

Mount Thorley Warkworth Complex (SSD-6464 and SSD-6465) – Independent Environmental Audit 2023 – Responses to Audit Findings

| NON-COMPLIANCE RECOMMENDATIONS AND RESPONSES | | | | |
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| Ref | Compliance Requirement | Independent Audit Finding | Independent Audit Recommendation | MTW Response |
| SSD 6464 | | | | |
| S2 C9 | <p>By the end of January 2017, unless the Planning Secretary agrees otherwise, the Applicant must surrender the existing development consent (DA-300-9-2002-i) for the Warkworth mine in accordance with Section 104A of the EP&A Act.</p> <p>Following the commencement of development under this consent, the conditions of this consent shall prevail to the extent of any inconsistency with the conditions of DA-300-9-2002-i.</p> | <p>Reported as non-compliant in the 2020 Annual Review. No documentation was available to the auditor that confirmed that the existing consents had been surrendered.</p> | <p>Work with DPE to close out the surrender of the development consents.</p> | <p>This is noted in the audit report as an administrative non-compliance.</p> <p>An application to surrender the development consent DA 300-9-2002i was submitted in June 2017 and progressed with correspondence with DPE up to 2021.</p> <p>MTW will continue to work with DPE to progress surrender of the relevant consent during the 2023 Annual Review period (By December 2023).</p> |
| S3 C5 | <p>From 1 January 2017, except for the land in Table 1, the Applicant must ensure that the noise generated by the Development does not exceed the noise criteria in Table 3 at any residence on privately owned land.</p> | <p>Section 6.2.2/3 of each Annual Review presents the results of the noise monthly noise monitoring undertaken by independent consultants.</p> <p>A summary of compliance is as follows:</p> <p>2020 – no non compliances reported</p> <p>2021 - no non compliances reported</p> <p>2022 – six exceedances of the noise criteria were recorded</p> <p>One hundred and fifty-seven (157) noise complaints were received during the audit period. This consisted of 98 complaints in 2020, 49 in 2021, 47 in 2022 and 11 in 2023 (to the end of April. The Auditor notes that that 112 of the 162 (69%) noise complaints were from five residents.</p> <p>While there has been an improvement over the life of the project in the number of complaints (325 recorded in 2016), a contributing factor to the higher number of complaints during the early operational stages may potentially be attributed to a higher proportion of activities closer to ground level, with improvements achieved over the project life due to attenuation provided by the pit depth, mine walls and in acoustic vehicle technology.</p> <p>Prior to each shift, a predictive tool is utilised to assess potential impacts taking into account the prevailing meteorological conditions.</p> <p>MTW implements noise management and monitoring methods to identify if there is a potential issue and takes rectification action to modify operations where indicated.</p> | <p>Review current predictive tools and processes against available models that are currently being utilised in both the mining and construction industries with the objective of:</p> <ul style="list-style-type: none"> Identifying areas on site that have the potential to impact noise sensitive receivers; Provides a Noise Impact Prediction Model that can be used by MTW to plan works in those areas with the objective to proactively ensure that noise from plant and equipment does not cause annoyance to local community and exceed the relevant criteria. | <p>MTW will review current and other available noise predictive tools used with the aim to seek to further complement the already rigorous planning, noise monitoring and management effort that is used at MTW. Complete by December 2023.</p> |

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| | | <p>Following the receipt of noise complaints, a CRO is deployed to make observations and measure noise levels (5-minute sample). In many instances the CROs observations have verified the complaint and the noise readings have indicated that the noise levels from the mine were exceeding the relevant criteria.</p> <p>Where these potential exceedances are identified, MTW review the works being undertaken at the likely exceedance source and make changes to those works to reduce noise emissions.</p> <p>The Auditor understands that noise modelling of future works that may impact sensitive receivers is not routinely undertaken.</p> | | |
| S3 C19a and c | <p>The Applicant must:</p> <p>a) implement all reasonable and feasible measures to minimise the:</p> <ul style="list-style-type: none"> • odour, fume and dust emissions of the development; and • release of greenhouse gas emissions from the development; <p>c) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see note d to Tables 5-7 above);</p> | <p>Fifty-eight dust-related complaints were received during the audit period.</p> <p>No exceedances in dust criteria were reported during the audit period.</p> <p>Significant areas of the site have been cleared and progressive rehabilitation works are behind schedule. The Auditor also observed significant areas, that while not ready for final rehabilitation, would benefit from temporary stabilisation to help reduce dust emissions during adverse wind conditions.</p> | <p>Increase the rate of progressive rehabilitation works with the objective of meeting the established progressive rehabilitation targets.</p> <p>Prepare and implement a program for the stabilisation of unsealed / disturbed areas of the site including stockpiles, finished landforms, and disturbed areas that are not currently being actively worked / filled). The program should identify and classify all areas of the site that are currently disturbed according to the dust generation potential of those areas and establish clear targets for the stabilisation of those areas (either permanent or temporary) with the objective of meeting the requirements of the Blue Book.</p> | <p>MTW notes that the audit found there were no exceedances in dust criteria reported during the audit period. MTW has a well developed and implemented Air Quality Management Plan and considers that reasonable and feasible controls are being implemented.</p> <p>In relation to rehabilitation progression, MTW acknowledges the benefit rehabilitation progress has for minimising air quality impacts, and undertakes progressive rehabilitation as part of normal mine operations. Refer to SSD-6464 S3 C57 for rehabilitation progression response.</p> <p>The Air Quality Management Plan for MTW includes as a control measures to undertake interim stabilisation works. As an opportunity for improvement, MTW will identify further areas for interim stabilisation and prepare a program for the stabilisation of inactive disturbed areas. Complete by October 2023.</p> |
| S3 C24 | <p>Unless an EPL or the EPA authorises otherwise, the Applicant must ensure that all surface water discharges from the site comply with the:</p> <p>a) discharge limits (both volume and quality) set for the development in any EPL; and</p> | <p>The Annual Returns prepared for the Environment Protection Licence 1376 noted several non-compliances with this condition. Refer to audit schedule for EPL 1376 for details.</p> | <p>A risk assessment and review of the storage capacity of the retention dams be undertaken that takes into account the increasing risk of extreme weather events, including extended duration wet weather patterns.</p> | <p>MTW notes the audit recommendation, and will complete a risk assessment and review of retention dams, including consideration of extended wet periods by December 2023.</p> |
| S3 C26 (Table 8) | <p>Design, install and/or maintain mine water storage infrastructure to ensure no discharge of mine water off-site (except in accordance with condition 24) On-site storages (including</p> | <p>This commitment is included in Table 5.1 of the WMP.</p> <p>There have been two incidents that resulted in the discharge of mine-water.</p> | <p>In relation to the incident on the 4/7/21, no further actions are recommended over and above the actions taken by WML in response to the incident.</p> | <p>Refer to response to SSD-6464 S3 C24.</p> |

