construction Report and Drawings, including all as-constructed QA/QC documentation."</p> <p>DITT advised "MRM issued approval for EPROD early commencement. Department has not been notified if EPROD construction, including commissioning, is completed or it is being used. If it is, then construction reports were not provided."</p> | <p>This condition is identical to 75.k in the 13Nov20 Authorisation except that it is not a subcondition related to dewatering of the PRODs and therefore is included in this condition.</p> <p>Providing early commencement of operation should have been conditional on provision of construction reports including QA and QC data endorsed by the ICE for the works that were completed prior to commencement of operation.</p> <p>OFI: Request confirmation from the Operator that EPROD construction is completed and if so, request the construction reports including QA and QC data endorsed by the ICE.</p> |
| Perimeter Run-Off Dams – SPROD, SEPROD, WPROD and EPROD | | | | | | | |
| | | 75 - previously 44 for EPROD | The Operator must construct EPROD and WPROD in accordance with the following regime in the event groundwater dewatering is necessary: | N/A | Not Applicable | | WPROD constructed in 2016 before the audit period and EPROD constructed during the audit period. DITT not aware of groundwater dewatering occurring. |
| | | 75.i - previously 44 for EPROD | field water quality parameters, flow meter volumes and laboratory analysis must be submitted to Department on a monthly basis; | N/A | Not Applicable | | |
| | | 75.k - previously 45 for EPROD | Construction reports including QA and QC data endorsed by the ICE must be provided to the Department prior to commencement of operation within 30 days of construction being completed. | N/A | Not Applicable | <p>WPROD was completed in July 2017 (before the audit period commenced) and Independent Monitor sighted a completion report dated 14Jul2017.</p> <p>No dewatering occurred and therefore no EPROD construction report was required under this subcondition.</p> | <p>DITT advised that they do not have a construction report for the EPROD.</p> <p>DITT advised the intent of this subcondition is for the Operator to provide construction reports irrelevant of whether dewatering occurred.</p> <p>OBS: Amend the condition so that provision of construction reports is required irrelevant of whether dewatering has occurred or not.</p> |
| Tailings Storage Facility | | | | | | | |
| 46 | 46 | | An Independent Certifying Engineer (ICE) must oversee and be responsible for any works undertaken at the TSF: | | Refer to sub conditions | | |

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| 46.d | 46.d | | construction reports including QA and QC data must be provided to the Department within 30 days of construction being completed. | 3 | Part Compliance (High) | Email DITT to Operator Subject: RE: FW: MRM TSF Cell 1 Stage 4 Raise Construction Report dated 9Nov2020. Email DITT to Operator Subject FW: MRM TSF Cell 2 Stage 5 Raise Construction Report dated 26Aug2020. Email from Operator to DITT FW: MRM TSF Cell 1 Stage 4 Raise Construction Report dated 21Oct2020. Email Operator to DITT Subject MRM TSF Cell 2 Stage 5 Raise Construction Report dated 24Aug2020. MRM TSF Quarterly Report March 2020 – May 2020 Email Operator to DITT subject MRM TSF Quarterly Report December 2019 to February 2020 dated 12 June 2020. The completion of the cell 1 stage 4 construction is stated as January 2020 in the MRM TSF Quarterly Report March 2020 – May 2020. No evidence was provided to indicate that DITT raised with the Operator that the construction report was required or identified it was overdue. | DITT received Cell 2 Stage 5 and Cell 1 Stage 4 construction reports. OFI: Monitor construction progress to identify upcoming completion so that the anticipated date of receipt of construction reports is known in advance and to prompt follow up action if anticipated due date is passed. |
| 52 | 52 | | The Operator is authorised to complete lift Cell 1 embankment raise works as follows: | | Refer to sub conditions | | |
| 52.d | 52.d | | At completion of the construction works the ICE must approve an “as-constructed” construction report and updates to the TSF Operations, Maintenance and Surveillance Manual and TARPs. The construction report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied to the Department; and | 3 | Part Compliance (High) | Email DITT to Operator Subject: RE: FW: MRM TSF Cell 1 Stage 4 Raise Construction Report dated 9Nov2020. Email from Operator to DITT FW: MRM TSF Cell 1 Stage 4 Raise Construction Report dated 21Oct2020. While the Operator advised that construction was complete in January 2020, the as-constructed report was submitted 21Oct20, in the audit period. No evidence was provided to indicate that DITT raised with the Operator that the construction report was required or identified it was overdue. | OFI: Refer to condition 46.d. |
| 56 | 56 | | The Operator is authorised to complete works to raise the embankment of the TSF in accordance with the document entitled McArthur River Mining Pty Ltd - Cell 2 TSF Stage 5 Raise to RL 10059 - Detailed Design Report – May 2018 (GHD Report), ensuring: | | Refer to sub conditions | | |
| 56.a | 56.a | | Construction reports including QA and QC data endorsed by the Independent Certifying Engineer (ICE) must be provided to the Department prior to the deposition of tailings within the Cell 2 Raise 5 storage capacity and within 30 days of construction being completed. | 3 | Part Compliance (High) | Email DITT to Operator Subject FW: MRM TSF Cell 2 Stage 5 Raise Construction Report dated 26Aug2020. Email Operator to DITT Subject MRM TSF Cell 2 Stage 5 Raise Construction Report dated 24Aug2020. Sighted MRM Cell 2 TSF Stage 5 Raise to RL 10059m. Sighted email dated 24Aug2020. Construction was completed in 2018 however the as constructed report was not delivered to DITT until 24Aug20. No evidence was provided to indicate that DITT raised with the Operator that the construction report was required or identified it was overdue. | OFI: Refer to condition 46.d. |
| 57 | 57 | | The operator is authorised to construct, operate and maintain Cell 2 Stage 6 embankment lift in accordance with: | | Refer to sub conditions | | |
| 57.a.ii | 57.a.ii | | The detailed designs must be reviewed and endorsed by the ITRB provided to the department prior to commencement of construction; and | N/A | Not Applicable | | Before the audit period. Approved by the ITRB and part of the MMP amendment approval 15Aug2019. |
| 57.a.iii | 57.a.iii | | Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ITRB must provide and implement a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department. | N/A | Not Applicable | | No panels are established. No future reviews by independent experts occurred. Condition 50 in new Authorisation similar. Condition 50 requires the ITRB and ICE but for this condition, ITRB only. |

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| 57.b | 57.b | | At completion of the construction works the ICE must approve an "as constructed" construction report and updates to the TSF Operations, Maintenance and Surveillance Manual and TARPs. The construction report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied to the Department prior to the deposition of tailings. | N/A | Not Applicable | | DITT advised the Independent Monitor that Cell 2 Stage 6 embankment lift is not complete. |
| | | 76 | From the date of authorisation of the Overburden Management Project, tailings must be managed in accordance with the following: | | Refer to sub conditions | | |
| | | 76.b | any construction of tailings lift, as approved in Condition 79, be reviewed and endorsed by independent oversight requirements in Condition 48 and 50 or an alternative independent qualified and experienced third party approved by the Department in writing; | N/A | Not Applicable | | ITRB are involved in the review of these plans. DITT has not approved any alternative independent qualified and experienced third party. The TSF design is ITRB and as built is the ICE. NOEF design is the ICE and as built is the ICE. |
| | | 76.e | in the event that future review of the designs or as-built structure by independent experts require additional matters to be addressed, the Operator together with the ICE must provide a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department. | N/A | Not Applicable | | Future item - no panels are established. |
| TSF Management | | | | | | | |
| | | 80 - previously 55 | The Operator must provide quarterly to the Minister a written status report on the seepage and management of seepage from the TSF, including the following: | 4 | Full Compliance | <p>Email DITT to Operator subject RE MRM TSF Quarterly Report September to November 2020 dated 23Feb2021.</p> <p>Email DITT to Operator Subject: DITT Acceptance - TSF Quarterly Reports - Q3-Q4 2019/2020, Q1-Q3 2020 dated 25Feb2021</p> <p>Letter DITT to Operator Re: McArthur River Mine Quarterly TSF Reports dated 23Feb2021</p> <p>Email Operator to DITT subject MRM TSF Quarterly Report December 2019 to February 2020 dated 12Jun20.</p> <p>Email Operator to DITT subject MRM TSF Quarterly Report March 2021 to May 2021 dated 6Aug21 (outside audit period).</p> <p>McArthur River Mining Pty Ltd 2020 Comprehensive Surveillance Report TSF 1, TSF 2 and Water Management Dam dated 31 March 2021 (site work conducted November 2020) (MDOC2021/03533 2020)</p> <p>The TSF Quarterly Report December 2019 to February 2020 was not submitted to DITT until 12Jun20. No evidence was provided to indicate that DITT had followed up with the Operator on the timing for submission of this report.</p> <p>DITT has acknowledged receipt of quarterly reports. Progressive review of quarterly reports by DITT does not appear to have occurred. The evidence indicates that four reports were reviewed and actions advised to the Operator at once on 23Feb2021.</p> <p>DITT advised that four reports were received in the audit period and DITT acknowledges receipt and then subsequently provides any actions (only the first two from the audit period have had the follow up with actions sent at the time of interview in July 2021).</p> | <p>Letter DITT to Operator Re: McArthur River Mine Quarterly TSF Reports 23Feb2021 stated related to the Dec2019 to Feb2020, Mar2020 to May2020, Jun2020 to Aug2020 and Sep2020 to Nov2020 TSF Quarterly reports "The Department's review of these reports indicates the information provided on the water levels, seepage and structural integrity matters on the TSF satisfies Condition 80 of the VOA. [...] The last TSF quarterly report (February 2021) indicated the scheduled annual TSF audit was completed in November 2020. DITT requests a copy of this audit report and future audit reports to be submitted, when available with the ongoing quarterly TSF report submissions."</p> <p>The 2020 Comprehensive Surveillance Report TSF 1, TSF 2 and Water Management Dam dated 31 March 2021 was provided to DITT.</p> <p>In the event that the Operator has not provided all the data or it indicated potential risks there is a need for DITT to have identified and followed up on such omissions or potential risks in a timely manner.</p> <p>DITT advised that their process is: **on receipt of all TSF Quarterly Reports the responsible Mining Officer reviews two critical sections of the report pertaining to: 1. Structural deformation and 2. Seepage and water quality assessment *in the event an anomaly is identified in a TSF Quarterly Report, the matter would be raised by the Department with MRM at the next meeting of the Technical Working Group and the appropriate course of action agreed, minuted and followed-up at subsequent meetings as appropriate *no anomalies have been reported during the period under review, and consistent with risk-based and outcomes focused regulation, no further action has been taken."</p> |

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| | | 80.a | water levels in the TSF; | 4 | Full Compliance | <p>MRM TSF Quarterly Report - December 2020 to February 2021 MRM TSF Quarterly Report - March 20 to May 20_Rev 1 MRM TSF Quarterly Report - June 20 to August 20_FINAL MRM TSF Quarterly Report - September to November 2020 Email Operator to DITT subject FW: MRM TSF Quarterly Report December 2020 to February 2021 dated 19Apr2021. Email Operator to DITT subject MRM TSF Quarterly Report June to August 2020 dated 26Nov2020 Email Operator to DITT subject RE MRM TSF Quarterly Report September to November 2020 dated 22Feb2021 Email DITT to Operator subject RE MRM TSF Quarterly Report September to November 2020 dated 23Feb2021 Email Operator to DITT MRM TSF Quarterly Report March 2021 to May 2021 dated 6Aug2021 (submitted outside the audit period but covers part of the audit period)</p> <p>MRM Tailings Storage Facility Quarterly Report September 2020 – November 2020 checked by the Independent Monitor and compliance is evident based on average levels in the TSF in Table 3-1. There are also graphs of water levels in the decant ponds in section 3.2.1.</p> | |
| | | 80.b | all monitoring data associated with the seepage (including geotechnical and environmental monitoring); | 4 | Full Compliance | <p>MRM TSMRM TSF Quarterly Report - December 2020 to February 2021 MRM TSF Quarterly Report - March 20 to May 20_Rev 1 MRM TSF Quarterly Report - June 20 to August 20_FINAL MRM TSF Quarterly Report - September to November 2020F</p> <p>MRM TSF Quarterly Report - September to November 2020F "Water quality results during the reporting period remained within the range of the previous 12 months of data, with no unexpected results detected. Water quality of the Water Management Dam remained of suitable quality for discharge in accordance with Waste Discharge Licence 174-11."</p> <p>MRM TSF Quarterly Report - September to November 2020F Section 3.3 includes water quality data.</p> | DITT advised that seepage is included in the TSF quarterly reports submitted by the Operator. |
| | | 80.c | flow rate of each seep; | 4 | Full Compliance | <p>MRM TSMRM TSF Quarterly Report - December 2020 to February 2021 MRM TSF Quarterly Report - March 20 to May 20_Rev 1 MRM TSF Quarterly Report - June 20 to August 20_FINAL MRM TSF Quarterly Report - September to November 2020F</p> <p>MRM Tailings Storage Facility Quarterly Report September 2020 – November 2020 checked by the Independent Monitor and compliance is evident based on seepage management Section 3.2.2 that includes seepage flow rates.</p> | |
| | | 80.d | all actions undertaken during the quarter associated with the seepage and management of Tailings; | 4 | Full Compliance | <p>MRM TSMRM TSF Quarterly Report - December 2020 to February 2021 MRM TSF Quarterly Report - March 20 to May 20_Rev 1 MRM TSF Quarterly Report - June 20 to August 20_FINAL MRM TSF Quarterly Report - September to November 2020F</p> <p>MRM TSF Quarterly Report - September to November 2020F includes Attachment B - TSF Recommendation Instruction and Action Register that meets the requirements of this condition.</p> | |

