

# DA 60-03-2001 – 2023 Independent Environmental Audit

## Dendrobium Mine

SOUTH32 – ILLAWARRA METALLURGICAL COAL

Version 0

29 November 2023



## Document review

| Version | Date       | Revision Description | Prepared by  | Approved by  |
|---------|------------|----------------------|--|--|
| 0A      | 9/11/2023  | Draft 2023 IEA       | <p>Elliot Holland, Lead Auditor (Onward Consulting)</p> <p>Mark Vile, Rehabilitation Specialist (Onward Consulting)</p> <p>Steve Ditton, Mine Subsidence Impacts and Remediation Specialist (Ditton Geotechnical Services)</p> <p>Michael Batchelor, Stream Hydrology and Water Quality Specialist (WRM Water)</p> <p>Shane Lakmaker, Air Quality Specialist (Airen)</p> <p>Oliver Muller, Noise Management Specialist (Muller Acoustic Consulting)</p> <p>Kurtis Lindsay, Upland Swamps and Biodiversity Specialist (Land Eco Consulting)</p> | <p>Mike Gale, Associate / Project Director (Onward Consulting)</p> |
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## Abbreviations

| Abbreviation    | Definition   |
|-----------------|--|
| <b>ACHMP</b>    | Aboriginal Cultural Heritage Management Plan         |
| <b>AHIP</b>     | Aboriginal Heritage Impact Permit                    |
| <b>Airen</b>    | Airen Consulting                                     |
| <b>ANC</b>      | administrative non-compliance                        |
| <b>APP</b>      | WaterNSW Asset Protection Plan                       |
| <b>AQGHGMP</b>  | Air Quality and Greenhouse Gas Management Plan       |
| <b>BCS</b>      | Biodiversity, Conservation and Science               |
| <b>CA</b>       | corrective action                                    |
| <b>CCC</b>      | Community Consultative Committee                     |
| <b>CCL</b>      | Consolidated Coal Lease                              |
| <b>CEMP</b>     | Construction Environmental Management Plan           |
| <b>CMA</b>      | corrective management action                         |
| <b>DCPP</b>     | Dendrobium Coal Preparation Plant                    |
| <b>DGS</b>      | Ditton Geotechnical Services Pty Ltd                 |
| <b>DPE</b>      | Department of Planning and Environment               |
| <b>EA</b>       | existing action                                      |
| <b>EMS</b>      | Environmental Management Strategy                    |
| <b>EOP</b>      | end of panel   |
| <b>EPA</b>      | Environment Protection Authority                     |
| <b>EPL</b>      | Environmental Protection Licence                     |
| <b>ERM</b>      | Environmental Resources Management Australia Pty Ltd |
| <b>ESCP</b>     | Erosion and Sediment Control Plan                    |
| <b>FY</b>       | financial year                                       |
| <b>ha</b>       | hectares   |
| <b>HoC</b>      | height of cracking                                   |
| <b>HoF</b>      | height of fracturing                                 |
| <b>HVAS</b>     | high volume air samplers                             |
| <b>IEA</b>      | Independent Environmental Audit                      |
| <b>IEPMC</b>    | Independent Expert Panel for Mining in the Catchment |
| <b>IESC</b>     | Independent Expert Scientific Committee              |
| <b>IMC</b>      | Illawarra Metallurgical Coal                         |
| <b>INP</b>      | NSW Industrial Noise Policy                          |
| <b>KVCLF</b>    | Kemira Valley Coal Loading Facility                  |
| <b>Land Eco</b> | Land Eco Consulting Pty Limited                      |
| <b>LDP</b>      | licence discharge point                              |
| <b>LVAMP</b>    | Lighting and Visual Amenity Management Plan          |
| <b>LW</b>       | longwall   |