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| | mine infrastructure dams and treatment dams) are suitably designed, installed and/or maintained to minimise permeability. Maintain adequate freeboard within the pit void at all times to minimise the risk of discharge to surface waters. | <p>The incident on 4/1/21 was from a water equipment park up area has spilled from a dam into a water course reporting into Wollombi Brook, the incident resulted penalty notices issued by both the DPE and EPA. In response to the Penalty notices, WML prepared an action plan which includes several actions relating to detailed engineering assessment, design and construction of civil infrastructure for improved surface water drainage infrastructure at WML North Pit North. Correspondence from DPE and WML confirms that the detailed design works for the North Pit North drainage improvements were completed in October 2021.</p> <p>The incident on 4/7/22 was reported as an overtopping event during a greater than design rainfall event. It was reported that samples were collected with no environmental harm caused. No further actions to prevent recurrence were proposed by WML.</p> | In response to the incident on the 4/7/22, it is recommended that a risk assessment and review of the storage capacity of the retention dams be undertaken that takes into account the increasing risk of extreme weather events, including extended duration wet weather patterns. | |
| S3 C28 | Within 3 years of the date of commencement of development under this approval, the applicant will retire biodiversity credits of a class and number specified in Tables 9 and 10 below to the satisfaction of BCD. | DPE has yet to approve the retirement of biodiversity credits. However, it is acknowledged that some components such as the provision of supplementary measures (such as funding of research) have been met. | As the retirement of requisite credits is now over 4 years overdue, it is recommended that negotiations with the Department/BCD/BCT to reach an agreeable solution are given priority. | <p>This is noted in the audit report as an administrative non-compliance.</p> <p>Warkworth Mining Ltd (WML) has lodged a modification application for development consent SSD6464 (MOD1), and has been in dialogue with DPE and BCD/BCT regarding this matter. The timeline for resolution is not known, however will continue to be progressed in the 2023 Annual review period. By December 2023.</p> |
| S3 C30 | Within 3 years of the date of commencement of the development under this consent, the Applicant must secure offset areas listed in Table 12 under an in-perpetuity conservation mechanism such as entering into a biobank agreement, in accordance with the relevant provisions of the TSC Act. The direct land-based offsets may be used as offsets for any approval required under the EPBC Act for this development. | <p>Date of commencement was 15 Feb 2016, therefore offset areas were to be secured under an in-perpetuity mechanism 14 February 2019 (i.e. within 3 years of commencement).</p> <p>Despite documentation/correspondence between WML, the Department and BCD since 2018, which has included submission of a modification application to DPE (SSD-6464 MOD1) to address securing of the offsets, this item remains incomplete. actions are currently still being undertaken to reach an agreeable resolution with BCD and the department. However, no written correspondence between WML and the Department/BCD has been sited since the February 2022 correspondence.</p> | As the securing of offset areas under an appropriate mechanism is now over 4 years overdue, it is recommended that negotiations with the Department/BCD/BCT to reach an agreeable solution are given priority. | <p>This is noted in the audit report as an administrative non-compliance.</p> <p>Refer to response to SSD-6464 S3 C28.</p> |
| S3 C34 | Within 12 months of the commencement of the development under this consent, the Applicant must prepare an Integrated Management Plan for the Warkworth Sands Woodland EEC to the satisfaction of BCD. This | Correspondence sighted confirmed that BCD had received the WSW IMP as submitted by WML. Correspondence from BCD confirmed that the review of the 2018 IMP was largely complete. However no subsequent correspondence | Work with BCD to progress the outstanding approval as a high priority. | This is noted in the audit report as an administrative non-compliance. |