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| | | 80.e | all actions planned for the next quarter associated with seepage and management of Tailings.[1] | 4 | Full Compliance | MRM TSMRM TSF Quarterly Report - December 2020 to February 2021 MRM TSF Quarterly Report - March 20 to May 20_Rev 1 MRM TSF Quarterly Report - June 20 to August 20_FINAL MRM TSF Quarterly Report - September to November 2020F MRM TSF Quarterly Report - September to November 2020F includes Attachment B - TSF Recommendation Instruction and Action Register that meets the requirements of this condition. MRM TSF Quarterly Report - September to November 2020F includes TABLE 3-3. ONGOING OPERATIONAL ACTIONS 2020. | |
| | 58 | | The operator is authorised to construct, but not operate Cell 1 Stage 5 embankment lift in accordance with: | | Refer to sub conditions | | These conditions were added in 10Aug2020 Authorisation. |
| | 58.a | | concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2020, Version 1.0 as defined in Condition 1.(ii)(13), ensuring: | | Refer to sub conditions | | Covered in condition 77 as raise 5. Included here for context. |
| | 58.a.ii | | The detailed designs must be reviewed and endorsed by the ITRB and provided to the Department prior to commencement of construction; and | N/A | Not Applicable | | DITT advised that detailed designs have not been provided to DITT. DITT not aware of construction commencing. |
| | 58.a.iii | | Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ITRB must provide and implement a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department. | N/A | Not Applicable | | This condition is only relevant until 13Nov2020. No panels are established. Similar to conditions 50 and 76 of the 13Nov2020 Authorisation. However, this condition requires action by the ITRB while the others are actions for the ICE. There were changes made to the Cell 2 stage 7 lift in the audit period, which are audited for the period after 13Nov2020 so not included in this condition. |
| | 58.b | | at completion of the construction works the ICE must approve an "as constructed" construction report and updates to the TSF Operations, Maintenance and Surveillance Manual and TARPs. The construction report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied to the Department. | N/A | Not Applicable | | DITT advised the Independent Monitor that Cell 1 Stage 5 embankment lift is not complete. |
| 60 | 61 | | All documentation relating to the geochemical assessment and alluvial investigation is to be made available to the Department on request. | N/A | Not Applicable | EMR 2019 - 2020 Appendix A 2019-2020 Drilling Register and Appendix V 2019 Hydrogeological Drilling and Field Campaign. | DITT advised the Independent Monitor that no request was made. However, noted that Appendix V 2019 Hydrogeological Drilling and Field Campaign of the 2020 EMR was provided in the audit period. |
| | | 83 - previously 60 | Characterisation data from the drilling must be kept and available to the Minister on request and reported in the Operator's EMR. | N/A | Not Applicable | | DITT advised there was no request for data. |
| | | 84 | All documentation relating to the investigations undertaken is to be made available to the Department on request. | N/A | Not Applicable | | DITT advised there was no request for data. |
| | | 85 | On completion of the investigation the disturbances are to be rehabilitated in accordance with the approved MMP and the basis for the proposed adjustment of total security adjustments required under Condition 11, are provided in the annual Unplanned Closure Plan report to the satisfaction of the Department. | N/A | Not Applicable | | DITT noted they had not received any rehabilitation report to satisfy this Condition. |
| Exploration | | | | | | | |
| | | 86 - previously 11 | The Operator must ensure that: | | Refer to sub conditions | | |
| | | 86.d | a rehabilitation report including details regarding the status of disturbance rehabilitated drill holes and the basis for the proposed adjustment of total security in accordance with Conditions 10, 11 and 12, to the satisfaction of the Department. | N/A | Not Applicable | | Department noted they had not received any rehabilitation report to satisfy this Condition. |

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| Non-mineral Waste Management | | | | | | | |
| 12 | 12 | | The Operator is authorised to complete works to prepare and construct a Centralised Waste Facility (CWF) for management of general, contaminated and putrescible wastes, in accordance with: | | Refer to sub conditions | | |
| 12.a | 12.a | | concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12, ensuring: | | Refer to sub conditions | | Future item. DITT advised that no detailed designs were provided to DITT in the audit period and construction has not commenced. |
| 12.a.iii | 12.a.iii | | The detailed designs must be reviewed and endorsed by an Independent Certifying Engineer (ICE) without limitation on responsibility and provided to the department prior to commencement of construction. | N/A | Not Applicable | | Future item. DITT advised that no detailed designs were provided to DITT in the audit period and construction has not commenced. |
| 13 | 13 | | An ICE must warrant and accept both the design and construction works, without limitation on responsibility: | | Refer to sub conditions | | Future item. DITT advised that no detailed designs were provided to DITT in the audit period and construction has not commenced. |
| 13.e | 13.e | | at completion of the construction works the ICE must approve an "as-constructed" construction report that is to be submitted to the Department. The report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied; and | N/A | Not Applicable | | Future item. DITT advised that no detailed designs were provided to DITT in the audit period and construction has not commenced. |
| 13.f | 13.f | | the existing waste facilities must be decommissioned and rehabilitated, but only after an approval of rehabilitation plan by the Department. The rehabilitation plan must include details on proposed adjustment of total security as a result of the works. | N/A | Not Applicable | | Future item. DITT advised that no detailed designs were provided to DITT in the audit period and construction has not commenced. |
| | | 88 | The Operator must ensure the non-mineral waste facility, landfill or equivalent previously in use is rehabilitated following approval by the Department of a rehabilitation plan. | N/A | Not Applicable | | Future item. The old landfill is still in use. |
| Bing Bong Loading Facility | | | | | | | |
| | | 91 | Dredging activities at the Bing Bong Port Facility are authorised, subject to: | | Refer to sub conditions | | |
| | | 91.a | submission to the department of a Dredging and Dredge Spoil Management Plan; | N/A | Not Applicable | | DITT advised that they have not been provided with a dredge spoil plan. |
| | | 91.b | approval of the Plan by the Department prior to commencement of dredging. | N/A | Not Applicable | | DITT is not aware of any dredging by the Operator. |
| Environmental Monitoring and Management | | | | | | | |
| 61 | 62 | | The Operator must collect and maintain the following to the satisfaction of the Minister: | | Refer to sub conditions | | |
| 61.a | 62.a | | all environmental monitoring data which is contemplated in this document or the MMP or reasonably required for the proper implementation of this document or the MMP; and | 4 | Full Compliance | Under the Act, the Operator is required to provide the necessary financial and human resources to comply with the MMPs. DITT is satisfied that data has been provided, where required. | |
| 61.b | 62.b | | any other environmental monitoring records and data prepared or obtained by or in the possession of the Operator at any time in connection with the Mine (including for example, monitoring records or data submitted to the Commonwealth government). | N/A | Not Applicable | | DITT has not requested any additional data (e.g. that may be collected under other legislation). |
| 62 | 63 | | The Operator must ensure data contemplated by condition 58 is provided to a mining officer upon request and will not be destroyed without the written permission of the Minister. | N/A | Not Applicable | | Independent Monitor advised that DITT has not made any requests for data. |
| 69 | 70 | | For the purposes of managing dust, to the satisfaction of the Minister: | | Refer to sub conditions | | |

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| 69.a | 70.a | | the Operator must employ dust mitigation and monitoring measures at the Mine and in the course of all mining activities which generate dust, to minimise dust emission and impact on the Receiving Environment; | 4 | Full Compliance | Letter DPIR to Operator Re: McArthur River Mine Operation Performance Reports dated 30Jan2020 (before audit period) EMR 2019 -2020 DITT advised they had let Operator know that before the 2020 EMR no holistic or trends assessment of plans had been seen in the EMR. DITT observed commencement of this in the 2020 EMR. The holistic assessment undertaken (refer 2020 EMR) noted via dust, water quality and fluvial assessments that there was an issue near the bridge. Refer DITT letters responding to 2019 and 2020 EMRs. Letter DPIR to Operator Re: McArthur River Mine Operation Performance Reports dated 30Jan2020 (before audit period) stated "MRM has developed an extensive environmental monitoring program comprising soil, dust, sediment, biological, groundwater and surface water, Although the program enables assessment of the environmental impact to a particular medium, the information presented suggests that the results of the individual monitoring plans are assessed independently. As a consequence, the OPR does not provide a holistic assessment that incorporates and ties the results of all monitoring programs to clearly demonstrate an assessment of the cumulative environmental impacts of mining activities and the overall performance of MRM in managing the impacts." | DITT receives this information in the EMR. |
| 69.b | 70.d | | If dust is entering the Receiving Environment resulting in or having the potential to cause environmental harm the Operator must undertake works or change its systems or practices to reduce dust to levels which no longer cause potential or actual environmental harm; and | 4 | Full Compliance | EMR 2019 - 2020 | EMR 2019-2020 indicates dust is contained and not entering the receiving environment. DITT advised the Independent Monitor that Operator is aware of dust issues from milling operations and haul trucks when crossing Barney Bridge. Operator looking for engineered system for milling operations. |
| 69.c | 70.c | | Any dust suppressant must be suitable for the location where it is to be used. | 4 | Full Compliance | EMR 2019 -2020 | Dust suppression from water carts only occurs within the water management system. |
| Adaptive Management | | | | | | | |
| | | 93 | Within 12 months of the date of authorisation of the Overburden Management Project, the Operator must submit a revised AMP as required under Conditions 45. | N/A | Not Applicable | | Future item. Dated 12 months from 13Nov2020 so outside the audit period. DITT considers the revised AMP submitted to DITT through the WDL fulfils this condition. However DITT is yet to review this AMP. OBS: Condition 45 has an 18 month timeframe from 13Nov20 for the AMP revision. There appears to be an inconsistency in the timeframe as condition 93 has a 12 month timeframe. |
| | | 94 | The revised AMP must: | | Refer to sub conditions | | |
| | | 94.a | address the comments from the Independent Monitor or independent third party review of the draft AMP and ensuring compliance with Condition 45; | N/A | Not Applicable | | DITT is yet to review this AMP. |
| | | 94.b | be consistent with the AMP required under the Waste Management and Pollution Control Act 1998 and Environment Protection and Biodiversity Conservation Act 1999; | N/A | Not Applicable | | Note Water Act rather than Waste Management and Pollution Control Act 1998. Note this was submitted to DEPWS. |
| | | 94.c | be reviewed by a Department approved independent third-party at the discretion of the Minister; | N/A | Not Applicable | | DITT is yet to review this AMP. |
| | | 94.d | be approved by the Minister; | N/A | Not Applicable | | DITT is yet to review this AMP. |
| | | 94.e | once approved, be implemented in full. | N/A | Not Applicable | | DITT is yet to review this AMP. |
| | | 95 | Any material changes to the AMP required by Condition 94 must be re-approved by the Minister. | N/A | Not Applicable | | Future item. AMP not required until 13 Nov2021. |
| Mine Closure | | | | | | | |
| | | 96 | From the date of authorisation of the Overburden Management Project, the Operator must submit an updated Mine Closure Plan with each MMP that builds upon the closure concepts defined in the Overburden Management Project. | N/A | Not Applicable | | Future item. No MMPs in the audit period. |
| | | 97 | The Mine Closure Plan required under Condition 96 must: | | Refer to sub conditions | | |

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| | | 97.a | detail how key mine domains will be rehabilitated to achieve the Overburden Management Project closure objectives; | N/A | Not Applicable | | Future item. No MMPs in the audit period so the trigger for the Mine Closure Plan has not occurred. |
| | | 97.b | address outcomes of the reviews by independent technical and closure panels in accordance with Condition 21 with respect to mine closure; | N/A | Not Applicable | | Future item. No MMPs in the audit period so the trigger for the Mine Closure Plan has not occurred. |
| | | 97.c | incorporate relevant outcomes from rehabilitation trials defined in Condition 89. | N/A | Not Applicable | | Future item. No MMPs in the audit period so the trigger for the Mine Closure Plan has not occurred. |
| | | 98 | Five years prior to the planned closure of the mine, the Operator must: | | Refer to sub conditions | | |
| | | 98.a | finalise the Mine Closure Plan required under Condition 96; | | - | | Included for context of condition 98.b and c. |
| | | 98.b | submit to the Department the plan for approval by the Minister; | N/A | Not Applicable | | Future item. Mine closure more than 5 years away. |
| | | 98.c | following approval, the Mine Closure Plan must be implemented by the Operator in full. | N/A | Not Applicable | | Future item. Mine closure more than 5 years away. |
| Unplanned Mine Closure | | | | | | | |
| | | 99 | From the date of authorisation of the Overburden Management Project, the Operator must annually submit to the Department an Unplanned Mine Closure Plan on or before 31 August, starting 2021, to the Department, which is accompanied by a related security estimate. | 4 | Full Compliance | Email from Operator to DITT dated 16Apr21 MRM 2021 Unplanned Closure Plan and Independent Security Assessment Enclosure 1 - MRM Unplanned Closure Plan 2021_FINAL_April Enclosure 2 - MRM Security Calculation_2021_210416_Final Enclosure 4 - Phronis Independent Security Audit Report 2021 DITT Memo Vary Authorisation 0059 MRM Pty. Ltd. - MRM dated 18Jun2021 (outside audit period) DITT Memo Vary Authorisation 0059 MRM Pty. Ltd. - MRM dated 18Jun2021 (outside audit period) stated "RECOMMENDATION It is recommended that you: a) Approve MRM's 2021 UCP, as required under Condition 11 of Authorisation 0059. b) Approve the total security be set at \$405,116,668 under Section 43A of the Act. c) Subject to (a) and (b), vary Authorisation 0059 under Section 38(2) of the Act by signing the attached Variation of Authorisation 0059. d) Sign the attached letter to the Operator. e) Subject to (a), (b), and (c) approve an update to the Department's website to reflect the adjusted security approved as part of this assessment." | Unplanned Mine Closure Plan was submitted early for 2021 activities. Unplanned Closure Plan submitted annually to DITT by the Operator with revised security included. Independent Monitor confirmed email evidence of submission via email 16Apr21 stated "In accordance with Condition 11 of Variation of Authorisation 0059, dated 13 November 2020, please find the attached cover letter requesting a revision to McArthur River Mining Pty Ltd's (MRM) security held by the Department of Industry, Tourism and Trade (DITT)." |
| (13Nov2020) SCHEDULE C - INDEPENDENT MONITORING ASSESSMENT | | | | | | | |
| | | Schedule C - 1 | The purpose of the McArthur River Mine – Independent Monitoring Assessment Conditions” is to establish and set out the operational requirements for an independent monitoring assessment of the environmental performance of the Mine. | | - | | Note for context |
| | | Schedule C - 2 | These Conditions may be cited as the “McArthur River Mine – Independent Monitoring Assessment Conditions”. | | - | | Note for context |
| | | Schedule C - 3 | The purpose of these Conditions is to establish and set out the operational requirements for an independent monitoring assessment of the environmental performance of the Mine. | | - | | Duplicate of Schedule C, item 1. |
| | | Schedule C - 4 - previously 73 | The Department will engage an Independent Monitor to undertake the independent monitoring assessment. | 4 | Full Compliance | Notification of Independent Monitor services acceptance letter 11Dec2019 DITT to Advisian. | |
| | | Schedule C - 5 - previously 74 | The Operator and the Department acknowledge that this independent monitoring assessment is in addition to their respective obligations and statutory responsibilities in relation to the Mine. | 4 | Full Compliance | The Independent Monitor was advised of this verbal understanding from DITT that this condition is acknowledged. | |
| | | Schedule C - 6 - previously 75 | The Independent Monitor will: | | Refer to sub conditions | | No Department action. Included for context of subconditions. |
| | | Schedule C - 6.a | monitor the environmental performance of the Mine by reviewing: | | - | | No Department action. Included for context of subconditions. |
| | | Schedule C - 6.a.i | environmental assessments and monitoring activities undertaken by the Operator; and | | - | | No Department action. Included for context of subconditions. |