| <b>Abbreviation</b>      | <b>Definition</b>   |
|--------------------------|---|
| <b>MAC</b>               | Muller Acoustic Consulting Pty Ltd                              |
| <b>ML</b>                | mining lease  |
| <b>MOP</b>               | Mining Operations Plan  |
| <b>Mtpa</b>              | million tonnes per annum  |
| <b>NMP</b>               | Noise Management Plan   |
| <b>NRAR</b>              | Natural Resources Access Regulator                              |
| <b>OFI</b>               | opportunity for improvement                                     |
| <b>Onward Consulting</b> | Onward Consulting Pty Ltd                                       |
| <b>PIRMP</b>             | Pollution Incident Response Management Plan                     |
| <b>PM</b>                | performance measures  |
| <b>PRP</b>               | Pollution Reduction Program                                     |
| <b>RBL</b>               | Rating Background Level   |
| <b>RCE</b>               | Rehabilitation cost estimate                                    |
| <b>RMP</b>               | Rehabilitation Management Plan                                  |
| <b>RMS</b>               | Roads and Maritime Services                                     |
| <b>ROM</b>               | run-of-mine   |
| <b>SIMMCP</b>            | Swamp Impact, Monitoring, Management and Contingency Plan       |
| <b>SMP</b>               | Subsidence Management Plan                                      |
| <b>SRRP</b>              | Swamp Rehabilitation Research Program                           |
| <b>SWMP</b>              | Surface Water Management Plan                                   |
| <b>TARP</b>              | Trigger Action Response Plan                                    |
| <b>TMP</b>               | Traffic Management Plan   |
| <b>TSP</b>               | Total suspended particulates                                    |
| <b>WAL</b>               | water access licence  |
| <b>WIMMCP</b>            | Watercourse Impact, Monitoring, Management and Contingency Plan |
| <b>WRM</b>               | WRM Water and Environment Pty Ltd                               |

## Executive summary

Onward Consulting Pty Ltd (Onward Consulting) was engaged by Illawarra Metallurgical Coal (IMC) to conduct an Independent Environmental Audit (IEA) of the Dendrobium Mine, an underground coal mine located approximately eight kilometres west of Wollongong in the Southern Coalfield of New South Wales. The IEA was conducted in accordance with Schedule 8, Condition 6 of the Development Consent (i.e. DA 60-03-2001) as issued by the Department of Planning and Environment (DPE) and with consideration to the *Independent Audit Post Approval Requirements* (DPE, 2020).

The audit period to which this audit applies is inclusive of the period 15 October 2020 to 11 October 2023. This report presents the findings of this audit.

The audit team consistent of Elliot Holland (Lead Auditor), with technical expertise provided by:

- air quality – Shane Lakmaker of Airen Consulting (Airen);
- noise management – Oliver Muller of Muller Acoustic Consulting Pty Ltd (MAC);
- mine subsidence impacts and remediation – Steve Ditton of Ditton Geotechnical Services Pty Ltd (DGS);
- stream hydrology and water quality – Michael Batchelor of WRM Water & Environment Pty Ltd (WRM);
- upland swamps and biodiversity – Kurtis Lindsay of Land Eco Consulting Pty Ltd (Land Eco); and
- rehabilitation – Mark Vile of Onward Consulting.

The audit was inclusive of the following:

- a three day site inspection at Dendrobium Mine which included interviews with key site personnel and inspection of all key aspects of the development (Section 2.2 and Appendix J of the IEA report);
- consultation with regulatory agencies and the chair of the Community Consultative Committee (CCC) to obtain feedback and identification of any key issues to focus on during the audit (Section 2.3 of the IEA report);
- the status of implementation of the previous IEA findings, recommendations and actions (Section 3.1 of the IEA report);
- an assessment of compliance against all conditions of DA 60-03-2001 (Section 3.3.1 and Appendix D of the IEA report), Environmental Protection Licence (EPL) 3241 (Section 3.3.2 and Appendix E of the IEA report), SMP Approvals relevant to the audit period (Section 3.3.3 of the IEA report), active mining leases (Section 3.3.4 and Appendix F, Appendix G, and Appendix H of the IEA report), Standard Conditions under Part 2 of Schedule 8A of the Mining Regulation 2016 (NSW) (Section 3.3.4 and Appendix I of the IEA report), and relevant water licensing/approvals (Section 3.3.5);
- a review of the adequacy of the environmental management strategies, plans and programs required under DA 60-03-2001 (Section 3.4 of the IEA report);
- identification and discussion of complaints and incidents that occurred during the audit period (Section 3.5 of the IEA report);
- an assessment of the environmental performance of the development through review of the implementation of key environmental management strategies, plans and programs (Section 4 of the IEA report); and
- identification of relevant Corrective Actions and/or Opportunities for Improvement (Section 5 of the IEA report).