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| | plan must be prepared in consultation with the owners of Wambo and Bulga Mines and outline the measures that would be implemented to coordinate management and recovery efforts for the EEC. | sighted and no correspondence/documentation provided regarding approval of WSW IMP provided. It is noted that the WSW IMP has been prepared and provided to BCD. Non-compliance is mainly due to the document not yet being approved by BCD (i.e not approved within 12 months of the commencement of the development. | | MTW will work with BCD to progress toward approval of the WSW IMP during the 2023 Annual review period. By December 2023. |
| S3 C51 | The Applicant must: a) keep records of the amount of coal transported from the development in each calendar year; and b) make these records available on its website at the end of each calendar year. | The 2020 and 2021 Annual Reviews are publicly available on the MTW website; however, the 2022 Annual Review was not on the website at the time of this IEA. Therefore, the coal transport records for 2022 were not publicly available as required by this Condition. The Auditor notes that the 2022 Annual Review had been submitted to DPE but had not yet been approved. | Ensure that the coal transportation records are regularly updated. | Although this is noted in the audit report as an administrative non-compliance, MTW does not agree with this audit finding. Coal transportation records are included in the Annual Review report submitted to DPE. Once the 2022 Annual Review Report is approved by DPE (this typically occurs with the following calendar year), it will be uploaded to the MTW website. |
| S3 C52 a and c | The Applicant must: a) implement all reasonable and feasible measures to minimise the visual off-site lighting impacts of the development, including lighting impacts on road users and impacts of mining voids; b) ensure that all external lighting associated with the development complies with Australian Standard AS4282 (/NT) 1997 - Control of Obtrusive Effects of Outdoor Lighting, or its latest | Environmental induction covers lighting. The Lighting review undertaken in 2020 confirms the offsite lighting impacts was meeting the requirements of this condition. However, 94 lighting complaints were received during the audit period, 75 of those complaints came from three residents. A review of the complaints indicates that the community impacts are from relocatable lighting and mobile plant, but that fixed lighting is not generating complaints. As part of the internal complaint investigations, CROs assess mobile lighting and arrange changes in light locations or direction and that the actions, in general resolve the issues. It is apparent that there is insufficient planning for the location and use of mobile lighting and therefore all reasonable and feasible mitigation measures have not been used. | Ensure that personnel responsible for planning and / or managing night works undertake proactive planning for all after hours works. The planning should identify the optimal lighting setup for those activities and that the implementation of the lighting plans be checked prior to undertaking those activities by CROs or other appropriately trained personnel. | As stated in the audit finding, a review of lighting was conducted in 2020 (by an environmental/engineering consultant) specifically against AS4282, which confirmed that offsite lighting impacts were meeting the requirements of development consent condition S3 C52. In relation to potential lighting impacts from lighting plant, MTW has developed and implements processes involved with the siting and set up of lighting plant designed to minimise the risk of intrusive light impacts. MTW also conducts an inspection of established lighting as part of a routine process by Community Response Officers (CROs) on night shift – this occurs each night as a routine inspection and feedback to operations to make adjustments where necessary, and also will occur in response to community complaint regarding lighting. This represents significant effort regarding management of potential lighting impacts. Whilst there have been community complaints regarding lighting during the audit period (94 complaints), it should be noted that complaints are not widely spread through the community, with 75 complaints originated from three 3 residences. MTW does not agree that the number of complaints should influence a non-compliant audit finding, and contends that the implementation of |

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| | | | | <p>the developed processes represents reasonable and feasible efforts are being applied.</p> <p>Despite the above response to the audit finding, MTW notes the independent auditors position, and as an opportunity for improvement, MTW will undertake review and seek improvement in implementation of existing processes to manage potential lighting impacts from mobile lighting plant. Review process and improvement approach to be implemented by end October 2023.</p> |
| S3 C57 | The Applicant must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim rehabilitation strategies must be employed when areas prone to dust generation cannot yet be permanently rehabilitated. | <p>Annual Review reports detail progress of mine rehabilitation progress against MOP plans.</p> <p>The net rehabilitation progress (i.e. rehabilitation minus rehabilitation disturbance) for the 2015 – 2021 period was 20.4 ha higher than targets.</p> <p>A total of 47.9ha of new rehabilitation was completed during 2022 against a Mining Operations Plan 2022 target of 35ha. 2022 annual report notes that rehabilitation and disturbance forecasts submitted to Resources Regulator (submitted in August 2022) are based on financial year periods and therefore don't align with the calendar year Annual Review reporting period and the misalignment is intended to be corrected in the Forward Program to be submitted in May 2023.</p> | Increase the rate of progressive rehabilitation works with the objective of meeting the established progressive rehabilitation targets. | <p>MTW does undertake progressive rehabilitation as reported in previous Annual Review Reports and as planned in previous Mining Operations Plans (now Rehabilitation Management Plan). MTW has submitted a Forward Program to the Resources Regulator (most recently 1 May 2023) which outlines the next 3 years rehabilitation progress and intends to progress rehabilitation in accordance with the Forward Program in 2023.</p> <p>MTW will conduct dump planning and review progressive rehabilitation schedule with to determine if progressive rehabilitation rates can be increased, with the result to be submitted with the updated Forward Program submission in March 2024.</p> |
| S3 C58 d, and h | <p>d) Describe how the rehabilitation of the site would be integrated with the implementation of the biodiversity offset strategy;</p> <p>h) include interim rehabilitation where necessary to minimise the area exposed for dust generation;</p> | <p>The RMP does not address the integration of the mine site rehabilitation with the biodiversity off-set strategy.</p> <p>The RMP does not address the interim rehabilitation of the site to minimise dust generation.</p> | <p>Review and revise the plan to include the integration of the mine site rehabilitation with the biodiversity off-set strategy.</p> <p>Review and revise the plan to include the interim rehabilitation of the site to minimise dust generation.</p> | <p>This is noted in the audit report as an administrative non-compliance.</p> <p>MTW will review the Biodiversity Management Plan and Rehabilitation Management Plan to include the integration of the mine site rehabilitation with the biodiversity offset strategy. Complete by November 2023.</p> <p>MTW will review the Rehabilitation Management Plan to include the interim rehabilitation of the site to minimise dust generation. Complete by November 2023.</p> |
| SSD-6465 | | | | |
| S3 C17 a and c | The Applicant must: <ul style="list-style-type: none"> a) implement all reasonable and feasible measures to minimise the: | The Air quality management plan describes the air quality management system and procedures including the predictive tools. | Increase the rate of progressive rehabilitation works with the objective of meeting the established progressive rehabilitation targets. | MTW notes that the audit found there were no exceedances in dust criteria reported during the audit period. MTW has a well developed and implemented Air Quality Management Plan and |