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| | | Schedule C - 6.a.ii | environmental assessments and audits undertaken by the Department; and | N/A | Not Applicable | Site Inspection Report - MRM - MRM Pty Ltd - Authorisation 0059 Site visit conducted 2Dec2020 dated 3Feb2021 (MDOC2021 00466 Site Inspection Report - Dec2020 - 0059) DITT has not specifically conducted environmental assessments or audits on environmental performance of the Mine. The EMR was submitted 31Aug20. There was a letter of response from DITT to the Operator dated 13Jul21 Re: McArthur River Mining Pty Ltd – McArthur River Mine 2020 EMR. | DITT conducts numerous regulatory activities but they are not specifically environmental assessments or formal audits. Site inspections and EMR review by DITT have occurred. Technical Working Group meetings convened on a fortnightly basis with agenda including operational updates, CRG establishment and other matters of relevance. DITT advised that a site visit also occurred on 20May21 (outside of audit period) and they "aim to visit site twice yearly, more frequently if required due to operational/regulatory requirements". OBS: Prepare an annual schedule of DITT assessments and audits to be undertaken and describe corresponding reports/outputs. |
| | | Schedule C - 6.b | report to the Operator and the Department any urgent issues requiring investigation and reporting. | N/A | Not Applicable | | Note: no urgent issues have been identified by the Independent Monitor as part of Scope Tasks 1 to 7 to date. |
| | | 7 - previously 76 | The Independent Monitor will not review: | | - | | No Department action. Included for completeness. |
| | | 7.a | Mine safety; or | | - | | No Department action. Included for completeness. |
| | | 7.b | social issues arising from the operation of the Mine in the McArthur River Region. | | - | | No Department action. Included for completeness. |
| | | Schedule C - 8 - previously 77 | The Department will engage an Independent Monitor in accordance with its procurement processes. | N/A | Not Applicable | Probity Report (Merit Chartered Accountants) dated 22/11/2019 titled M2019 0076~0035 Final Probity Report - DPIR Independent Monitoring | Engagement of the Independent Monitor occurred before the audit period. Advisian received PO from NT government. Tender process was undertaken in compliance with NTG procurement guidelines. Independent probity advisor (Merit Chartered Accountants) provided a report indicating compliance. The Probity Report scope was "This engagement focussed on whether the probity and accountability of this process was consistent with the relevant requirements of the Northern Territory Government policies, the Tender Assessment Plan and Probity Plan, and practice guidelines for ensuring ethical behaviour and fair dealing in this assessment process." Related to the process to select a successful tenderer the reports states there was no indication that the process "has been undertaken other than with due probity as per the Tender Assessment Plan and Probity Plan." |
| | | Schedule C - 9 - previously 78 | The Independent Monitor may be (in order of preference): a. an environmental or mining agency in another jurisdiction in Australia; or b. a university having the necessary expertise; or c. an environmental consultant have the necessary expertise, relevant experience and the necessary resources. | N/A | Not Applicable | | Note: Independent Monitor appointed is option c. |
| | | Schedule C - 10 - previously 79 | Prior to advertising a tender seeking to engage an Independent Monitor, the Department must provide the Operator with a copy of the proposed tender documentation, including: | N/A | Not Applicable | | Engagement of the Independent Monitor occurred before the audit period. The Independent Monitor was verbally advised the Operator was involved in the development of the scope of works and the tender assessment panel. |
| | | Schedule C - 10.a | the Conditions of tendering; and | N/A | Not Applicable | | Engagement of the Independent Monitor occurred before the audit period. The Independent Monitor was advised the Operator was provided a copy of the tender documentation issued, including Conditions of tendering, which MRM was involved with the development of the RFT. |
| | | Schedule C - 10.b | the scope of services; and | N/A | Not Applicable | | Engagement of the Independent Monitor occurred before the audit period. The Independent Monitor was advised that the Operator was involved in developing the tender documentation scope of services. |
| | | Schedule C - 10.c | the assessment criteria; and | N/A | Not Applicable | | Engagement of the Independent Monitor occurred before the audit period. The Independent Monitor was advised that the Operator participated on the tender assessment panel. |

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| | | Schedule C - 10.d | the Conditions of contract. | N/A | Not Applicable | | Engagement of the Independent Monitor occurred before the audit period. The Independent Monitor was advised the Operator was provided a copy of the tender documentation issued, including Conditions of contract, which MRM was involved with the development of the RFT. |
| | | Schedule C - 11 - previously 80 | The Operator may, within 14 days of receiving the proposed tender documentation, provide comment on the proposed documentation to the Department and the Department must consider any comments provided by the Operator on the proposed documentation prior to advertising the tender. | N/A | Not Applicable | | Engagement of the Independent Monitor occurred before the audit period. MRM were involved throughout the tender documentation preparation process and had input during development therefore no requirements for request for changes. |
| | | Schedule C - 12 - previously 81 | The Department must provide the Community with an opportunity to provide submissions on the engagement of the Independent Monitor and the Department must consider any submissions provided by the Community on the engagement of the Independent Monitor prior to advertising the tender. | N/A | Not Applicable | Sighted copy of Department letter to stakeholders (dated 12Dec20) on the appointment of Independent Monitor. This letter provided Department contact details for any clarifications regarding the Independent Monitor. | Occurred before the audit period. The Department provided the Future Tender Opportunity notice of intention to call for tenders online requisition document obtained from Procurement Services details expected release date of 01/02/2019 website address: https://tendersonline.nt.gov.au/Tender/List/#!/FutureOpportunities . It clearly identified "Darwin - Consultancy - McArthur River Mine - Independent Monitor Services for a Period of 36 Months" and provided contact details that could have been used for any comment (note: while Advisian reviewed the notice, we were unable to view it from the website because access is only available for a limited timeframe). OBS: The opportunity for Community submissions on the engagement of the Independent Monitor was in late 2019 and has passed and is outside the audit period. Engagement should be scheduled for future Independent Monitor tender processes. |
| | | Schedule C - 13 - previously 82 | The terms of engagement of the Independent Monitor may include the following: | | Refer to sub conditions | As this condition states "may" rather than "must", all sub- conditions are considered not applicable as they are optional. | OBS: state the condition as a requirement rather than allowing it to be an option with use of the word "shall" instead of "may". |
| | | Schedule C - 13.a | a period of engagement between three and five years; | N/A | Not Applicable | Conditions of Contract, Section 3.3 - Consultant Services Period Contract version 5.3 1 June 2019. | Period of Contract 36 months and an extension option. |
| | | Schedule C - 13.b | a statement acknowledging that the Operator is responsible for the costs of the Independent Monitor; | N/A | Not Applicable | Email dated 30/01/2020 from MRM to the Department subject: Confirmation of the Independent Monitor | Department provided evidence that MRM were advised who the Independent Monitor was. There is no reference in Conditions of Contract - Consultant Services Period Contract version 5.3 1 June 2019 related to payment by the Operator. |
| | | Schedule C - 13.c | a warranty by the Independent Monitor that it will: | | Refer to sub conditions | | |
| | | Schedule C - 13.c.i | act independently of the Department, the Operator, the Minister and any other person; and | N/A | Not Applicable | | Unable to locate in RFT (no reference to word warranty or independently) other than the name independent monitor. No reference in Conditions of Contract - Consultant Services Period Contract version 5.3 1 June 2019. |
| | | Schedule C - 13.c.ii | act honestly, reasonably and with the degree of professional care, knowledge, experience, skill and diligence which may reasonably be expected; and | N/A | Not Applicable | | This is covered in RFT Section 10a for professional advice and skill and 10c for reasonable care in Conditions of Contract - Consultant Services Period Contract version 5.3 1 June 2019. |
| | | Schedule C - 13.c.iii | act within the time prescribed under these Conditions, the terms of engagement, or where no time is prescribed, within a reasonable time; and | N/A | Not Applicable | | Unable to locate in RFT or Conditions of Contract - Consultant Services Period Contract version 5.3 1 June 2019. |
| | | Schedule C - 13.c.iv | immediately notify the Department in writing upon becoming aware of the existence or possibility of a conflict of interest; | N/A | Not Applicable | | RFT Section 17 of the Conditions of Contract - Consultant Services Period Contract version 5.3 1 June 2019. |
| | | Schedule C - 13.d | an obligation on the Independent Monitor to keep all information provided to the Independent Monitor confidential. | N/A | Not Applicable | | Conditions of Contract s.18.1.1 Confidentiality - Consultant "shall hold all Confidential information in confidence" Unable to locate in RTF (no reference to the word 'confidential') |
| | | Schedule C - 14 - previously 83 | If the Independent Monitor requires an indemnity, the Operator must enter into a binding agreement providing a reciprocal indemnity to the Department. | N/A | Not Applicable | | None requested by Independent Monitor. |
| | | Schedule C - 15 - previously 84 | The Department must notify the Operator of the appointment of the Independent Monitor and must provide the Operator with a copy of the terms of engagement. | N/A | Not Applicable | Letter dated 30 /01/2020 with subject Appointment of Advisian Pty Ltd as MRM Independent Monitor. MRM acknowledgement of correspondence dated 30/01/2020 | Engagement of the Independent Monitor occurred before the audit period. |
| | | Schedule C - 16 - previously 85 | The Operator and the Department must not interfere or attempt to influence the Independent Monitor in its assessment of environmental performance under these Conditions. | 4 | Full Compliance | The Independent Monitor has observed no interference or attempt to influence the Independent Monitor in the performance of its Independent Monitor role. | |

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| | | Schedule C - 17 - previously 86 | The Operator and the Department must each: | | Refer to sub conditions | | |
| | | Schedule C - Schedule C - 17.a | cooperate with the Independent Monitor; and | 4 | Full Compliance | Very high level of cooperation from the Department in assisting the IM. | |
| | | Schedule C - Schedule C - 17.b | provide all necessary information and documents within their possession, custody or control to the Independent Monitor; and | 4 | Full Compliance | All requests for information have been responded to promptly to provide the relevant documentation requested. | |
| | | Schedule C - 17.c | procure for the Independent Monitor access to such premises owned, leased, or licensed by it as may be reasonably necessary, | 4 | Full Compliance | IM workshops and meeting conducted at Department's Darwin office in March and November 2020. | |
| | | Schedule C - 17.d | to enable the Independent Monitor to undertake its assessment of environmental performance under these Conditions. | 4 | Full Compliance | The Department has facilitated and assisted the Independent Monitor to undertake its assessment of environmental performance against Authorisation Conditions. | |
| | | Schedule C - 18 - previously 87 | The Independent Monitor must engage with the Operator, the Department and the Community in undertaking the independent monitoring assessment. | 4 | Full Compliance | The Department has engaged with the Independent Monitor in undertaking its assessment of environmental performance. | |
| | | Schedule C - 19 - previously 88 | If the Independent Monitor identifies an issue it considers requires urgent investigation and reporting: | | Refer to sub conditions | | |
| | | Schedule C - 19.a | the Independent Monitor must advise the Operator and the Department of the issue as soon as practicable and may include recommendations as to action to be taken; and | N/A | Not Applicable | | No urgent issues have been identified by the Independent Monitor as part of Scope Tasks 1 to 7 to date. |
| | | Schedule C - 19.b | the Operator must consider the advice, and any recommendations, from the Independent Monitor and notify the Department and the Independent Monitor of the action the Operator proposes to take; and | N/A | Not Applicable | | No urgent issues have been identified by the Independent Monitor as part of Scope Tasks 1 to 7 to date. |
| | | Schedule C - 19.c | the Department may, where appropriate, advise the Operator and the Independent Monitor of action the Department proposes to take; and | N/A | Not Applicable | | No urgent issues have been identified by the Independent Monitor as part of Scope Tasks 1 to 7 to date. |
| | | Schedule C - 19.d | the Independent Monitor may provide further advice to the Operator, and where appropriate the Department, regarding the proposed action and the Operator and the Department must consider the further advice; and | N/A | Not Applicable | | No urgent issues have been identified by the Independent Monitor as part of Scope Tasks 1 to 7 to date. |
| | | Schedule C - 19.e | if, after providing further advice, the Independent Monitor is not satisfied with the proposed action, the Independent Monitor may notify the Operator and the Department of the Independent Monitor's intention to undertake its own investigation and report; and | N/A | Not Applicable | | No urgent issues have been identified by the Independent Monitor as part of Scope Tasks 1 to 7 to date. |
| | | Schedule C - 19.f | the Operator and the Department must facilitate the Independent Monitor's investigation and report. | N/A | Not Applicable | | No urgent issues have been identified by the Independent Monitor as part of Scope Tasks 1 to 7 to date. |
| | | Schedule C - 20 - previously 89 | The independent monitoring assessment is to be conducted, where practical, in a manner that complements the existing annual environmental assessment and audit processes undertaken by the Operator and the Department. | 4 | Full Compliance | The Independent Monitor activities have been scheduled to support the established annual regulatory activities program (e.g. EMR 31 August) and mindful of the wet season constraints. | |
| | | Schedule C - 21 - previously 90 | The Independent Monitor must prepare and provide a report: | | Refer to sub conditions | | OBS: To reflect the RFT scope update the condition to specifically mention the Annual Environmental Performance Audit Report, as described in the RFT. |
| | | Schedule C - 21.a | annually to the Minister to assist with the review of the Mining Management Plan; and | N/A | Not Applicable | | MMP's are no longer required annually. They are required when there is a significant chance to mining operations. The Independent Monitor has reviewed the AMP, which is a component of the MMP and prepared the AEPAR 2020 which considers elements of the MMP. However a specific review of the MMP is not currently in the scope of Tasks 1 to 13. |
| | | Schedule C - 21.b | on request by the Minister. | N/A | Not Applicable | | Future item. No request made by the Minister to date. |
| | | Schedule C - 22 - previously 91 | The Minister must provide a report received from the Independent Monitor to the Operator and the Department within 14 days of receiving the report. | 4 | Full Compliance | 01Apr21 Independent Monitor submitted AEPAR to Minister. 19Apr21 DITT received request from Minister to provide written response to IM's findings (Minister's reference 2021/0372-NSM), refer to DITT briefing note to Minister. | AEPAR submitted Thursday 01Apr21. Minister received AEPAR Tuesday 06Apr21 following Easter long weekend and request for DITT response issued 19Apr21 (13 days from receiving report). |
| | | Schedule C - 23 - previously 92 | The Independent Monitor must prepare an additional report in a form suitable for distribution to the Community. | N/A | Not Applicable | | IM prepared an Annual Report Card (ARC) public release 24May21. ARC was a summary version of the main AEPAR using language suitable for the local community. |