## Audit findings summary

The IEA identified a total of 14 non-compliances, with a low-risk non-compliance rating assigned to nine non-compliances and an administrative non-compliance (ANC) assigned to five non-compliances (Table E1).

A number of these non-compliances were interrelated, including:

- NC01, NC03, NC04, NC10, NC11 and NC12: all related to the same non-compliance;
- NC02: identified due to non-compliance with other conditions of DA 60-03-2001; and
- NC07 and NC08: both related to the same non-compliance.

Table E1 Non-compliance summary

| Finding ID | Non-compliance  | Source  | Condition                | Risk rating |
|------------|---|---|--------------------------|-------------|
| NC01       | <p>The audit determined non-compliances in relation to documentation of subsidence performance measures for Swamp 15a in the SIMMCP for LW 19, which are inconsistent with the requirements of Condition 8 of the SMP Approval for LW 19 and the requirements of Schedule 3, Condition 5 of DA 60-03-2001. This has resulted in these performance measures being incorrectly adopted in End of Panel (EOP) reporting for LW 19.</p> <p>The incorrect documentation of these performance measures as 'minor' and 'no significant change', instead of 'negligible' (per Condition 8 of the SMP Approval for LW 19) and 'does not cause erosion of the surface or changes in ecosystem functionality of Swamp 15a' (per Schedule 3, Condition 5 of DA 60-03-2001), has resulted in development and implementation (i.e. triggering) of Trigger Action Response Plans (TARPs) for LW 19 that are not correctly considering potential impacts and potential exceedance of performance measures for Swamp 15a.</p> <p>Given this discrepancy, there is potential for unreported impacts on Swamp 15a.</p> | DA 60-3-2001  | Schedule 2, Condition 1  | Low         |
| NC03       |   | DA 60-3-2001  | Schedule 3, Condition 5  | Low         |
| NC04       |   | DA 60-3-2001  | Schedule 3, Condition 6  | ANC         |
| NC10       |   | SMP Approval for LW 19  | Condition 8              | Low         |
| NC11       |   | SMP Approval for LW 19  | Condition 16             | ANC         |
| NC12       |   | Schedule 8A, Part 2 (Standard Conditions) of the Mining Regulation 2016 (NSW) | Clause 4(1)              | Low         |
| NC02       | Non-compliance with this condition is noted in relation to non-compliances with other conditions of consent.  | DA 60-3-2001  | Schedule 2, Condition 2  | Low         |
| NC05       | <p><b>Noise criteria non-compliance</b></p> <p>Noise monitoring identified one exceedance that was non-compliant with noise criteria in Schedule 4, Condition 1 during the audit period on 13 May 2023, resulting in a non-compliance (low risk).</p> <p><b>Noise monitoring</b></p> <p>During the audit period it was identified that noise monitoring at R39a was not being undertaken at the correct location (i.e. as documented in the Noise Management Plan).</p>   | DA 60-3-2001  | Schedule 4, Condition 1  | Low         |
| NC06       | During the audit period it was identified that noise monitoring at R39a was not being undertaken at the correct location (i.e. as documented in the Noise Management Plan).   | DA 60-3-2001  | Schedule 4, Condition 7  | ANC         |
| NC07       | <p>A minor non-compliance (low risk) was identified regarding discharge water quality limits, in relation to an exceedance of the water quality concentration limit for zinc (of 0.4 mg/L) was detected during investigations at licence discharge point (LDP) 5 on 13 October 2021.</p>  | DA 60-3-2001  | Schedule 4, Condition 12 | Low         |
| NC08       |   | EPL 3241  | Condition L2.4           | Low         |
| NC09       | The audit identified a non-compliance (low risk) in relation to a minor rockfall at Waterfall WC-WF54 (i.e. Waterfall 54), which represents a non-compliance with the requirement that 'no rock fall occurs at the waterfall or from its overhang'.   | SMP Approval for LW 17  | Condition 13             | Low         |
| NC13       | <p>Clause 16(1)(b) in Schedule 8A, Part 2 of the Mining Regulation 2016 (NSW) requires the lease holder to publish the Forward Program on its website.</p> <p>The NSW Resources Regulator identified on 2 December 2022, during an audit, that the Forward Program was not available in accordance with the requirements of Clause 16(3)(b).</p>  | Schedule 8A, Part 2 (Standard Conditions) of the Mining Regulation 2016 (NSW) | Clause 16(3)(b)          | ANC         |
| NC14       | Assessable Prospecting Operations (i.e. exploration drilling) during the FY23 Annual Review period was determined to have been undertaken without Development Consent or valid written approval from the Minister.  | Consolidated Coal Lease (CCL) 768   | Condition 4              | ANC         |

Furthermore, a number of these non-compliances were already identified in Annual Reviews required by conditions of DA 60-03-2001, and Annual Returns required by conditions of EPL 3241, including:

- NC05;
- NC06;
- NC07 and NC08;
- NC13; and
- NC14.