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| | <ul style="list-style-type: none"> • odour, fume and dust emissions of the development; and • release of greenhouse gas emissions from the development; <p>minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see note d to Tables 5-7 above); and</p> | <p>Fifty-eight dust-related complaints were received during the audit period.</p> <p>No exceedances in dust criteria were reported during the audit period.</p> <p>Areas of the site are being cleared in preparation for mining, and the disposal of overburden is progressing. The planned progressive rehabilitation works are, however, behind schedule. The Auditor also observed areas, that while not ready for final rehabilitation, would benefit from temporary stabilisation to help reduce dust emissions during adverse wind conditions</p> | <p>Prepare and implement a program for the stabilisation of unsealed / disturbed areas of the site including stockpiles, finished landforms, and disturbed areas that are not currently being actively worked / filled). The program should identify and classify all areas of the site that are currently disturbed according to the dust generation potential of those areas and establish clear targets for the stabilisation of those areas (either permanent or temporary) with the objective of meeting the requirements of the Blue Book.</p> | <p>considers that reasonable and feasible controls are being implemented.</p> <p>Refer to response to SSD-6464 S3 C19.</p> |
| S3 C22 a and b | <p>Unless an EPL or the EPA authorises otherwise, the Applicant must ensure that all surface water discharges from the site comply with the:</p> <p>discharge limits (both volume and quality) set for the development in any EPL; and</p> | <p>The Annual Returns prepared for the Environment Protection Licence 1976 noted several non-compliances with this condition.</p> <ul style="list-style-type: none"> • Dam 1S overtopped as a result of heavy or sustained rainfall which caused significant runoff (2023 AR) • Dam 1S overtopped as a result of heavy or sustained rainfall which caused significant runoff (2021 AR) • Discharge from 9S via spillway to Loders Creek (2021 AR) | <p>A risk assessment and review of the storage capacity of the retention dams be undertaken that takes into account the increasing risk of extreme weather events, including extended duration wet weather patterns.</p> | <p>Refer to response to SSD-6464 S3 C24.</p> |
| | <p>relevant provisions of the POEO Act or Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002</p> | <p>As reported in the 2021 Annual Return for EPL1976, Exceedance of the HRSTS hourly volume discharge limit during analysis of flow data following a discharge event. Note that this incident was not reported in the 2021 Annual Review.</p> | <p>The auditor understands that this discharge was an isolated event and has been investigated. No additional actions are required.</p> | <p>Noted.</p> |
| S3 C27 | <p>Within 3 years of the commencement of development under this consent, unless the Planning Secretary agrees otherwise, the Applicant must enter into a conservation agreement or agreements pursuant to section 698 of the National Parks and Wildlife Act 1974 relating to the Loaders Creek Aboriginal Cultural Heritage Conservation Area, recording the obligations assumed by the Applicant under the conditions of this consent in relation to the conservation area, and register the agreements pursuant to section 69F of the National Parks and Wildlife Act 1974.</p> | <p>The Department approved a request to extend the timeframe for completion of the agreement to the 15th of February 2020, however the agreement was not executed until the 3 November 2022.</p> <p>Whilst the conservation agreement has been entered into in November 2022, registration of the agreements has not been completed pursuant to s69F of the NPW Act.</p> | <p>Finalise the registration of the conservation agreement for Loders Creek.</p> | <p>This is noted in the audit report as an administrative non-compliance.</p> <p>The registration process for the Loders Creek Aboriginal Cultural Heritage Conservation Area conservation agreement that were executed on 3 November 2022 has been progressing in 2023 with MTW and Heritage NSW. This will continue in the 2023 Annual Review Period. By December 2023.</p> |
| S3 C29 a and b | <p>The Applicant must:</p> <p>a) keep records of the amount of coal transported from the development in</p> | <p>The 2020 and 2021 Annual Reviews are publicly available on the MTW website; however, the 2022 Annual Review was not on the website at the time of this IEA. Therefore, the coal transport records for 2022 were not publicly available</p> | <p>Ensure that the coal transportation records are regulatory updated.</p> | <p>Although this is noted in the audit report as an administrative non-compliance, MTW does not agree with this audit finding. Coal transportation records are included in the Annual Review report.</p> |

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| | each calendar year; and b) make these records available on its website at the end of each year. | as required by this Condition. The Auditor notes that the 2022 Annual Review had been submitted to DPE but had not yet been approved. | | Once the 2022 Annual Review Report is approved by DPE (this typically occurs with the following calendar year), it will be uploaded to the MTW website. |
| S3 C30 a and c | The Applicant must: a) implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the development, including lighting impacts on road users and impacts of mining voids; c) ensure that all external lighting associated with the development complies with Australian Standard AS4282 (/NT) 1997 - Control of Obtrusive Effects of Outdoor Lighting, or its latest version; and | Environmental induction covers lighting. The Lighting review undertaken in 2020 confirms the offsite lighting impacts was meeting the requirements of this condition. However, 94 lighting complaints were received during the audit period, 75 of those complaints came from three residents. A review of the complaints indicates that the community impacts are from relocatable lighting and mobile plant, but that fixed lighting is not generating complaints. As part of the internal complaint investigations, CROs assess mobile lighting and arrange changes in light locations or direction and that the actions, in general resolve the issues. It is apparent that there is insufficient planning for the location and use of mobile lighting and therefore all reasonable and feasible mitigation measures have not been used. | Ensure that personnel responsible for planning and / or managing night works undertake proactive planning for all after hours works. The planning should identify the optimal lighting setup for those activities and that the implementation of the lighting plans be checked prior to undertaking those activities by CROs or other appropriately trained personnel. | Refer to response to SSD-6464 S3 C52. |
| S3 C36g | The RMP must: g) include interim rehabilitation where necessary to minimise the area exposed for dust generation; | The RMP does not address the interim rehabilitation of the site to minimise dust generation. | Review and revise the plan to include the interim rehabilitation of the site to minimise dust generation. | This is noted in the audit report as an administrative non-compliance. Temporary stabilisation of unused areas or dump slopes (foreshadowed to be inactive for 6 months or more) is described as a management strategy in the MTW Air Quality Management Plan. MTW will review the Rehabilitation Management Plan to include the interim rehabilitation of the site to minimise dust generation. Complete by November 2023. |
| EPL1376 | | | | |
| L1.1 | Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997. | The following non-compliances (generally associated with over topping of dams) were identified by the Annual Returns • WML Sediment Dams 53N, 54N and WML sump 5N overtopped as a result of heavy rainfall - 5 in total non-compliances reported (2022 AR) • WML Sediment Dams 53N, 54N, 55N, 46N SSD 09 - 4 in total (2021 AR) • WML sediment dams 50N and 53N overtopped as a result of heavy rainfall | A risk assessment and review of the storage capacity of the retention dams be undertaken that takes into account the increasing risk of extreme weather events, including extended duration wet weather patterns. | Refer to response to SSD-6464 S3 C24. |
| O3.1 | The premises must be maintained in a condition which minimizes or prevents the emission of dust from the premises. | Fifty-eight dust-related complaints were received during the audit period. | Increase the rate of progressive rehabilitation works with the objective of meeting the established progressive rehabilitation targets. | Refer to response to SSD-6464 S3 C19. |