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| | | Schedule C - 24 - previously 93 | The Operator and the Department acknowledge that the report from the Independent Monitor will be made publicly available (including publication on an appropriate internet site) and may include data used in the preparation of the report. | 4 | Full Compliance | IM Report made publicly available 31May21 by posting on DITT website. https://industry.nt.gov.au/publications/mining-and-energy/public-environmental-reports/mining/mcarthur-river-independent-monitor | Full copies of the AEPAR 2020 and appendices (audit data) and ARC (summary report) were published on DITT website, 31May21. |
| | | Schedule C - 25 - previously 94 | Prior to being made publicly available, the Minister must request from the Operator and the Department any comments on the Independent Monitor's report. Such comments must be provided within 28 days of the Minister's request and must be made publicly available with the Independent Monitor's report. | 4 | Full Compliance | 19Apr21 DITT received request from Minister to provide written response to IM's findings by 14May21 (Ministers reference 2021/0372-NSM), refer to DITT briefing note to Minister Email DITT to Minister subject : For Urgent D/CEO signature - 58:MIN21:968 - Urgent Ministerial: McArthur River Mine - Department's response to IM findings dated 14May2021. Independent Monitor Report made publicly available 31May21 by posting on the DITT website. https://industry.nt.gov.au/publications/mining-and-energy/public-environmental-reports/mining/mcarthur-river-independent-monitor | Full copies of the Department' and Operators' comment on the IM's report were published on the DITT website, 31May21. refer publicly available on DITT website, https://industry.nt.gov.au/publications/mining-and-energy/public-environmental-reports/mining/mcarthur-river-independent-monitor |
| | | Schedule C - 26 - previously 95 | The Operator acknowledges that it is responsible for all costs of the independent monitoring assessment other than those costs directly attributable to those elements of the independent monitoring assessment associated with Condition 21(b)) which are the responsibility of the Department. | N/A | Not Applicable | | Nothing has been triggered under condition 21.b. |
| | | Schedule C - 27 - previously 96 | The Department may provide to the Operator, from time to time, a notice setting out amounts due and payable under the terms of the engagement of the Independent Monitor. | 4 | Full Compliance | Emails providing invoices to MRM for reimbursement of costs for Independent Monitor Services under contracts D12-0274 and D19-0053 dated 7Jul2020. Email DITT to Operator subject Invoice for payment MRM IM invoice - June 2020 dated 7Jul2020 | The Independent Monitor was advised that invoices from the Department have been issued. |
| | | Schedule C - 28 - previously 97 | The Operator must pay an amount notified in accordance with Condition 27 within seven (7) days of receiving such notice. | 4 | Full Compliance | The Independent Monitor was advised that invoices from the Department were paid within NTG procurement timeframes. | |
| | | Schedule C - 29 - previously 98 | If the Operator disputes a notice provided by the Department under Condition 27: | | Refer to sub conditions | | |
| | | Schedule C - 29.a | the Operator must pay the amount specified in the notice in accordance with Condition 28; and | N/A | Not Applicable | | No disputes have occurred in the audit period. |
| | | Schedule C - 29.b | the Operator must notify the Department in writing within 14 days of receiving the notice, setting out the reasons why the Operator disputes the notice; and | N/A | Not Applicable | | No disputes have occurred in the audit period. |
| | | Schedule C - 29.c | the Chief Executive of the Operator and the Chief Executive of the Department must meet within five (5) working days to resolve the dispute. | N/A | Not Applicable | | No disputes have occurred in the audit period. |
| | | Schedule C - 30 - previously 99 | If there is a dispute (other than a dispute mentioned in Condition 29) between the Operator and the Department as to any matter or thing arising out of these Conditions (the "Dispute"), the party claiming that a Dispute has arisen must notify the other party to the Dispute and the Chief Executive of the Operator, the Chief Executive of the Department and the Independent Monitor must meet within five (5) working days to resolve the Dispute. | N/A | Not Applicable | | No disputes have occurred in the audit period. |
| | | Schedule C - 31 - previously 100 | If the Chief Executive of the Operator, the Chief Executive of the Department and the Independent Monitor are unable to resolve a Dispute within ten (10) working days of meeting in accordance with Condition 30, the Operator and the Department may agree to the appointment of an independent party to assist in the resolution of the Dispute. | N/A | Not Applicable | | No disputes have occurred in the audit period. |
| | | Schedule C - 32 - previously 101 | If, within five (5) working days of either the Operator or the Department nominating a person to be the independent party, no agreement is reached as to who is to be appointed as the independent party, either the Operator, the Department or both may refer the matter to the President of the Law Society of the Northern Territory. | N/A | Not Applicable | | No disputes have occurred in the audit period. |
| | | Schedule C - 33 - previously 102 | The President of the Law Society Northern Territory may nominate a person to be the independent party and the parties to the Dispute are bound to accept the appointment of that person. | N/A | Not Applicable | | No disputes have occurred in the audit period. |

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| | | Schedule C - 34 - previously 103 | The role of the independent party is to assist in negotiating a resolution of the Dispute and the independent party cannot make a decision that is binding on either the Operator or the Department. | N/A | Not Applicable | | No disputes have occurred in the audit period. |
| | | Schedule C - 35 - previously 104 | The Operator and the Department must make available to the independent party all materials requested by it and must provide the independent party with all other materials relevant to the Dispute. | N/A | Not Applicable | | No disputes have occurred in the audit period. |
| | | Schedule C - 36 - previously 105 | The Operator and the Department must: | | Refer to sub conditions | | No disputes have occurred in the audit period. |
| | | Schedule C - 36.a | Bear their own costs of resolving the Dispute under this Condition; and | N/A | Not Applicable | | No disputes have occurred in the audit period. |
| | | Schedule C - 36.b | Bear equally the costs of any independent party engaged. | N/A | Not Applicable | | No disputes have occurred in the audit period. |
| (13Nov2020) SCHEDULE D - ENVIRONMENTAL MONITORING AND MANAGEMENT | | | | | | | |
| | | Schedule D - 1 - previously 64 | If the Operator establishes a new surface water monitoring location, a written notice of the location (in GDA 94 format) and nature of the monitoring must be given to the Department within 30 days of its establishment. | N/A | Not Applicable | | Department advised that the Operator has not notified them of a new monitoring location. |
| | | Schedule D - 2 - previously 65 | The Operator must maintain continuous monitoring having regard to: | | Refer to sub conditions | | Included as context for Schedule D condition 2.c. |
| | | Schedule D - 2.a | devices installed at the following locations: | | - | | Included as context for Schedule D condition 2.c. |
| | | Schedule D - 2.a.i | SW29 (upstream Surprise Creek outside the zone of influence of TSF); | | - | | Included as context for Schedule D condition 2.c. |
| | | Schedule D - 2.a.ii | SCGS (Surprise Creek gauge station between the TSF and the Mine); | | - | | Included as context for Schedule D condition 2.c. |
| | | Schedule D - 2.a.iii | SW30 (upstream Emu Creek); | | - | | Included as context for Schedule D condition 2.c. |
| | | Schedule D - 2.a.iv | USGS (upstream at the McArthur River gauge station); | | - | | Included as context for Schedule D condition 2.c. |
| | | Schedule D - 2.a.v | BCGS (upstream at the Barney Creek gauge station); | | - | | Included as context for Schedule D condition 2.c. |
| | | Schedule D - 2.a.vi | SW12 (immediately downstream of the Mine capturing outflow from Emu Creek, Barney Creek, drainage lines from SEPROD, Old McArthur River Channel and the McArthur River diversion channel but before the Glide River joins the McArthur River channel); | | - | | Included as context for Schedule D condition 2.c. |
| | | Schedule D - 2.b | devices must at a minimum measure electrical conductivity, and may measure additional parameters such as pH; | | - | | Included as context for Schedule D condition 2.c. |
| | | Schedule D - 2.c | the Operator must from 30 August 2017 include data from these devices in data submission under Condition 7 of Schedule A. | 4 | Full Compliance | Email from Operator to Department dated 2Feb2021 FW: MRM Environmental Monitoring Data Q4 2020 | Department advised that Operator provides in their email a summary of whether there were any locations not able to be sampled. Data is only downloaded after the wet season so it is provided annually in the relevant quarter. Email submission MRM to Department (MRM DPIR Data Q2 2020) Continuous EC data has been provided from the 2019/2020 wet season. Continuous EC data was not available for SW04, SW12, and SW10 due to equipment failures during the wet season. |
| | | Schedule D - 4 - previously 66 | The Operator must ensure groundwater monitoring bores and extraction bores are constructed, maintained and decommissioned in compliance with the document entitled Minimum construction requirements for water bores in Australia published by the National Uniform Drillers Licensing Committee (third edition, February 2012 or a current version of the document). In this regard: | | Refer to sub conditions | | |
| | | Schedule D - 4.a | construction logs and bore location coordinates in GDA 94 format must be available to the Minister on request and provided to the Minister annually in the EMR; | 4 | Full Compliance | EMR 2019 - 2020 - Appendix V - 2019 Hydrogeological Drilling and Field Campaign. Construction bore logs are provided in the EMR 2019-2020 in Appendix V, 2019 Hydrogeological Drilling and Field Campaign Appendix A. | Department advised that it was included in the 2020 EMR in Appendix V. No requests for data were made by the Minister in the audit period. |

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| | | Schedule D - 4.b | logs of maintenance activities must be kept available to the Minister on request; | N/A | Not Applicable | | No requests for data were made by the Minister in the audit period. Department advised this may include purging of bores or removal of pumps if stuck, etc given they are making management decisions based on the data and therefore information about changes in the bores would be relevant. |
| | | Schedule D - 4.c | logs of bore decommissioning activities must be kept and available to the Minister on request and reported in the Operator's Annual EMR. | 4 | Full Compliance | EMR 2019 - 2020 - Appendix V - 2019 Hydrogeological Drilling and Field Campaign Decommissioning activities are reported in the EMR 2019-2020 (Section 4.3.2 and 2019 Hydrogeological Drilling and Field Campaign) | Department advised that it was included in the 2020 EMR in Appendix V. No requests for data were made by the Minister in the audit period. |
| | | Schedule D - 6 | From the date of authorisation of the Overburden Management Project the Operator must undertake monitoring in accordance with the following Environmental Management Plans approved in the MMP: | | Refer to sub conditions | | Note the titles differ from the actual titles of the plans in the MMP. The Independent Monitor understands that there is a Authorisation currently in preparation for the delegate's consideration that appears to address the inconsistencies between the Environmental Management Plans approved in the MMP and this condition. |
| | | Schedule D - 6.a | Dust Management Plan; | 3 | Part Compliance (High) | There is no plan with this name in the approved MMP. DITT advised that the Operator's "approved plans with respect to dust is Air Quality Management Plan." DITT is preparing an Authorisation that will address this management plan naming inconsistency to allow enforceability of the Authorisation. Refer to condition Schedule D - 6.c. DITT has approved the MMP, which contains an Air Quality Management Plan, not a Dust Management Plan as listed in this condition. | OFI: Amend the Authorisation to accurately reflect the Environmental Management Plan titles approved in the MMP. (DITT advised this task is underway.) |
| | | Schedule D - 6.b | Water Management Plan – surface water, groundwater and fluvial sediments; | 4 | Full Compliance | Water Management Plan 2020 as part of the AMP. DITT advised that the Operator's "approved plans with respect to Water Management Plan, has been amended and references to "surface water, groundwater and fluvial sediments" has been omitted". DITT is preparing an Authorisation that will address this management plan naming inconsistency to allow enforceability of the Authorisation. The Department's review of the implementation of the monitoring being in accordance with these plans occurs in their review of the EMR. | |
| | | Schedule D - 6.c | Air Quality; | 4 | Full Compliance | The Department confirm that this condition relates to the Air Quality Management Plan, including dust. The Department's review of the implementation of the monitoring being in accordance with this plan occurs in their review of the EMR. | |
| | | Schedule D - 6.d | Vegetation and terrestrial fauna; | 3 | Part Compliance (High) | There is no plan with this name in the approved MMP. DITT advised that the Operator's "approved Rehabilitation Management Plan includes the vegetation and terrestrial fauna plans." DITT is preparing an Authorisation that will address this management plan naming inconsistency to allow enforceability of the Authorisation. DITT has approved the MMP, which does not contain a Vegetation and terrestrial fauna Management Plan as listed in this condition. | OFI: Refer to schedule D - 6.a. |
| | | Schedule D - 6.e | Aquatic fauna; | 3 | Part Compliance (High) | There is no plan with this name in the approved MMP. DITT advised that the Operator's approved Rehabilitation Management Plan and Water Management Plan include the aquatic fauna plans. DITT is preparing a Authorisation that will address this management plan naming inconsistency to allow enforceability of the Authorisation. DITT has approved the MMP, which does not contain an Aquatic fauna Management Plan as listed in this condition. | OFI: Refer to schedule D - 6.a. |

Authorisation Compliance Workbook - DITT

| 15 Aug 2019 Authorisation Condition No. | 10 Aug 2020 Authorisation Condition No. | 13 Nov 2020 Authorisation Condition No. | Condition/Requirement | Score | Compliance Level | Evidence | Comments |
|---|---|---|--|-------|---------------------------|--|---|
| | | Schedule D - 6.f | Heritage and sacred sites. | 3 | Part Compliance (High) | <p>There is no plan with this name in the approved MMP. DITT advised "the relevant documents approved for heritage and sacred sites are:</p> <ol style="list-style-type: none"> 1. Permit to clear procedures and forms 2. Cultural Heritage management procedure" <p>DITT is preparing an Authorisation that will address this management plan naming inconsistency to allow enforceability of the Authorisation.</p> <p>DITT has approved the MMP, which does not contain a Heritage and sacred sites Management Plan as listed in this condition.</p> | OFI: Refer to schedule D - 6.a. |
| | | Schedule D - 7 | Any required material changes to the Environmental Management Plans mentioned in Condition 6 of this Schedule must be approved by the Department in writing. | 4 | Full Compliance | <p>Email Operator to DITT Subject: MRM Updated Environmental Management Plans dated 21Jun2021 (outside audit period) including Reconciliation of Change to Management Plans.</p> <p>DITT advised they have approved the following plans in the audit period:</p> <ol style="list-style-type: none"> 1. Approval of the 2020 OMP MMP (Nov, 2020) <p>DITT received the revised AMP (that includes the Environmental Management Plans) that was issued in relation to the WDL and the Operator stated what changes had been made to plans (outside the audit period).</p> <p>DITT is yet to review and approve this AMP. Operator required to continue to meet the requirements of the approved AMP.</p> | <p>Noted in the EMR submitted 31Aug20 removal of soils sampling and changes to dust monitoring that are not clearly notified to DITT. This new condition from 13Nov20 provides the system to capture these changes for approval by DITT.</p> <p>OBS: Update of the 13Nov20 Authorisation to include "Any required material changes to the Environmental Management Plans mentioned in Condition 6 of this Schedule must be approved by the Department in writing." to ensure changes to management plans require approval from DITT.</p> <p>Note there is no timeframe stated in the Authorisation that approval is required by DITT. The Operator is able to communicate with DITT on any urgent approvals required.</p> |