Non-compliances identified against relevant approvals are identified and discussed in Section 3.3, Appendix D (DA 60-03-2001), Appendix E (EPL 3241), Appendix F (CCL 768), and Appendix I (Schedule 8A, Part 2 [Standard Conditions] of the Mining Regulation 2016 [NSW]).

A summary of IMC's overall environmental performance is summarised in Section 4, and Corrective Actions or Opportunities for Improvement are summarised in Section 5.

## Audit conclusion

With regard to environmental management of the Dendrobium Mine, IMC is led by a competent and knowledgeable environmental department who provided all evidence requested during the audit and diligently facilitated the site inspection component of the audit.

The IMC Environment team has implemented the Dendrobium Mine environmental management systems to ensure processes are system-dependent as opposed to people-dependent.

Conduct of the audit has identified a high-level of compliance with relevant consents, leases and licences for Dendrobium Mine, with relevant management plans and monitoring programs implemented and continuously improved over time in consultation with relevant stakeholders.

Generally, most non-compliances identified in the audit related to:

- existing non-compliances already identified and reported by IMC; or
- ANCs which do not present the risk of environmental harm.

Non-compliances which were generally categorised as low risk, and not previously identified/reported by IMC, were primarily in relation to the same issue related to subsidence performance measures for Swamp 15a.

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# 1. Introduction

## 1.1 Background of the project

The Dendrobium Mine is an underground coal mine located approximately eight kilometres west of Wollongong in the Southern Coalfield of New South Wales (NSW), the mine is owned and operated by Dendrobium Coal Pty Ltd, a subsidiary of Illawarra Coal Holdings Pty Ltd, which is a wholly owned subsidiary of South32 Limited. Dendrobium Mine, Cordeaux Colliery and Appin Mine (and associated facilities) collectively operate as South32 Illawarra Metallurgical Coal (IMC).

The Dendrobium Mine currently extracts coal from the Wongawilli Seam within Consolidated Coal Lease (CCL) 768 using underground longwall (LW) mining methods (Figure 1.1).

The mine consists of the Dendrobium Mine Pit Top, Kemira Valley Coal Loading Facility (KVCLF), Kemira Valley Rail Line, Ventilation Shafts 1, 2 and 3, Mining Areas and the Dendrobium Coal Preparation Plant (DCPP).

As part of Development Approval DA 60-03-2001 (as modified, Modification 9), IMC are required to undertake an Independent Environmental Audit (IEA) every three years.

IMC engaged Lead Auditor Elliot Holland from Onward Consulting Pty Ltd (Onward Consulting) to carry out an IEA of the operation of the Dendrobium Mine, with the following technical specialists included in the audit team:

- air quality – Shane Lakmaker of Airen Consulting (Airen);
- noise management – Oliver Muller of Muller Acoustic Consulting Pty Ltd (MAC);
- mine subsidence impacts and remediation – Steve Ditton of Ditton Geotechnical Services Pty Ltd (DGS);
- stream hydrology and water quality – Michael Batchelor of WRM Water & Environment Pty Ltd (WRM);
- upland swamps and biodiversity – Kurtis Lindsay of Land Eco Consulting Pty Ltd (Land Eco); and
- rehabilitation – Mark Vile of Onward Consulting.

### 1.1.1 Department of Planning and Environment endorsement

The Department of Planning and Environment (DPE) endorsed the appointment of the audit team to conduct the IEA on 5 June 2023. The letter of endorsement is included in Appendix A.

### 1.1.2 Period covered by the audit

The audit period is from the 15 October 2020 (last day of previous Independent Environmental Audit by Environmental Resources Management Australia Pty Ltd [ERM]) to 11 October 2023 (last day of 2023 IEA site inspection). A site audit was conducted on 9, 10 and 11 October 2023.