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| | | <p>No exceedances in dust criteria were reported during the audit period.</p> <p>Significant areas of the site have been cleared and progressive rehabilitation works are behind schedule. The Auditor also observed significant areas, that while not ready for final rehabilitation, would benefit from temporary stabilisation to help reduce dust emissions during adverse wind conditions.</p> | <p>Prepare and implement a program for the stabilisation of unsealed / disturbed areas of the site including stockpiles, finished landforms, and disturbed areas that are not currently being actively worked / filled). The program should identify and classify all areas of the site that are currently disturbed according to the dust generation potential of those areas and establish clear targets for the stabilisation of those areas (either permanent or temporary) with the objective of meeting the requirements of the Blue Book.</p> | |
| M2.2 | Air Monitoring Requirements: Continuous PM10 monitoring | As reported in the 2020, 2021 and 2022 Annual Returns, EPL 1376 requires continuous monitoring for EPA air monitoring Points 9, 10, 11 and 12. Monitoring data capture was >93%, but not continuous during the reporting period (4 occurrences) | Ensure that all continuous monitoring equipment is operational and well maintained. | Monitoring locations are subject to routine maintenance and calibration and system checks. Data capture from the monitors was greater than 93% for the reporting period(s). Unplanned outages can occur at times with all continuous monitoring equipment. Scheduled maintenance is undertaken which can take monitoring equipment offline for 10 minutes or more due to the nature of the maintenance. Calibrations need to continue to occur and so brief outages will happen from time to time. As the audit noted, this is reported in Annual Returns to EPA. |
| M2.3 | Water and/or Land Monitoring Requirements | As reported in the Annual Returns, EPL water monitoring Points 26, 27, 28 and 30 were unable to be sampled due to sample area either unsafe to access due to rain events resulting in flooding, or being dry at time of sampling (6 occurrences) | Access to the sampling sites was not possible due to adverse weather conditions. No further actions are recommended. | This is noted in the audit report as an administrative non-compliance. Noted. |
| M4.1 | Meteorological Monitoring Requirements | As reported in the 2021 and 2022 Annual Returns, EPL 1376 requires continuous monitoring for Charlton Ridge Meteorological Station. Monitoring data capture was >99%, but not continuous during the reporting period. | Ensure that all continuous monitoring equipment is operational and well maintained. | This is noted in the audit report as an administrative non-compliance. Monitoring locations are subject to routine maintenance and calibration. Data capture from the Charlton Ridge met station was greater than 99% for the reporting period(s). Unplanned outages can occur at times with all continuous monitoring equipment. Scheduled maintenance is undertaken at the met station and this can take monitoring equipment offline for 10 minutes or more due to the nature of the maintenance, which for example necessitates periodic lowering of the mast on which the wind speed and direction sensor is located and changing out sensors/calibrating etc. Calibrations need to continue to occur and so brief outages will happen from time to time. As the audit noted, this is reported in Annual Returns to EPA. |

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| M9.3 | The licence must mark monitoring point(s) 4, with a sign which clearly indicates the name of the licensee, whether the monitoring point is up or down stream of the discharge point(s) and that it is a monitoring point for the Hunter River Salinity Trading Scheme. | The required signage was not installed at the time of this IEA. | Ensure that signage for Monitoring Point 4 is installed. | This is noted in the audit report as an administrative non-compliance. The required signage for Monitoring Point 4 will be installed by October 2023. |
| EPL1976 | | | | |
| L1.1 | Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997. | The following non-compliances were identified by the Annual Returns <ul style="list-style-type: none"> • Dam 1S overtopped as a result of heavy or sustained rainfall which caused significant runoff (2023 AR) • Dam 1S overtopped as a result of heavy or sustained rainfall which caused significant runoff (2021 AR) • Discharge from 9S via spillway to Loders Creek (2021 AR) | A risk assessment and review of the storage capacity of the retention dams be undertaken that takes into account the increasing risk of extreme weather events, including extended duration wet weather patterns. | Refer to response to SSD-6464 S3 C24. |
| L2.1 | For each monitoring/ discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table. | One non-compliance was reported during the audit period. During 2021 one Grab Sample at Licensed Discharge and Monitoring Point 4 exceeded the upper 100 percentile limit for pH. | This single exceedance of the water quality criteria has been investigated. No systemic issues have been identified therefore no further actions are recommended. | Noted. |
| L2.2 | Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges. | One non-compliance was reported during the audit period. During 2021 one Grab Sample at Licensed Discharge and Monitoring Point 4 exceeded the upper 100 percentile limit for pH. | This single exceedance of the water quality criteria has been investigated. No systemic issues have been identified therefore no further actions are recommended. | Noted. |
| 03.1 | The premises must be maintained in a condition which minimizes or prevents the emission of dust from the premises. | Fifty-eight dust-related complaints were received during the audit period. Significant areas of the site have been cleared and progressive rehabilitation works are behind schedule. The Auditor also observed areas, that while not ready for final rehabilitation, would benefit from temporary stabilisation to help reduce dust emissions during adverse wind conditions. While no exceedances in dust criteria were reported during the audit period, the number of dust related complaints and the Auditor's observations relating to rehabilitation and stabilisation indicate that nuisance dust emissions are being generated by the mine. | Increase the rate of progressive rehabilitation works with the objective of meeting the established progressive rehabilitation targets. Prepare and implement a program for the stabilisation of unsealed / disturbed areas of the site including stockpiles, finished landforms, and disturbed areas that are not currently being actively worked / filled). The program should identify and classify all areas of the site that are currently disturbed according to the dust generation potential of those areas and establish clear targets for the stabilisation of those areas (either permanent or temporary) with the objective of meeting the requirements of the Blue Book. | Refer to response to SSD-6464 S3 C19. |