Appendix D
NT EPA Recommendations Compliance
Workbook - DITT

NT EPA Recommendations Compliance Workbook - 2021 Department of Industry, Tourism and Trade (DITT)

Audit Period 01 May 2020 to 30 April 2021

| NT EPA Recommendation No. | NT EPA Recommendation | Score | Compliance Level | Evidence | Comments |
|---------------------------|--|-------|------------------|--|--|
| 1 | The Proponent shall ensure that the McArthur River Mine Overburden Management Project is implemented in accordance with all environmental commitments and safeguards: | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 14. | <p>Note: "Confirmed condition in VoA 0059 dated 13Nov20 - Condition 14" text in the evidence column is referring to whether the NT EPA recommendation was adopted into an Authorisation condition and provides the corresponding condition number. This approach is used throughout the NT EPA Recommendations Compliance Workbook - DITT in the evidence column.</p> <p>In January 2020, as required under Section 41 of the MMA, the Operator submitted for assessment an amended Mining Management Plan (MMP) for the OMP works addressing commitments made in the EIS, the NT EPA recommendations and EPBC Act approval conditions. DITT completed assessment of the 2020 MMP. Authorisation 0059 issued under section 38 of the MMA on 13Nov2020 approved the 2020 MMP proposing the OMP related activities.</p> <p>The commitments and safeguards made in relation to the OMP by the Operator and NT EPA in their recommendations were first incorporated as conditions where relevant in Authorisation 0059 issued 15Aug2019 and retained in subsequent variations.</p> <p>Future action: Compliance monitoring will be ongoing. Examples include continuation of health of MacArthur River monitoring, specifically bio-uptake of metals in flora and fauna and NOEF monitoring including infrared to determine the heat (west stage with high convective oxidation). To be submitted in the EMR annually.</p> |
| 1.i | identified in the final Environmental Impact Statement for the McArthur River Mine Overburden Management Project (draft Environmental Impact Statement, Supplement to the draft Environmental Impact Statement and additional information) | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 14.a). 2020 MMP including, Appendix B - Reconciliation of Actions and Commitments (incorporating EIS and MMP commitments) | In January 2020, as required under Section 41 of the MMA, the Operator submitted for assessment an amended MMP for the OMP works addressing commitments made in the EIS, the NT EPA recommendations and EPBC Act approval conditions. |
| 1.ii | recommended in this Assessment Report 86. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 14.b). | <p>No action for DITT.</p> <p>TSF EPROD, CW Charlie basal construction (NT EPA recommended a 0.5m CCL), bridging MMP was approved consistent with NT EPA recommendations before they were officially a requirement/commenced.</p> |
| 1 continued | The Northern Territory Environment Protection Authority considers that all safeguards and mitigation measures outlined in the Environmental Impact Statement are binding commitments made by the Proponent. Where there is an inconsistency between the commitments made by the Proponent and these recommendations, the recommendations will take precedence. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 14.d). Note: The Authorisation shall prevail, rather than the Recommendations, in the event of an inconsistency. | <p>Inconsistency addressed in condition in Authorisation 0059 dated 13Nov20 - Condition 14.d). "the most recent Authorisation shall prevail to the extent of any inconsistency".</p> <p>The role of DITT to ensure actions are not contrary to the NT EPA recommendations and that their intent has been complied with.</p> <p>Operator commitments are listed in 2019-2020 Environmental Monitoring Report, Appendix A - Reconciliation of Actions and Commitments</p> |
| 2 | The Proponent shall provide written notice to the Northern Territory Environment Protection Authority and the responsible Minister if it alters or proposes to alter the McArthur River Mine Overburden Management Project and/or commitments, safeguards or mitigation measures in the Environmental Impact Statement in such a manner that the environmental significance of the action may have changed, in accordance with clause 14A of the Environmental Assessment Administrative Procedures. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 15). Situation has not arisen. Would be considered on a case by case basis. | The 2020 MMP has been assessed by DITT and conforms to the NT EPA recommendation. |

NT EPA Recommendations Compliance Workbook - 2021 Department of Industry, Tourism and Trade (DITT)

Audit Period 01 May 2020 to 30 April 2021

| NT EPA Recommendation No. | NT EPA Recommendation | Score | Compliance Level | Evidence | Comments |
|---------------------------|---|-------|------------------------|---|--|
| 3 | The Proponent shall ensure that the commitments and safeguards listed in the EIS for the McArthur River Mine Overburden Management Project and recommended in this Assessment Report 86 are implemented in a manner and to the extent that ensures the health of the McArthur River is protected along its whole length at all times from mine related impacts. This is the overarching environmental outcome that is required to be achieved in respect of the Proposal and all future stages of the mine. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 16. Note: The overarching environmental outcome is not specifically stated in the Authorisation however, the Authorisation contains requirements that contribute to achieving the outcome. | Compliance monitoring will be ongoing. Yearly EMR report informed by expert consultants engaged by Operator. Experts review and assess the data. EMR comments on how Operator intends to action recommendations. Report on WDL requirements. Report on number of exceedances and during the audit period they were predominantly due to non-mine related events. DITT reviews previous EMRs to determine if issues have been addressed and if recommendations have been actioned. DITT notifies operator via letter of acceptance (or otherwise) of EMR. |
| 3 continued | To ensure the protection of the McArthur River from mine related impacts, the Proponent shall ensure that the annual loads of lead and zinc discharged to the McArthur River in future years (July to June) do not exceed the loads discharged in 2017-2018, taking into account seasonal variations in rainfall, and subject to future annual load calculations. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 16.b MRM Mine Derived Analyte Loads criteria for 2017-18 submitted to DITT, email 11:00am 08May20. EMR 2020 Section 3.7.3 Performance During the Reporting Period - discusses zinc and lead concentration in fluvial sediment . | The Independent Monitor has reviewed the Adaptive Management Plan (AMP) and advised it is appropriate for the current stage of the Project. DITT will oversee implementation by the Operator of the AMP, in accordance with NT EPA recommendation 28, which allows for management measures and interventions to be adapted if necessary to achieve this overarching environmental outcome. Related to NT EPA recommendation 27 which refers to a review within nine months following OMP authorisation. Future action: Condition recognises that the AMP will change over time and provides an approval requirement Compliance monitoring will be ongoing. Operator submitted loads criteria for 2017-2018 on 08May2020 in response to Condition 38 of the Authorisation. Subsequent OPR and EMRs report against that value. |
| 3 continued | The Proponent shall implement a monitoring program, developed in accordance with Recommendation 13, within six months of authorisation of the Proposal, to the satisfaction of the relevant regulator. The monitoring program shall quantify the annual loads of lead and zinc entering the main channel of the McArthur River and be used to assess whether or not the load limits specified herein have been met. A load summation shall be provided to the Independent Monitor for auditing at three yearly intervals. | 3 | Part Compliance (High) | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 16.c. Operator future requirement. Timeframe for the requirement to prepare a plan for monitoring is stated as 18 months in the OMP Authorisation rather than 6 months as stated in the NT EPA recommendations. | Operator future requirement within 18 months of the authorisation of the OMP. Timeframe for the requirement to prepare a plan for monitoring is stated as 18 months in the OMP Authorisation rather than 6 months as stated in the NT EPA recommendations. DITT advises 18 month timeframe is in recognition of adequate time to undertake a quality review including incorporating results from other relevant studies. |
| 3 continued | The Proponent shall implement an Adaptive Management Plan, to be developed in accordance with Recommendation 28, to allow for management measures and interventions to be adapted if necessary to achieve this overarching environmental outcome. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 16.d. Operator future requirement. | The Independent Monitor has reviewed the Adaptive Management Plan (AMP) version 31Jan2020 and provided comments. Operator future requirement to implement an AMP within 18 months of the authorisation of the OMP (Condition 16.d), which did not fall within in the audit period. DITT will oversee implementation by the Operator of the AMP, consistent with NT EPA recommendation 28, which allows for management measures and interventions to be adapted if necessary to achieve this overarching environmental outcome. DITT reviewed outside of the audit period plus a substantive review by Independent Monitor 15May20. |
| 4 | The Proponent shall implement all stages of the Proposal to meet the NT EPA's overarching environmental outcome provided for in Recommendation 3 to the satisfaction of the relevant regulator. In doing so, the Proponent shall ensure: | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 17. | Refer to NT EPA recommendation 13. Currently the Operator are to meet existing programs until the Ecotoxicological program is completed and then have SSTVs to meet. Future action: Compliance monitoring will be ongoing. |

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| NT EPA Recommendation No. | NT EPA Recommendation | Score | Compliance Level | Evidence | Comments |
|---------------------------|---|-------|------------------|--|--|
| 4.i | water quality in the McArthur River meets site-specific trigger values determined in accordance with ANZECC (2000) guidelines at appropriate monitoring locations determined in accordance with Recommendation 13 | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 17.a) i. Monitoring locations in accordance with recommendation 13 are referenced in Condition 17.a).i. and have been incorporated in Condition 27.b). i, ii and iii. | Operator future requirement: within 18 months of the authorisation of the OMP. Due 30Nov2020 (as per WDL-11 requirements) |
| 4.ii | creeks on the mine site show long-term improving trends in water quality within 20 years after cessation of mining. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 17.a) ii. | Future item: 20 years after cessation of mining. There is historic data and DITT has the quarterly data that would allow for comparison. Mine closure panel to consider 20 year trend. |
| 5 | Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to calculate contaminant loads and contaminant concentrations entering creeks and the McArthur River using models that have been regularly reviewed and recalibrated. Specific assumptions to be tested include but are not limited to: | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 17.iii. | |
| 5.i | groundwater flow paths | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 17.iii.c.i. Hydrogeological investigations to be undertaken. | Advised by the DITT that the Operator has commissioned additional hydrogeological investigations that will include calculating contaminant loads and contaminant concentrations entering creeks and the McArthur River. The Operator will drill a number of additional bore holes to increase site data and increase certainty around calibration of the model. |
| 5.ii | attenuation of metals from mine-derived wastes. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 17.iii.c.ii. | NT EPA recommended further work around modelling of attenuation studies. EPBC condition has further requirements. |
| 5 continued | Updated modelling shall use suitable site-specific data collected in the monitoring program. Models and modelling outputs, and the data collection programs to inform model updates, shall be reviewed at three year intervals by relevant independent panels appointed in accordance with Recommendations 8, 11 and 23, and the outputs used to inform the Adaptive Management Plan, to be developed in accordance with Recommendation 28. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 18. Future requirement. | Independent panel responsibility to review models and modelling outputs, and the data collection programs that informed the model development in future. Once accepted or otherwise, information to be incorporated into AMP. Future requirement as the Independent Panel(s) of experts is yet to be established. |
| 6 | Approvals and decisions in relation to the Proposal shall include conditions that require an audit to be conducted of the Proponent's Quality Assurance / Quality Control procedures and waste rock identification and handling performance every three years and reported to the relevant independent panel and the relevant regulator. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 19. | Operator future requirement: every three years, triggered by the authorisation of the OMP. For approval of any OMP-related activities, Operator to prepare and submit an amended MMP under Section 41 of the MMA detailing the QA/QC system implemented for waste rock management. DITT to complete assessment of the MMP, ensuring the proposed QA/QC system for waste rock management meets the requirements of Section 36(5) of the MMA and issue an appropriately conditioned Variation of Authorisation under section 38 of the MMA. Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 states "The design is consistent with the latest approvals that include the OMP EIS NOEF concepts." For future action: Audit required every three years from issuing of Authorisation 0059 on 13Nov2020. Compliance monitoring will be ongoing. |

NT EPA Recommendations Compliance Workbook - 2021 Department of Industry, Tourism and Trade (DITT)

Audit Period 01 May 2020 to 30 April 2021

| NT EPA Recommendation No. | NT EPA Recommendation | Score | Compliance Level | Evidence | Comments |
|---------------------------|---|-------|------------------------|---|--|
| 7 | The basal layer of the NOEF foundation shall be constructed with a compacted clay layer of at least 0.5 m thickness to limit seepage to groundwater during construction of the NOEF. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 20. CW Charlie ICE Review Letter 20.08.19 EMR 2019-2020. Basal layer of CW Charlie constructed during the audit period. Construction report reviewed by ICE used to verify 0.5m CCL. | For approval of any OMP-related activities, Operator to prepare and submit an amended MMP under Section 41 of the MMA that details the construction details of the NOEF. DITT has completed the assessment of the MMP and the proposed NOEF construction and development satisfies regulatory requirements. Conditions included in Authorisation 0059 effective from the Authorisation issued on 15Aug2019 specific to the construction of the NOEF. DITT advised that relevant conditions have been in all Authorisations since 12Oct2018. |
| 8 | Approvals and decisions in relation to the proposal will include conditions requiring the Proponent to provide funding to establish and operate a panel of independent experts to: | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 21. | Independent panel of experts, not active during audit period. Planning for independent expert panel establishment underway. Developing a framework for the establishment of the independent expert panels for consultation with relevant government agencies. |
| 8.i | review every three years the outcomes of the Proponent's management program for the NOEF, including the stability, surface condition, internal temperature, reactions and seepage quantity and characteristics of the NOEF to ensure the overarching environmental outcome can be met | 3 | Part Compliance (High) | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 23.d).ii. No reference to a requirement to review the NOEF Management Program every three years in the Authorisation. | Operator future requirement: within 12 months of the authorisation of the OMP for a NOEF groundwater seepage interception and recovery system report, refer Conditions 22.a) and b). Operator future requirement: within 24 months of the authorisation of the OMP must submit a NOEF geosynthetic liner cover system plan to the DITT, refer Conditions 23.a) to e), including audit of trial result by the Independent Monitor every three years thereafter. refer Condition 23. d. ii. DITT advised this requirement will be captured in the terms of reference for the yet to be established NOEF independent panel. OFI: Incorporate into DITT processes a review of the Operator's NOEF management program every three years. |
| 8.ii | review NOEF runoff and seepage monitoring results, and in particular trends in the contaminant concentrations in groundwater, and loads entering creeks and the McArthur River | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 22.a) and b). | Operator future requirement: within 12 months of the authorisation of the OMP for a NOEF groundwater seepage interception and recovery system report, refer Conditions 22.a) and b). |
| 8.iii | review the cover trial results, construction quality records, critical controls, stability assessments, cover performance and performance of progressive rehabilitation of the NOEF. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 23.b) and c). | Operator future requirement: within 24 months of the authorisation of the OMP must submit a NOEF geosynthetic liner cover system plan to DITT. |
| 8 continued | The panel shall provide a report every three years to the relevant regulator and the Independent Monitor and the report made available to the Proponent, government agencies, the Community Reference Group and the public. The panel is to be formed: | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 23.d).ii. | Operator future requirement: within 24 months of the authorisation of the OMP must submit a NOEF geosynthetic liner cover system plan to DITT. |
| 8.iv | with an independent chair, appointed by the responsible Minister in consultation with the Minister for Environment and Natural Resources | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 21. Reference to Independent Chair has been removed from Authorisation 13Nov21. | DITT, with support from the Operator, is managing the process to establish and operate an independent panel of experts. DITT advised this requirement will be captured in the terms of reference for the yet to be established CRG. Note: Future audit task to check that the independent chair recommendations are include in the independent panel terms of reference (2022 audit). |