## 1.2 Site description and history

DA 60-03-2001 was granted by the NSW Government in November 2001 with construction commencing in 2002. Dendrobium Mine commenced production in 2005, using LW methods, sourcing hard coking coal sourced from the Wongawilli Seam. Dendrobium Mine is one of three of IMC's operations, with the other operations being Appin Mine and Cordeaux Colliery, located in the Southern Coalfields of NSW.

The Dendrobium Mine primarily produces metallurgical coal for steelmaking and has an approved operational capacity of up to 5.2 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal until 31 December 2030 under DA 60-03-2001 (as modified, Modification 9). EPBC approval (2001/214) was granted in December 2001 to extract Wongawilli Seam Coal from an area of reserve to the north of the existing Elouera Mine and associated works. DA 60-03-2001 is effective until 1 January 2032. Dendrobium Mine is operated pursuant to EPL 3241.

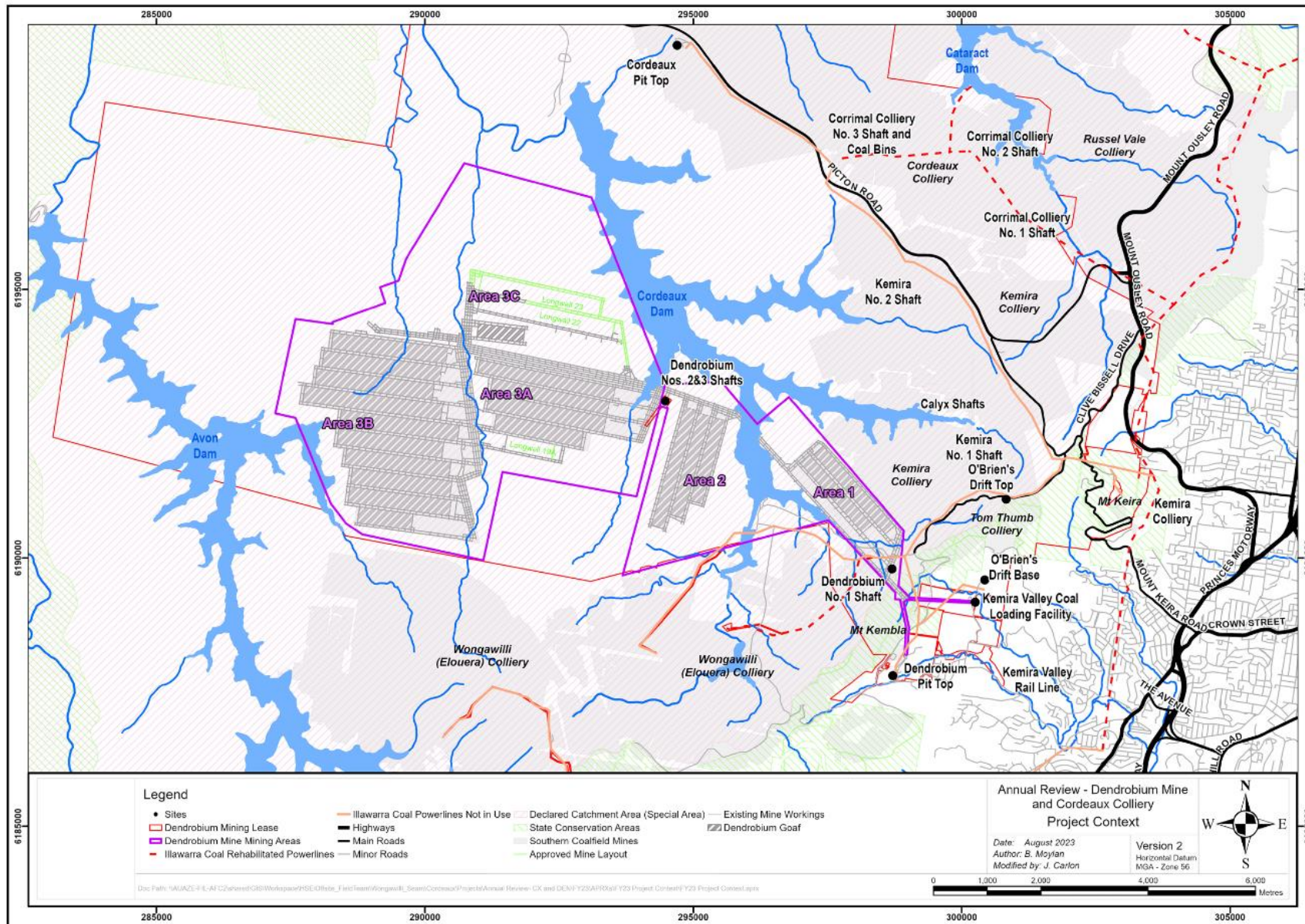


Figure 1.1 Project context<sup>1</sup>

<sup>1</sup> Source: IMC. [2023]. Annual Review – Dendrobium Mine and Cordeaux Colliery