| NON-COMPLIANCE RECOMMENDATIONS AND RESPONSES | | | | |
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| Ref | Compliance Requirement | Independent Audit Finding | Independent Audit Recommendation | MTW Response |
| M2.1 | For each monitoring/ discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns. | <p>During 2021, 2022 and 2023 Table M2.2 requires continuous PM₁₀ monitoring for EPA air monitoring points 10,11,13 and 19. Monitoring data capture was >98% but not continuous during the reporting period.</p> <p>During 2021, 2022 and 2023 Table M2.3 requires continuous monitoring for pH at Point 4 during Discharge Monitoring data capture was >99% but not continuous during the reporting period.</p> <p>During 2021, 2022 and 2023 Table M2.3 requires continuous monitoring for conductivity at Point 4 during Discharge Monitoring data capture was >99% but not continuous during the reporting period.</p> | Ensure that all continuous monitoring equipment is operational and well maintained. | Monitoring locations are subject to routine maintenance and calibration. Data capture from the locations were found to be >98% in the for the reporting period(s). Unplanned outages can occur at times with all continuous monitoring equipment. Scheduled maintenance is undertaken at the continuous monitoring locations and this can take monitoring equipment offline for 10 minutes or more due to the nature of the maintenance. Calibrations need to continue to occur and so brief outages will happen from time to time. As the audit noted, this is reported in Annual Returns to EPA. |
| M4.1 | Meteorological Monitoring Requirements | As reported in the 2021 and 2022 Annual Returns, EPL 1376 requires continuous monitoring for Charlton Ridge Meteorological Station. Monitoring data capture was >99%, but not continuous during the reporting period. | Ensure that all continuous monitoring equipment is operational and well maintained. | Monitoring locations are subject to routine maintenance and calibration. Data capture from the Charlton Ridge met station was greater than 99% for the reporting period(s). Unplanned outages can occur at times with all continuous monitoring equipment. Scheduled maintenance is undertaken at the met station and this can take monitoring equipment offline for 10 minutes or more due to the nature of the maintenance, which for example necessitates periodic lowering of the mast on which the wind speed and direction sensor is located and changing out sensors/calibrating etc. Calibrations need to continue to occur and so brief outages will happen from time to time. As the audit noted, this is reported in Annual Returns to EPA. |
| M7.1 | Requirement to monitor volume or mass. | Table M7.1 requires continuous monitoring for volumetric flow at Point 4 during discharge. During 2021 monitoring data capture was not continuous during the reporting period. | Ensure that all continuous monitoring equipment is operational and well maintained. | Data capture from the discharge point flow meter during discharge was greater than 99% for the reporting period(s). Daily system checks are undertaken on working days to identify and resolve any monitoring issues. The monitors also undergo routine maintenance. As the audit noted, this was reported in the 2021 Annual return to EPA. |
| E1.3 | <p>The licensee must not exceed the hourly volume discharge limit calculated using the following formula, at all discharge point(s) on this licence titled "Discharge of saline water under the Hunter River Salinity Trading Scheme (HRSTS)".</p> <p>$H = V / RRT$</p> | <p>As reported in the 2021 Annual Return an exceedance of the HRSTS hourly volume discharge limit occurred on 20 March 2021. This non-compliance was discovered during the preparation of the 2021 Annual Return.</p> <p>The exceedance event has been reviewed by MTW and the discharge rate modified. No further exceedances have been recorded.</p> | The single volume exceedance has been investigated and appropriate actions taken to prevent future exceedances. No additional actions have been identified. | Noted. |

| NON-COMPLIANCE RECOMMENDATIONS AND RESPONSES | | | | |
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| Ref | Compliance Requirement | Independent Audit Finding | Independent Audit Recommendation | MTW Response |
| Mining Lease Standard Conditions (from July 2022) | | | | |
| D1 C4 | The holder of a mining lease must take all reasonable measures to prevent, or if that is not reasonably practicable, to minimise, harm to the environment caused by activities under the mining lease. | During the audit period (2021) non-complying overflows / discharges of water occurred from dams on both the Mt Thorley and Warkworth mines. These pollution events resulted in the issue of Penalty Notices by the EPA and DPE. For further information refer to Section 7.3 and Condition L1.1 on the EPL Compliance Registers above. | A risk assessment and review of the storage capacity of the retention dams be undertaken that takes into account the increasing risk of extreme weather events, including extended duration wet weather patterns. | Refer to response to SSD-6464 S3 C24. |
| D1 C5 | The holder of a mining lease must rehabilitate land and water in the mining area that is disturbed by activities under the mining lease as soon as reasonably practicable after the disturbance occurs. | This condition is considered to be non-compliant as the predicted/forecast target for 2020 was not met and it is predicted that the forecast for 2023 will not be met. It is acknowledged that several factors, including weather conditions, have resulted in lower rehabilitation than predicted. It is noted however that the the MOP rehabilitation targets were exceeded in both 2021 and 2022. | Continue progressive rehabilitation works with the objective of meeting the established progressive rehabilitation targets | Refer to response to SSD-6464 S3 C57. |
| ML 1412 | | | | |
| 17 | Minimise Dust | Fifty-eight dust-related complaints were received during the audit period. No exceedances in dust criteria were reported during the audit period. Significant areas of the site have been cleared and progressive rehabilitation works are behind schedule. The Auditor also observed significant areas, that while not ready for final rehabilitation, would benefit from temporary stabilisation to help reduce dust emissions during adverse wind conditions. | Increase the rate of progressive rehabilitation works with the objective of meeting the established progressive rehabilitation targets. Prepare and implement a program for the stabilisation of unsealed / disturbed areas of the site including stockpiles, finished landforms, and disturbed areas that are not currently being actively worked / filled). The program should identify and classify all areas of the site that are currently disturbed according to the dust generation potential of those areas and establish clear targets for the stabilisation of those areas (either permanent or temporary) with the objective of meeting the requirements of the Blue Book. | Refer to response to SSD-6464 S3 C19. |
| 27 | Environment Protection / Prevention of Pollution | The Annual Returns prepared for the Environment Protection Licence 1276 noted several non-compliances with this condition. Refer to audit schedule for EPL 1376 for details. | A risk assessment and review of the storage capacity of the retention dams be undertaken that takes into account the increasing risk of extreme weather events, including extended duration wet weather patterns. | Refer to response to SSD-6464 S3 C24. |
| CCL753 | | | | |
| 2 | Operate in accordance with the Mining Operations Plan | Annual Review reports detail progress of mine rehabilitation progress against MOP plans. | Increase the rate of progressive rehabilitation works with the objective of meeting the established progressive rehabilitation targets. | Refer to response to SSD-6464 S3 C57. |