NT EPA Recommendations Compliance Workbook - 2021 Department of Industry, Tourism and Trade (DITT)

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| NT EPA Recommendation No. | NT EPA Recommendation | Score | Compliance Level | Evidence | Comments |
|---------------------------|--|-------|------------------|---|---|
| 8.v | on the advice of the Department of Environment and Natural Resources, the Department of Primary Industry and Resources, and the Proponent. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 21. | DITT, with support from the Operator, is managing the process to establish and operate an independent panel of experts, including developing a Terms of Reference, for NOEF, TSF and mine closure planning. Draft Terms of Reference for NOEF were circulated for comment to DITT, DEPAWS, NT EPA and DAWE in July 2021. Note: Future audit task to check that consultation responses on the formation of the panel have been received from DITT, DEPAWS and Operator (2022 audit). |
| 8 continued | Terms of Reference for the panel shall set out the terms for roles and responsibilities, membership, timeframe for commencement and scope, reporting obligations and transparency and accountability. The Terms of Reference shall be finalised by the responsible Minister, in consultation with the Minister for Environment and Natural Resources acting on advice from the NT EPA, within three months of authorisation of the Proposal. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 21. Reference to terms of reference requirements has been removed from Authorisation 13Nov21. No timeframe for the finalisation of the terms of reference contained in the Authorisation. | Draft Terms of Reference for NOEF were circulated for comment to DITT, DEPAWS, NT EPA and DAWE in July 2021. Note: Future audit task to check NT EPA requirements for the independent panel terms of reference have been included (2022 audit). |
| | The structure of the panel and its Terms of Reference shall be reviewed by the Responsible Minister, in consultation with the Minister for Environment and Natural Resources every six years from the date the Terms of Reference are finalised. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 21. Reference to consultation with DEPAWS and six yearly review has been removed from Authorisation 13Nov21. | Draft Terms of Reference for NOEF were circulated for comment to DITT, DEPAWS, NT EPA and DAWE in July 2021. Note: Future audit task to check requirement for a review of the structure of the panel, every six years, by the DITT Minister in consultation with the DEPAWS Minister have been included in the terms of reference (2022 audit). |
| 9 | Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to implement a groundwater interception and recovery system for the NOEF. The system is to be designed to: | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 22. | Operator future requirement: within 12 months of the authorisation of the OMP. Also Refer to NT EPA recommendations 3, 4 and 13 above. |
| . | control seepage to Barney Creek diversion and the McArthur River over the life of the NOEF to as low as reasonably practicable | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 22.a). | Operator future requirement: within 12 months of the authorisation of the OMP. |
| . | achieve a recovering trend in the Barney Creek diversion and the old McArthur River channel water quality within 20 years of cessation of mining. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 22.b). | Operator future requirement: within 12 months of the authorisation of the OMP. |
| 9 continued | The system design and performance shall be reviewed by the independent panel, appointed in accordance with Recommendation 8, and approved by the relevant regulator/s. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 21. | DITT managing the process to establish and operate an independent panel of experts, including developing a Terms of Reference, for NOEF, TSF and mine closure planning Note: NT EPA recommendation suggests within 12 months of OMP approval. |
| 10 | Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to undertake constructability tests for geosynthetic liner cover options, including a geosynthetic liner /compacted clay layer combination, and monitor the options on rehabilitated stages of the NOEF to determine all relevant performance parameters including: | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 23. a) and b). | Included in 2019 bridging MMP. Addressed in the 2020 MMP, which appropriately details the proposed trials and works to be implemented to develop a NOEF cover system. For future action: Reporting of trial results and monitoring outcomes are to be: 1. provided every three years to the relevant independent panel and the Community Reference Group for review, and 2. audited by the Independent Monitor 3. incorporated into review of Adaptive Management Plan. Compliance monitoring will be ongoing. |
| . | slope stability during extreme events | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 23. c).i. | |
| . | cover performance as a result of heat effects | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 23. c).ii. | |

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| NT EPA Recommendation No. | NT EPA Recommendation | Score | Compliance Level | Evidence | Comments |
|---------------------------|--|-------|------------------------|--|---|
| . | tolerance of the geosynthetic liner to expected differential settlement | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 23. c).iii. | |
| . | veracity of cover longevity predictions | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 23. c).iv. | |
| . | likely long-term maintenance requirements. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 23. c).v. | |
| 10 continued | Reporting of trial results and monitoring outcomes shall be provided every three years to the relevant independent panel and the Community Reference Group for review, and shall be audited by the Independent Monitor. Outcomes of trials and monitoring shall be used to inform the Adaptive Management Plan, to be developed in accordance with Recommendation 28, and the Closure Plan for the mine. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 23. d) ii. | Operator future requirement: within 24 months of the authorisation of the OMP and then reviewed every three years |
| 11 | Approvals and decisions in relation to the proposal will include conditions requiring the Proponent to provide funding to establish and operate a panel of independent experts to: | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov21 - 21. | DITT, with support from the Operator, is managing the process to establish and operate an independent panel of experts, including developing a Terms of Reference, for NOEF, TSF and mine closure planning. Draft Terms of Reference for NOEF were circulated for comment to DITT, DEPAWS, NT EPA and DAWE in July 2021. |
| 11.i | review every three years the outcomes of the Proponent's management program for the TSF including the berm stability, risk of overtopping, seepage and other aspects of the TSF that could impact on site water quality and the McArthur River, including the risk of catastrophic failure of any component of the TSF, to ensure that the overarching environmental outcome can be met | 3 | Part Compliance (High) | Independent panel review of Proponent's TSF management every three years in not contained in the Authorisation 13Nov20. TSF operated and maintained in accordance with the most up to date TSF Operations Maintenance and Surveillance Manual ensuring 79.a) no discharge of water 79.d) integrity of the embankment. | Authorisation 13Nov21 Condition 50. a) require the operator to convene an advisory board (Independent Tailings Review Board or IRTB) to Condition 50. e) endorse any future modification to the TSF in writing, including but not limited to 50.e).i. studies and or trials and 50.e).ii. the TSF Operations, Maintenance and Surveillance Manual. Operator must provide quarterly report to the Ministers on TSF seepage and seepage management (Condition 80). DITT advised this requirement will be captured in the terms of reference for the yet to be established TSF independent panel. OFI: Incorporate into the TSF independent panel's terms of reference a review of the Operator's TSF management program every three years. |
| 11.ii | review TSF seepage monitoring results and the appropriateness of the monitoring program. | 3 | Part Compliance (High) | No reference to independent panel review of TSF seepage monitoring results every three year in the Authorisation 13Nov20. | Condition 76.d) The TSF seepage interception trench was operational by early 2021. Confirmed conditions in Authorisation 0059 dated 13Nov21 - 80. and 80.b), c), d), and e). Operator must submit quarterly TSF written status report to the Minister on seepages and management of seepage. DITT advised this requirement will be captured in the terms of reference for the yet to be established TSF independent panel. OFI: Incorporate into the TSF independent panel's terms of reference a review of the TSF seepage monitoring results and appropriateness of the monitoring program every three years. |
| 11 continued | The panel shall provide a report every three years to the relevant regulator and the Independent Monitor and is made available to the Proponent, government agencies, the Community Reference Group and the public. The panel shall be formed: | 3 | Part Compliance (High) | No reference to an independent panel TSF report every three years or making available to the Operator, government agencies, CRG or the public is contained in the Authorisation 13Nov20. Refer 11.i. and 11.ii. above. | Draft Terms of Reference for NOEF were circulated for comment to DITT, DEPWS, NT EPA and DAWE in July 2021. DITT advised this requirement will be captured in the terms of reference for the yet to be established TSF independent panel. OFI: Incorporate into the TSF independent panel's terms of reference a TSF review report every three years to be made available to the Operator, government agencies, CRG and the public. |

NT EPA Recommendations Compliance Workbook - 2021 Department of Industry, Tourism and Trade (DITT)

Audit Period 01 May 2020 to 30 April 2021

| NT EPA Recommendation No. | NT EPA Recommendation | Score | Compliance Level | Evidence | Comments |
|---------------------------|--|-------|------------------|--|---|
| 11.iii | With an independent chair, appointed by the responsible Minister in consultation with the Minister for Environment and Natural Resources. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 21. Reference to Independent Chair has been removed from Authorisation 13Nov21. | DITT, with support from the Operator, is managing the process to establish and operate an independent panel of experts, including developing a Terms of Reference, for NOEF, TSF and mine closure planning. Draft Terms of Reference for NOEF were circulated for comment to DITT, DEPAWS, NT EPA and DAWE in July 2021. Note: Future audit task to check that the independent chair recommendations are include in the independent panel terms of reference (2022 audit). |
| 11.iv | on the advice of the Department of Environment and Natural Resources, the Department of Primary Industry and Resources, and the Proponent. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 21. | Draft Terms of Reference for NOEF were circulated for comment to DITT, DEPAWS, NT EPA and DAWE in July 2021. TSF is required to be operated and maintained in accordance with the most up to date TSF Operations Maintenance and Surveillance Manual ensuring 79.a) no discharge of water 79.d) integrity of the embankment. Note: Future audit task to check that consultation responses on the formation of the panel have been received from DITT, DEPAWS and Operator (2022 audit). |
| 11 continued | Terms of Reference for the panel shall set out the terms for roles and responsibilities, membership, timeframe for commencement and scope, reporting obligations and transparency and accountability. The Terms of Reference shall be finalised by the responsible Minister, in consultation with the Minister for Environment and Natural Resources acting on advice from the NT EPA, within six months of authorisation of the Proposal. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 21. Reference to terms of reference has been removed from Authorisation 13Nov21. No timeframe for the finalisation of the terms of reference contained in the Authorisation. | Draft Terms of Reference for NOEF were circulated for comment to DITT, DEPAWS, NT EPA and DAWE in July 2021. Note: Future audit task to check NT EPA requirements for the independent panel terms of reference have been included (2022 audit). |
| 11 continued | The structure of the panel and its Terms of Reference shall be reviewed by the Responsible Minister, in consultation with the Minister for Environment and Natural Resources every six years from the date the Terms of Reference are finalised. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 21. Reference to consultation with DEPAWS and six yearly review has been removed from Authorisation 13Nov21. | Draft Terms of Reference for NOEF were circulated for comment to DITT, DEPAWS, NT EPA and DAWE in July 2021. Note: Future audit task to check requirement for a review of the structure of the panel, every six years, by the DITT Minister in consultation with the DEPAWS Minister have been included in the terms of reference (2022 audit). |
| 12 | As soon as practicable after cessation of mining, tailings and other contaminated earthen materials from the Tailings Storage Facility shall be deposited in the mine pit void using contemporary best-practice placement techniques, then protected with a water cover. Tailings shall preferably be reprocessed before in-pit disposal. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20- Condition 24. | Condition 24. a) includes requirements for strategies for tailing reprocessing. Operator future requirement: to submit a strategy on long term disposal management of tailings into the mine pit void within 5 years of authorisation of OMP. |
| 12 continued | The intention of these measures is to protect the McArthur River water quality and aquatic ecosystems from surface or groundwater contamination consistent with the NT EPA's overarching environmental outcome in Recommendation 3. Any requirement to vary these measures will need approval from the relevant regulator and notification to the NT EPA in accordance with Recommendation 2. These measures should only be varied on the basis of further information to inform leading practice. | N/A | Not Applicable | | Noted. |

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| NT EPA Recommendation No. | NT EPA Recommendation | Score | Compliance Level | Evidence | Comments |
|---------------------------|--|-------|------------------------|---|--|
| 13 | <p>Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to conduct a review and synthesis of all water monitoring programs (groundwater and surface water) and implement a revised program that is capable of identifying and quantifying impacts of mining activities and their trends on the environmental values and beneficial uses of the McArthur River to measure performance against the NT EPA's overarching environmental outcome in Recommendation 3.</p> <p>The revised water monitoring program shall:</p> | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 26. | <p>Operator future requirement: within 12 months of the authorisation of the OMP.</p> <p>Included in early version of AMP. A revised water monitoring program is included in the 2020 MMP. It is appropriate for the current status of the project.</p> <p>Independent Monitor required to review.</p> |
| 13.i | quantify loads of lead and zinc entering the McArthur River each year | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 27.b).i. | |
| 13.ii | quantify impacts to water quality and trends in groundwater and surface water at appropriate points including upstream and downstream of the mine to determine that objectives and targets are being met, including the effectiveness of source control to reduce loads as low as is reasonably practicable | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 27.b).ii. | |
| 13.iii | develop appropriate future trigger values for waterways on the mine site and the McArthur River in accordance with the ANZECC 2000 Guidelines. In the interim, the trigger values in the most current WDL shall be used. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 27.b).iii. | |
| 13 continued | The review and revision of the water monitoring program shall be conducted to the satisfaction of the relevant regulator/s and the NT EPA as part of the broader monitoring review provided for in Recommendation 27 and incorporated into the authorised Adaptive Management Plan. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 27.a). | |
| 13 continued | The results of the monitoring program are to be reported by the Proponent to the relevant regulator and audited by the Independent Monitor every three years. The monitoring report together with the Independent Monitor's audit report shall be made available to government agencies, the Community Reference Group and publicly on the Proponent's and relevant regulators' websites. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 27.g).i, ii and iii | Note: Authorisation Condition 27.g).iii. only requires publishing on the Operator's website, not making the reports available in any other format or on the DITT's website. The condition does not fully reflect the NT EPA recommendation wording. However the DITT intends to publish the Operator reporting on their website. Subsequent to the audit period, the AMP Review Report by the Independent Monitor dated 15May2020 has been uploaded to the DITT's website. |
| 14 | Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to prepare and implement a research and investigation program designed to determine the chronic and acute impacts to biota of mine-derived contaminants using recognised and accepted ecotoxicological testing. The program shall be designed to integrate with the monitoring program to be developed in accordance with Recommendation 15. Results of the program shall be used to inform trigger criteria in the Adaptive Management Plan. | 3 | Part Compliance (High) | <p>Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 28.</p> <p>Operator requirement is a future requirement within 18 months of the OMP approval.</p> <p>No specific reference to informing trigger criteria in the Adaptive Management Plan in the Authorisation 12Nov20, Condition 28.</p> | <p>Operator future requirement: to submit ecotoxicological research and investigation program within 18 months of the approval of the OMP.</p> <p>Operator has commissioned experts to undertake the required studies to satisfy this requirement (Ecotoxicological program); Mine Lakes Consulting commissioned. At the March 2020 site visit, accompanied by the Independent Monitor, Operator provided updates that outlined works completed and works remaining.</p> <p>Condition 28. a) states - the results of this program must be integrated with other relevant programs (stet) monitoring programs and management plans. This may include the AMP.</p> <p>Condition 44 requires within 18 months of the authorisation of the OMP the Operator must undertake a synthesis of all environmental monitoring and the revised monitoring programs must Condition 44. c) be incorporated in the AMP. This may include the ecotoxicological monitoring program.</p> <p>OFI: Incorporate into DITT processes a mechanism to confirm that "the results of the ecotoxicological program shall be used to inform trigger criteria in the AMP"</p> |

NT EPA Recommendations Compliance Workbook - 2021 Department of Industry, Tourism and Trade (DITT)

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| NT EPA Recommendation No. | NT EPA Recommendation | Score | Compliance Level | Evidence | Comments |
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| 14 continued | The program shall be prepared and implemented to the satisfaction of the Department of Environment and Natural Resources, and the Australian Government Department of the Environment and Energy. | 3 | Part Compliance (High) | Confirmed part condition in Authorisation 0059 dated 13Nov20 - Condition 28.a). No reference in the Authorisation to DEPWS (formerly DENR) or the Australian Government DAWE (formerly the Department of Environment and Energy). | OFI: Incorporate into DITT processes consultation with other government agencies on the preparation and implementation of the eEcotoxicological program e.g. NT DEPWS and Commonwealth DAWE. |
| 15 | Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to implement an aquatic ecosystem monitoring program based on improved understanding of aquatic ecosystems in the McArthur River including flow requirements and available Dry season habitat. The program shall be designed to assess impacts from the mine on: | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 29. | Operator future requirement, within 18 months of the approval of the OMP. Note: The program will be reviewed over time as part of ongoing oversight of the Operator's performance. DITT will seek evidence from the Operator to ensure the plan developed meets the relevant regulator's expectations. |
| 15.i | water levels in refuge pools/waterholes, upstream and downstream of the mine, including in the McArthur River diversion channel | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 29.a. | |
| 15.ii | water quality in refuge pools/waterholes in the Dry season | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 29.b. | |
| 15.iii | the health of aquatic biota in the McArthur River using non-lethal sampling methods. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 29.c. | |
| 15 continued | The monitoring program shall be prepared and implemented to the satisfaction of the Department of Environment and Natural Resources, and the Australian Government Department of the Environment and Energy. | 3 | Part Compliance (High) | Confirmed part condition in Authorisation 0059 dated 13Nov20 - Condition 29.e). No reference in the Authorisation to DEPWS (formerly DENR) or the Australian Government DAWE (formerly the Department of Environment and Energy). | OFI: Incorporate into DITT processes consultation with other government agencies on the preparation and implementation of the aquatic ecosystem monitoring program e.g. NT DEPWS and DAWE. |
| 15 continued | The monitoring program shall be designed to integrate with a revised monitoring program provided for in Recommendation 27 and incorporated into the Adaptive Management Plan, to be developed in accordance with Recommendation 28 | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 29.d). includes reference to Authorisation Condition 45 - AMP. | |
| 15 continued | The results of the monitoring program are to be reported by the Proponent and audited by the Independent Monitor every three years. The monitoring report together with the Independent Monitor's audit report shall be made available to government agencies and the community on the Proponent's and relevant regulators' websites. | 3 | Part Compliance (High) | While part of these requirements may be broadly captured and reviewed every three years under the Adaptive Management Plan auditing conditions 45 and 46 making the report publicly available is not specifically stated in the Authorisation conditions. | OFI: Incorporate into DITT processes a mechanism for the Operator's three-yearly report on the Aquatic Ecosystem Monitoring Program, and the Independent Monitor's audit of this report, to be made publicly available on DITT website. |
| 16 | Approvals or decisions in relation to the Proposal, shall include conditions that require the Proponent to conduct all works in accordance with a valid Certificate issued in accordance with the Northern Territory Aboriginal Sacred Sites Act. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 30). Condition in Authorisation 0059 dated 15Aug2019 - 5 (broad requirement to meet all legislation). | Authorisation conditioned such that Operator must provide evidence of a valid AAPA certificate, as appropriate for proposed work. There are current AAPA certificates for current mining footprint but additional certificates will need to be obtained for additional disturbance. DITT not aware of any breaches. |
| 17 | Prior to any approvals for the Proposal, the Proponent and the responsible Minister shall consult with the Minister for Tourism and Culture on an alternative design of the NOEF that would preserve archaeological site MRM4. Any alternative design of the NOEF must achieve the same environmental outcomes as the currently proposed NOEF, taking into consideration the recommendations in this report. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov21 - Condition 31). | Works proposed in the 2020 MMP do not disturb or impact on MRM4. There is no development in or proposed in the MRM4 area. When appropriate DITT will facilitate consultation with the Minister for Arts, Culture and Heritage (also see NT EPA recommendation 18). Authorisation 0059 to require mining activities to avoid MRM4 whilst consultation occurs with the responsible NT agency (Minister for Arts, Culture and Heritage) to finalise an agreed NOEF design. |

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| NT EPA Recommendation No. | NT EPA Recommendation | Score | Compliance Level | Evidence | Comments |
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| 18 | Approvals or decisions in relation to the Proposal, shall include conditions that require the Proponent to demonstrate to the responsible Minister, and the AAPA or the Minister for Tourism and Culture (where relevant), that it has undertaken a thorough process to identify, inform and consult with the appropriate custodians and traditional owners with an interest in lands that would be or may be affected by the Proposal. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov21 - Condition 32. | Operator future requirement: within 6 months of the authorisation of the OMP provide a Tradition Owner consultation report. Works proposed in the 2020 MMP to extend above the 80m height for the Waste Rock emplacement facilities are subject to Operator obtaining valid AAPA certificates. The Authorisation includes condition/s requiring Operator to demonstrate evidence of consultation going forward. A Stakeholder Engagement Plan was provided to the Minister by Operator in February 2020. |
| 19 | Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to monitor sulfur dioxide within 1 km downwind of the NOEF, to the satisfaction of the NT EPA and relevant regulator. The objective of this monitoring program should be to identify any increase in sulfur dioxide emissions from the NOEF and any potential air quality risk to human health outside the MRM leases for all stages of the Proposal. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov21 - Condition 33. Note: the condition doesn't specify the location within 1km downwind of the NOEF but does require it at an appropriate location between NOEF and sensitive receptors determined in consultation with NT EPA. | Operator future requirement to update AQMP within 12 months of the authorisation of the OMP. Monitoring was undertaken at Devil's Spring and Borrooloola during the audit period. Air quality matters detailed in the 2020 MMP have been assessed as appropriate. Note Operator has already implemented a revised Air Quality Management Plan based on consultant advice in response to historical sulphur dioxide emissions from NOEF. This plan is reviewed and improved upon, where required, as part of annual EMR report. |
| 19 continued | The monitoring program shall be reviewed in accordance with Recommendation 27 and incorporated into the Adaptive Management Plan, to be developed in accordance with Recommendation 28. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 44, synthesis of all environmental monitoring programs (Recommendation 27) and Condition 93 - Adaptive Management Plan (Recommendation 28). | |
| 19 continued | The results of the monitoring program are to be reported by the Proponent to the relevant regulator and audited by the Independent Monitor every three years. The monitoring report together with the Independent Monitor's audit report shall be made available to government agencies, the Community Reference Group and publicly on the Proponent's and regulator's websites. | 3 | Part Compliance (High) | Confirmed condition in Authorisation 0059 dated 13Nov20 -Condition 35.a, made available on the Operator's website. No reference to requirement for air quality management plan (sulphur dioxide) to be audited by the Independent Monitor. | Operator future requirement for the AQMP report within 6 months of the authorisation of the OMP. Air Quality Management Plan was reviewed by the Independent Monitor as part of the AMP review 15May20. OFI: Update a future Authorisation to include reference to the results of the air quality monitoring plan to be audited by the Independent Monitor every three years. |
| 20 | Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to: | | - | | |
| 20.i | continue a monitoring program, to the satisfaction of the NT EPA on advice of the Chief Health Officer, to determine if aquatic fauna obtained from any reach of the McArthur River is safe to eat during all stages of the Proposal | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 36. | Operator future requirement within 24 months of authorisation of OMP. |
| 20.ii | publicly report the results of monitoring, including at appropriate locations in the region | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 36.c) | Conditions included in Authorisation 0059 address this NT EPA recommendation (Condition 36c), which require public reporting of the monitoring results, including at appropriate locations in the Borrooloola region. DITT advised it will identify an appropriate medium for communicating the monitoring results. This may, for example, be achieved as part of addressing NT EPA recommendation 25, i.e. publishing via the DITT website and in hardcopy at various locations in the Borrooloola community. OBS: Although not required during the audit period, it may be of benefit to make publicly available the results of monitoring in relation to aquatic fauna obtained from the McArthur River, including at appropriate locations in the region, to communicate river health. |

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| 20.iii | maintain signage at waterways within the MRM site advising that fishing and harvesting of aquatic food species is prohibited, until the waterways recover and the risk of contamination from consumption of this aquatic fauna is negligible. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 36.d) and refers to condition 62. The wording on the signage differs from Conditions 62. b). wording requirement "fishing and harvesting of aquatic food species is prohibited", which is specific wording from the Chief Health Officer. Warning Signage Register 2019 provided by Operator showed photos of the "no unauthorised entry" wording on signage. | Letter from Operator (dated: 04Feb2015) to Chief Health Officer advising of the proposed wording to be used on signage. Not aware of any Chief Health Officer response. OFI: Operator to obtain agreement with NT EPA/Chief Health Officer that the alternative wording used on waterway signage "no unauthorised entry" at mining lease boundary is acceptable. |
| 21 | Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to develop a non-lethal monitoring program for sawfish and from the results, define a specific (measurable and time-bound) threshold for a significant decline in sawfish movement (based on data) that would trigger investigation and implementation of management measures. This threshold is to be developed to the satisfaction of the Australian Government Department of the Environment and Energy and the Department of Environment and Natural Resources, within 12 months of authorisation of the Proposal. | 3 | Part Compliance (High) | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 37 requires non-lethal monitoring, setting performance indicators to abate a significant decline and trigger levels for investigation and implementation of management measures, within 24 months of the approval of the OMP. Authorisation does not contain the requirement for development of the submission within 12 months of authorisation of the Proposal. It also does not reference the satisfaction of the Australian Government Department of the Environment and Energy. | Operator has partially actioned earlier than required by implementing sawfish transponder monitoring. Operator future requirement within 24 months of the authorisation of the OMP. DITT advises 24 month timeframe is in recognition of adequate time to undertake a quality review including incorporating results from other relevant studies. OFI: Incorporate a requirement into DITT processes to consult other government agencies on the development of non-lethal monitoring program for sawfish monitoring program, including trigger threshold for investigation and management measures, e.g. NT DEPWS and DAWE. |
| 22 | Approvals and decisions in relation to the Proposal shall contain conditions that require environmental objectives to be established and achieved in case the mine site enters into care and maintenance. Environmental objectives should be reviewed by the relevant independent panel/s and approved by the relevant regulator/s after consultation with the Community Reference Group, custodians and traditional owners. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov21 - Condition 38. | Operator future requirement, triggered by and within 6 months of the establishment of the Independent Panel(s) of Experts (Condition 21). DITT is working to establish the Community Reference Group (NT EPA recommendation 26), to facilitate consultation with custodians and traditional owners to inform the development of the care and maintenance plan and independent panel (NT EPA recommendation 23). Consultation with the Community Reference Group, traditional custodians needs to be progressed. |
| 23 | Approvals and decisions in relation to the proposal will include conditions requiring the Proponent to provide funding to establish and operate a panel of independent experts to: | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 21. | Independent panel of experts, not active during audit period. Planning for independent expert panel establishment underway. Developing a framework for the establishment of the independent expert panels for consultation with relevant government agencies. Panel's Draft Terms of Reference were under review in September 2021. |
| 23.i | review and advise on the development of closure and care and maintenance strategies for mine site domains, and the Proponent's trajectory towards achieving agreed closure objectives | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Conditions 38 and 39. | DITT, with support from the Operator, is managing the process to establish and operate an independent panel of experts, including developing a Terms of Reference, for NOEF, TSF and mine closure planning. Operator future requirement to submit an updated Mine Closure Plan with each MMP from the date of authorisation of the OMP. |
| 23.ii | review the risk of potential catastrophic failure of the mine levee wall and the McArthur River diversion channel in view of future closure objectives. | 3 | Part Compliance (High) | No reference to catastrophic failure of mine levee wall and McArthur River diversion channel in Authorisation care and maintenance Conditions 38 or 39. | Care and Maintenance Plan to be developed may consider the mine levee wall and the McArthur River diversion but there is no specific requirement in the Authorisation for this content. DITT advised this requirement will be captured in the terms of reference for the yet to be established Mine Closure independent panel. OFI: Incorporate a requirement into DITT processes for the independent panel to review the risk of failure of the mine levee wall and the McArthur River diversion channel as part of the closure plan objectives. |