| NON-COMPLIANCE RECOMMENDATIONS AND RESPONSES | | | | |
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| Ref | Compliance Requirement | Independent Audit Finding | Independent Audit Recommendation | MTW Response |
| | | <p>The net rehabilitation progress (i.e. rehabilitation minus rehabilitation disturbance) for the 2015 – 2021 period was 20.4 ha higher than targets.</p> <p>A total of 47.9ha of new rehabilitation was completed during 2022 against a Mining Operations Plan 2022 target of 35ha. 2022 annual report notes that rehabilitation and disturbance forecasts submitted to Resources Regulator (submitted in August 2022) are based on financial year periods and therefore don't align with the calendar year Annual Review reporting period and the misalignment is intended to be corrected in the Forward Program to be submitted in May 2023.</p> | | |
| 16 | Minimise Dust | <p>Fifty-eight dust-related complaints were received during the audit period.</p> <p>No exceedances in dust criteria were reported during the audit period.</p> <p>Significant areas of the site have been cleared and progressive rehabilitation works are behind schedule. The Auditor also observed significant areas, that while not ready for final rehabilitation, would benefit from temporary stabilisation to help reduce dust emissions during adverse wind conditions.</p> | <p>Increase the rate of progressive rehabilitation works with the objective of meeting the established progressive rehabilitation targets.</p> <p>Prepare and implement a program for the stabilisation of unsealed / disturbed areas of the site including stockpiles, finished landforms, and disturbed areas that are not currently being actively worked / filled). The program should identify and classify all areas of the site that are currently disturbed according to the dust generation potential of those areas and establish clear targets for the stabilisation of those areas (either permanent or temporary) with the objective of meeting the requirements of the Blue Book.</p> | Refer to response to SSD-6464 S3 C19. |
| 25 | Environment Protection / Prevention of Pollution | The Annual Returns prepared for the Environment Protection Licence 1376 noted several non-compliances with this condition. Refer to audit schedule for EPL 1376 for details. | A risk assessment and review of the storage capacity of the retention dams be undertaken that takes into account the increasing risk of extreme weather events, including extended duration wet weather patterns. | Refer to response to SSD-6464 S3 C24. |
| ML1590 | | | | |
| 2 | Operate in accordance with the Mining Operations Plan | <p>Annual Review reports detail progress of mine rehabilitation progress against MOP plans.</p> <p>The net rehabilitation progress (i.e. rehabilitation minus rehabilitation disturbance) for the 2015 – 2021 period was 20.4 ha higher than targets.</p> <p>A total of 47.9ha of new rehabilitation was completed during 2022 against a Mining Operations Plan 2022 target of 35ha. 2022 annual report notes that rehabilitation and disturbance forecasts submitted to Resources Regulator (submitted in August 2022) are based on financial year</p> | Increase the rate of progressive rehabilitation works with the objective of meeting the established progressive rehabilitation targets. | Refer to response to SSD-6464 S3 C57. |

| NON-COMPLIANCE RECOMMENDATIONS AND RESPONSES | | | | |
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| Ref | Compliance Requirement | Independent Audit Finding | Independent Audit Recommendation | MTW Response |
| | | periods and therefore don't align with the calendar year Annual Review reporting period and the misalignment is intended to be corrected in the Forward Program to be submitted in May 2023. | | |
| 13 | Rehabilitate the site in accordance with the MOP | <p>Annual Review reports detail progress of mine rehabilitation progress against MOP plans.</p> <p>The net rehabilitation progress (i.e. rehabilitation minus rehabilitation disturbance) for the 2015 – 2021 period was 20.4 ha higher than targets.</p> <p>A total of 47.9ha of new rehabilitation was completed during 2022 against a Mining Operations Plan 2022 target of 35ha. 2022 annual report notes that rehabilitation and disturbance forecasts submitted to Resources Regulator (submitted in August 2022) are based on financial year periods and therefore don't align with the calendar year Annual Review reporting period and the misalignment is intended to be corrected in the Forward Program to be submitted in May 2023.</p> | Increase the rate of progressive rehabilitation works with the objective of meeting the established progressive rehabilitation targets. | Refer to response to SSD-6464 S3 C57. |
| ML1751 | | | | |
| 3 | Operate in accordance with the Mining Operations Plan | <p>Annual Review reports detail progress of mine rehabilitation progress against MOP plans.</p> <p>The net rehabilitation progress (i.e. rehabilitation minus rehabilitation disturbance) for the 2015 – 2021 period was 20.4 ha higher than targets.</p> <p>A total of 47.9ha of new rehabilitation was completed during 2022 against a Mining Operations Plan 2022 target of 35ha. 2022 annual report notes that rehabilitation and disturbance forecasts submitted to Resources Regulator (submitted in August 2022) are based on financial year periods and therefore don't align with the calendar year Annual Review reporting period and the misalignment is intended to be corrected in the Forward Program to be submitted in May 2023.</p> | Increase the rate of progressive rehabilitation works with the objective of meeting the established progressive rehabilitation targets. | Refer to response to SSD-6464 S3 C57. |
| CL219 | | | | |
| 2 | Operate in accordance with the Mining Operations Plan | <p>Annual Review reports detail progress of mine rehabilitation progress against MOP plans.</p> <p>The net rehabilitation progress (i.e., rehabilitation minus rehabilitation disturbance) for the 2015 – 2021 period was 20.4 ha higher than targets.</p> | Increase the rate of progressive rehabilitation works with the objective of meeting the established progressive rehabilitation targets. | Refer to response to SSD-6464 S3 C57. |