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| 23 continued | The panel shall be formed: | | - | | |
| 23.iii | with an independent chair, appointed by the responsible Minister in consultation with the Minister for Environment and Natural Resources | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 21. Reference to Independent Chair has been removed from Authorisation 13Nov21. | Draft Terms of Reference for NOEF were circulated for comment to DITT, DEPAWS, NT EPA and DAWE in July 2021. Note: Future audit task to check that the independent chair recommendations are include in the independent panel terms of reference (2022 audit). |
| 23.iv | on the advice of the relevant regulator/s and the Proponent. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 21. | Draft Terms of Reference for NOEF were circulated for comment to DITT, DEPAWS, NT EPA and DAWE in July 2021. Note: Future audit task to check that consultation responses on the formation of the panel have been received from DITT, DEPAWS, DAWE and Operator (2022 audit). |
| 23 continued | The panel shall conduct a rolling 3-5 year review of the mine closure plan to assess the trajectory of closure options for MRM site domains and provide a report to the relevant regulator and the Independent Monitor that is made available to the Proponent, government agencies, the Community Reference Group and the public. | 3 | Part Compliance (High) | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 96. No reference to rolling 3 to 5 year review, however there is a requirement to update the mine closure plan as closure concepts are developed. No reference to providing mine closure plan to Independent Monitor, CRG and the public. Note a review of the Mine Closure Plan is part of the Independent Monitor's scope of work. | DITT, with support from the Operator, is managing the process to establish and operate an independent panel of experts, including developing a Terms of Reference, for NOEF, TSF and mine closure planning. Draft Terms of Reference for NOEF were circulated for comment to DITT, DEPWS, NT EPA and DAWE in July 2021. DITT advised this requirement will be captured in the terms of reference for the yet to be established Mine Closure independent panel. OFI: Incorporate a requirement into DITT processes for the independent panel to provide a 3-5 yearly review report on the mine closure plan to assess the trajectory of closure options to DITT and the Independent Monitor. To subsequently be made available to the Operator, government agencies, CRG and the public. |
| 23 continued | Terms of Reference for the panel shall set out the terms for roles and responsibilities, membership, timeframe for commencement and scope, reporting obligations and transparency and accountability. The Terms of Reference shall be finalised by the responsible Minister, in consultation with the Minister for Environment and Natural Resources acting on advice from the NT EPA, within 12 months of authorisation of the Proposal. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 21. Reference to terms of reference requirements has been removed from Authorisation 13Nov21. No timeframe for the finalisation of the terms of reference contained in the Authorisation. | Draft Terms of Reference for NOEF were circulated for comment to DITT, DEPAWS, NT EPA and DAWE in July 2021. Note: Future audit task to check NT EPA requirements for the independent panel terms of reference have been included (2022 audit). |
| 23 continued | The structure of the panel and its Terms of Reference shall be reviewed by the Responsible Minister, in consultation with the Minister for Environment and Natural Resources every six years from the date the Terms of Reference are finalised. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 21. Reference to consultation with DEPAWS and six yearly review has been removed from Authorisation 13Nov21. | Draft Terms of Reference for NOEF were circulated for comment to DITT, DEPAWS, NT EPA and DAWE in July 2021. Note: Future audit task to check requirement for a review of the structure of the panel, every six years, by the DITT Minister in consultation with the DEPAWS Minister have been included in the terms of reference (2022 audit). |
| 24 | An independent third-party assessment of the security that must be provided by the Proponent or Operator for rehabilitation of the Authorised activities at the McArthur River Mine site shall be conducted by a qualified person approved by the responsible Minister. The security amount shall be sufficient to secure the site in a manner that meets the NT EPA's overarching environmental outcome. The independently calculated amount and final amount of the security shall be published on the relevant regulator's website with any variation between the amounts explained. | 3 | Part Compliance (High) | Confirmed condition in Authorisation 0059 dated 13Nov21 - Conditions 40 and 41. Note the condition does not mention the security needing to be sufficient to secure the site in a manner that meets the NT EPA's overarching environmental outcome. DITT advises this is the role of DITT in administering the MMA and security amount is approved by the Minister. Independent Monitor sighted the security held as at 19 February 2021 published on the DITT website. | Operator nominated a third party assessor which has been approved by the Minister accepted by the DITT. The third party review of the security was completed as part of the 2020 MMP approval and is required every three years thereafter. DITT advised the Independent Monitor that Northern Territory Government has committed to make mine security amounts publicly available. Currently the information published is the security amounts for major mines in the NT, including McArthur River Mine, with the individual mine's security amount held listed on the DITT's website. No OFI prepared as DITT advised it is not appropriate to provide the details of each assessment the on the Regulator's website or to explain any variation between the independently calculated and final security amount. |

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| 24 continued | The security amount shall be reassessed every three years if an assessment of the security amount by the regulator has been undertaken during that time in accordance with the Authorisation for the McArthur River Mine. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 40. | Operator future requirement for the security assessment is to occur every three years if the security has been recalculated or adjusted. |
| 25 | The Mining Management Plan (overview and environmental management section) and the Authorisation for the McArthur River Mine Overburden Management Project shall be made available to the public on the relevant regulator's website and in hard copy at an appropriate location in Borroloola (e.g. Borroloola Public Library). | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - 42, public copy of the MMP with commercially sensitive information removed. | Triggered by 2020 MMP approval. DITT advised an MMP hard copy provided to Borroloola Library. Sighted copy of email 07Oct20 from DITT confirming Borroloola Community Library postal address to send MMP hardcopy. |
| 26 | Approvals and decisions in relation to the Proposal shall include conditions that require a Community Reference Group to be established that has the following roles: | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 43. Note: the subparts of this NT EPA recommendation are not stated in the 13Nov20 Condition no longer states "in accordance with the relevant NT EPA Recommendation" but have been captured in CRG draft terms of reference, refer to 26.i. to 26.v. and 26. continued below. | Operator future requirement, triggered by 2020 MMP approval. No timeframe for CRG establishment but DITT has prioritised this activity. Draft terms of reference for the CRG (version 02 dated 28May21) prepared by DITT were endorsed by the NT EPA (letter dated 06Jun21) and are available on DITT website. Public advertising for CRG members nominations closed in 31Oct21 and provided the opportunity for stakeholders to present nominations for Minister approval (members and chairperson). |
| 26.i | communicate the mine's performance to the local and broader NT community | 4 | Full Compliance | Confirmed in CRG Draft Terms of Reference, Version 02, 28May21 - Section 2. Purpose, dot point No.1. | |
| 26.ii | advise on the most appropriate method for the Proponent to report information that is required to be made publicly available | 4 | Full Compliance | Confirmed in CRG Draft Terms of Reference, Version 02, 28May21 - Section 2. Purpose, dot point No.2. | |
| 26.iii | provide a structured forum for review and discussion in setting environmental objectives for adaptive management, operation, care and maintenance, mine closure and the evaluation and costing of mine closure options | 4 | Full Compliance | Confirmed in CRG Draft Terms of Reference, Version 02, 28May21 - Section 2. Purpose, dot point No.3. | |
| 26.iv | provide a forum for discussing economic and social post-mining impacts | 4 | Full Compliance | Confirmed in CRG Draft Terms of Reference, Version 02, 28May21 - Section 2. Purpose, dot point No.4. | |
| 26.v | translate technical information into communication that is readily understood by the community, clear statements of outcomes to be achieved and progress in achieving them for both operational and closure matters. | 4 | Full Compliance | Confirmed in CRG Draft Terms of Reference, Version 02, 28May21 - Section 2. Purpose, dot point No.5. | |
| 26 continued | The Group shall be chaired by an independent person appointed by government, who is held in high regard in civic life and has expertise in taking the community interests into account and experience in the position of chair. | 4 | Full Compliance | Confirmed in CRG Draft Terms of Reference, Version 02, 28May21 - Section 4. Membership, paragraph No.1. | |
| 26 continued | The Group shall comprise members who represent the local community and broader Northern Territory community, as well as key stakeholders, particularly custodians and Traditional Owners. | 4 | Full Compliance | Confirmed in CRG Draft Terms of Reference, Version 02, 28May21 - Section 4. Membership, paragraph No.2. | |
| 26 continued | A Terms of Reference for the Group shall be developed to the satisfaction of the NT EPA and agreed by the relevant regulator/s and the Department of the Chief Minister. Details regarding the establishment of the Community Reference Group, including roles and responsibilities, membership, timeframe for commencement and scope, reporting obligations and accountability should be decided within 12 months of all approvals being received for the Proposal. | 4 | Full Compliance | Draft terms of reference for the CRG (version 02 dated 28may21) prepared by DITT were endorsed by the NT EPA 31May21 (letter dated 06Jun21) and are available on DITT website. No reference to a timeframe for the establishment of the CRG in the Authorisation 13 Nov2021. | |

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| 26 continued | The structure of the Group and its Terms of Reference shall be reviewed every six years from the date the Terms of Reference are finalised. | 4 | Full Compliance | Confirmed in CRG Draft Terms of Reference, Version 02, 28May21 - Section 9. Period of review, paragraph No.1. | |
| 27 | <p>Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to conduct a complete review and synthesis of all monitoring programs that assess impacts of mining activities on the environmental values and beneficial uses of the McArthur River, in accordance with the NT EPA's overarching environmental outcome in Recommendation 3. The revised monitoring program shall be reviewed by the independent panel/s and Independent Monitor within nine months of authorisation of the Proposal, and then approved by the relevant regulator/s.</p> <p>The revised monitoring program shall be incorporated into the Adaptive Management Plan.</p> | 3 | Part Compliance (High) | <p>Confirmed condition in Authorisation 0059 dated 13Nov20 - 44.</p> <p>The Condition 44 does not require the review by the Independent Panel/s and Independent Monitor within 9 months of authorisation of the Proposal, instead it states within 18 months of the authorisation.</p> <p>No reference to review by the independent panel or the Independent Monitor. However, revised monitoring program is required to be incorporated into the AMP which as per Condition 45.b). must be reviewed by the Independent Monitor and updated with inputs from the CRG</p> | <p>Operator future requirement within 18 months of the authorisation of the OMP.</p> <p>Operator has provided a revised monitoring plan/s for surface water, groundwater, air quality and sediment as part of the 2020 MMP for assessment under the MMA. The Independent Monitor has conducted a review of the overarching Adaptive Management Plan 15May20.</p> <p>Dust, water (surface water, groundwater and fluvial sediment), air quality, vegetation, terrestrial fauna, aquatic fauna, heritage and sacred sites management plans to be revised.</p> <p>DITT advises 18 month timeframe is in recognition of adequate time to undertake a quality review including incorporating results from other relevant studies.</p> <p>OFl: Incorporate into DITT processes a mechanism for the Operator's review and synthesis of all monitoring programs and revised monitoring program to be reviewed by the independent panel(s) and Independent Monitor and be approved by the relevant regulators, e.g. DITT.</p> |
| 28 | Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to prepare an Adaptive Management Plan that includes the following key elements: | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 45. | <p>Operator future requirement within 18 months of the authorisation of the MMP.</p> <p>Review of the AMP complete and Independent Monitor report provided to the DIT, 15 May 2020.</p> <p>Independent Monitor AMP report has been made available to the public on the DITT website (after the audit period).</p> |
| 28.i | clear, measurable environmental objectives for all significant environmental risks and potential impacts | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 45.i. | |
| 28.ii | measurable performance indicators to show that objectives are on target to be met | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 45.ii. | |
| 28.iii | pre-determined triggers to warn of potential for performance indicators to be exceeded, as informed by monitoring | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 45.iii. | |
| 28.iv | pre-determined, realistic and achievable contingency interventions to maintain performance indicators if triggers are consistently exceeded | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 45.iv. | |
| 28.v | clearly defined management measures/actions that are capable of being implemented in a timely way to meet performance indicators and environmental objectives | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 45.v. | |
| 28.vi | monitoring in accordance with relevant Recommendations in this Report to determine whether management measures are effective and to inform the need for adjustments to management measures or need for alternatives | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 45.vi. | |
| 28.vii | a continual feedback system to ensure appropriate actions are initiated when triggered and environmental objectives are always being met | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 15Aug2019 - 131.vii. | |
| 28.viii | continual development of new management actions as required based on knowledge gained from experience at the site and elsewhere across industry. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 45.viii. | |

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| 28 continued | All key elements should be auditable. Performance indicators, triggers and actions in the Adaptive Management Plan are aimed at ensuring the specified objectives are met. | 4 | Full Compliance | The AMP is required by Condition 45 in Authorisation 0059 dated 13Nov2020 and is therefore auditable. | Although the requirement for audibility are not specifically stated in a Authorisation condition the elements required in the AMP are listed in the Authorisation which is part of the Independent Monitor's scope to audit. AMP Table 1 summarises the key elements and references the section where these are addressed. |
| 28 continued | Before approvals or decisions are given or made for the Proposal, the Adaptive Management Plan shall be reviewed by the Independent Monitor or an appropriately qualified, independent third party, and the review findings and plan provided to relevant regulator/s, the NT EPA, the Community Reference Group and be made available to the public. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 45.b). Note: CRG not in existence at time decision on proposal. | Note: Operator prepared the AMP 31Jan2020. IM's AMP review report was completed 15May2020 and submitted to DITT prior to approval or decision on the proposal on 13Nov2020. Independent Monitor AMP review publicly available on DITT website. |
| 29 | The Authorisation for the Proposal must provide for approval, implementation and review of the Adaptive Management Plan. To ensure clarity and enforceability, conditions of the Authorisation must: | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 46. | Operator future requirement within 18 months of the authorisation of the OMP. Conditions included in the Authorisation to provide for approval, implementation and review of the Adaptive Management Plan. Compliance monitoring will be ongoing |
| 29.i | clearly set out the required management objectives and performance indicators | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 46.a). | |
| 29.ii | provide clarity on the triggers for changes to management actions, and responsibility and evidentiary basis for decision-making | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 46.b). | |
| 29.iii | establish the timeframe for initiation of certain actions if triggers are exceeded, including decisions to discontinue an activity and clarify responsibility and evidentiary basis for decision-making | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 46.c). | |
| 29.iv | establish a process for adjusting triggers that includes the regulator | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 46.d). | |
| 29.v | establish transparent monitoring, reporting and review requirements | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 46.e). | |
| 29.vi | establish processes to ensure transparency and stakeholder engagement in Adaptive Management Plan design and implementation | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - Condition 46.f). | |
| 29.vii | set out the mechanism for periodic review and approval of amendments to the plan. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - 46.g) set out a mechanism for periodic review by the IM not exceeding a frequency of every three years. 46. h) Any amendments must be provided to DITT for re-approval. | |
| 29 continued | The Adaptive Management Plan and its implementation must be reviewed by the Independent Monitor every three years, with the outcomes of the review made available to the relevant regulator/s, the NT EPA, the Community Reference Group and the public. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 - 46.g). AMP review by IM every three years. No reference to the NT EPA in this condition sub-part. | There is no reference to the NT EPA in the condition, however, DITT advised they would provide AMP review findings to the NT EPA and CRG. The Independent Monitors AMP review was uploaded to DITT website 15May20. |

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| 30 | Where trends indicate that performance indicators and environmental objectives will not or are unlikely to be met by implementing the adaptive management plan, the NT EPA must be notified of any resultant changes to the Proposal required under clause 14A of the Environmental Assessment Administrative Procedures. | 4 | Full Compliance | Confirmed condition in Authorisation 0059 dated 13Nov20 -Condition 47. | Operator future requirement for trends and AMP, triggered by and within 18 months of the authorisation of the OMP. Note: Condition included in the Authorisation, as a second order line of compliance. The action is a requirement under NT legislation as the Environmental Assessment Act applies. |