| NON-COMPLIANCE RECOMMENDATIONS AND RESPONSES | | | | |
|--|--|--|---|---------------------------------------|
| Ref | Compliance Requirement | Independent Audit Finding | Independent Audit Recommendation | MTW Response |
| | | A total of 47.9ha of new rehabilitation was completed during 2022 against a Mining Operations Plan 2022 target of 35ha. 2022 annual report notes that rehabilitation and disturbance forecasts submitted to Resources Regulator (submitted in August 2022) are based on financial year periods and therefore don't align with the calendar year Annual Review reporting period and the misalignment is intended to be corrected in the Forward Program to be submitted in May 2023. | | |
| 17 | Minimise Dust | <p>Fifty-eight dust-related complaints were received during the audit period.</p> <p>No exceedances in dust criteria were reported during the audit period.</p> <p>Significant areas of the site have been cleared and progressive rehabilitation works are behind schedule. The Auditor also observed significant areas, that while not ready for final rehabilitation, would benefit from temporary stabilisation to help reduce dust emissions during adverse wind conditions.</p> | <p>Increase the rate of progressive rehabilitation works with the objective of meeting the established progressive rehabilitation targets.</p> <p>Prepare and implement a program for the stabilisation of unsealed / disturbed areas of the site including stockpiles, finished landforms, and disturbed areas that are not currently being actively worked / filled). The program should identify and classify all areas of the site that are currently disturbed according to the dust generation potential of those areas and establish clear targets for the stabilisation of those areas (either permanent or temporary) with the objective of meeting the requirements of the Blue Book.</p> | Refer to response to SSD-6464 S3 C57. |
| 25 | Environment Protection / Prevention of Pollution | <p>The Annual Returns prepared for the Environment Protection Licence 1976 noted several non-compliances with this condition. Refer to audit schedule for EPL 1976 for details.</p> <ul style="list-style-type: none"> • Dam 1S overtopped as a result of heavy or sustained rainfall which caused significant runoff (2023 AR) • Dam 1S overtopped as a result of heavy or sustained rainfall which caused significant runoff (2021 AR) • Discharge from 9S via spillway to Loders Creek (2021 AR) | A risk assessment and review of the storage capacity of the retention dams be undertaken that takes into account the increasing risk of extreme weather events, including extended duration wet weather patterns. | Refer to response to SSD-6464 S3 C24. |

| CONTINUOUS IMPROVEMENT RECOMMENDATIONS | | |
|---|---|---|
| Ref | Independent Audit Recommendation | MTW Response |
| SSD 6464 S3 C27 / SSD 6465 S3 C25 | It is recommended that MTW review the water balance model to take into account the impacts of climate change, for example the impacts of higher-than-normal rainfall events due to more extreme La-Nina events. | At the next Water Balance Update, MTW will seek advice from water balance experts to review rainfall inputs to water balance model. Where an improved rainfall dataset/model inputs are available MTW will seek to incorporate in the next Water Balance update. |
| SSD 6464 S3 C27 / SSD 6465 S3 C25 | That the Water Balance documented in the WMP is updated to reflect water volumes and quality from the STP, as well as any necessary treatment and/or testing of the waters discharged. | MTW has reviewed this recommendation and does not intend to implement this recommendation. On site sewage management (OSSM) is already approved and regulated by Singleton Council and is included on relevant Environment Protection Licences. The volumes from these systems is not large in the context of a mine water balance, so provide no improvement to water balance understanding. |
| SSD 6464 S3 C29 / SSD 6464 S3 C56 | To improve the success of the rehabilitation works and to achieve the targets detailed in the Ecological monitoring reports, that: <ul style="list-style-type: none"> • More intensive weed control of High Threat Weeds be undertaken; • Control of overly dominant natives (e.g Corymbia maculate, Acacia species) via thinning or changes to seed mix; and • Widen the distribution of ground habitat features (such as logs); | Weed control in rehabilitation areas is currently constrained by available resources (land management crews). MTW will investigate ways to increase resourcing available for weed control in rehabilitation areas to in particular provide additional effort to High Threat Weeds. Complete by October 2023. Native seed mixes for MTW rehabilitation areas were reviewed in May 2020 to remove dominant species that are not considered to be a significant component of the target Grey Box – Ironbark Woodland (GBIBW) vegetation community. Relevant to this audit finding, the following species were changed to back-up species that would only be included in seed mixes if other GBIBW species were not available and at a reduced sowing rate when used: Corymbia maculata, Acacia crassa, Acacia elongata, and Acacia spectabilis. Acacia cultriformis has also been found to be dominant in some rehabilitation areas so the maximum sowing rate has also been reduced for this species. Thinning of Corymbia maculata will be conducted as required but may be intentionally delayed to allow sufficient tree growth to contribute towards the relevant habitat performance criteria (i.e. Length of Logs on the Ground (m) at least 10cm in diameter). The seed mix review recommendation was completed May 2020. The thinning recommendation is subject to ongoing review. Rehabilitation work program to increase distribution of ground habitat features through continued placement of salvaged logs in rehabilitation areas will continue in the next IEA period as an ongoing work item. |
| SSD 6464 S3 C29 | That any future modification to the Approval consider seeking to remove specific mentions of the use of the NSW Biodiversity Offsets Policy for Major Projects as this is no longer available. | MTW agrees this would assist with clarity for Biodiversity descriptions in the consent, and is happy to engage with DPE on this matter for any future modifications for SSD 6464. It is noted that a modification is currently in progress (SSD 6464 MOD1) which seeks to address biodiversity offset conditions of the consent, given the change to biodiversity offset regulation. |
| SSD 6464 S3 C32 | Warkworth Sands Woodland – Additional work is required to meet the final performance criteria, In particular it is recommended that consideration is given to amending seed mixes to include a higher diversity of non-grass native species to increase groundcover diversity. Restoration work scheduled for 2022 was delayed due to access issues associated with inclement weather and that works have been rescheduled for 2023. Based on the ecologist field observations, further active works, particularly in regard to increasing groundcover diversity, may be required to meet the required performance criteria by Year 15. | MTW will review understorey seed mix used in the Warkworth Sands Woodland revegetation areas to include a higher diversity of non-grass native species to increase ground cover diversity. Complete by November 2023. |