Cordeaux Colliery, located 20 km north-west of Wollongong, ceased operations in 2001 and was placed on care and maintenance. Cordeaux Colliery was not within the scope of this IEA as it maintained the status of care and maintenance throughout the audit period.

Key areas of the Dendrobium Mine are detailed in Sections 1.2.1 to 1.2.6.

### 1.2.1 Dendrobium Mine Pit Top

The Dendrobium Pit Top incorporates the following surface facilities and infrastructure:

- administration buildings;
- workshop, machinery and equipment storage areas;
- the Dendrobium tunnel (providing access to underground works);
- sediment pond; and
- water treatment facility.

### 1.2.2 Kemira Valley Coal Loading Facility

The KVCLF receives coal from the underground operations via a conveyor system that travels to the surface through the Kemira Valley Tunnel. The coal then travels through a coal sizer and into a rill tower before being deposited onto a stockpile. Coal is loaded from the stockpile on to trains via an enclosed chute.

### 1.2.3 Kemira Valley Rail Line

Once loaded onto trains, the ROM coal is transported to the DCPD via private rail line. The rail line must adhere to operational restrictions to minimise impacts to the surrounding environment. This includes operating within prescribed noise limits and timeframes (train movements only occurring between 6 am-11 pm).

### 1.2.4 Ventilation Shafts 1, 2 and 3

Ventilation Shaft 1 currently operates only as an air intake for the underground workings. Ventilation Shafts 2 and 3 provide ventilation to the Area 3 underground workings.

### 1.2.5 Mining Areas

The approved mine layout for Dendrobium Mine incorporates three mining areas referred to as Areas 1, 2 and 3 (including 3A, 3B and 3C). During the reporting period LW mining was undertaken in Area 3A, 3B and 3C. Extraction of coal during the audit period and details of the approved Extraction Plan/Subsidence Management Plan (SMP) for each mining area is summarised in Table 1.1.

Table 1.1 Dendrobium mining progress and approvals relevant to the 2023 IEA

| Panel      | Mine area | Start date       | End date        | SMP approval date |
|------------|-----------|------------------|-----------------|-------------------|
| LW 16      | Area 3B   | 26 February 2020 | 4 November 2020 | 30 May 2018       |
| LW 17      | Area 3B   | 12 December 2020 | 13 October 2021 | 11 July 2019      |
| LW 18      | Area 3B   | 2 December 2021  | 17 May 2022     | 8 August 2020     |
| LW 19      | Area 3A   | 18 June 2022     | 29 March 2023   | 11 March 2021     |
| LW 21      | Area 3C   | 26 April 2023    | 7 August 2023   | 19 December 2019  |
| LW 22 & 23 | Area 3C   | N/A              | N/A             | 20 December 2022  |
| LW 19A     | Area 3A   | N/A              | N/A             | 11 August 2023    |

## 1.2.6 Dendrobium Coal Preparation Plant

ROM coal is processed at the DCP, located within the Port Kembla Steelworks complex. The coal is washed prior to undergoing the coke making process. The coal wash is directed for beneficial reuse or emplaced at the Appin Mine Coal Wash Emplacement Area if alternative uses cannot be found.

## 1.3 Audit objectives

Onward Consulting was commissioned to undertake an IEA of the Dendrobium Mine located in Kembla Heights, NSW on behalf of IMC. Primarily, the purpose of this audit was to satisfy Condition 6 of Schedule 8 of the Development Consent (DA 60-03-2001), including modifications (including Modification 9), requiring completion of an independent audit every three years from the date of approval.

The IEA was undertaken in accordance with the requirements of Schedule 8, Condition 6 of DA 60-03-2001, with the requirements of Schedule 8, Condition 6 of DA 60-03-2001 detailed in Table 1.2.

Table 1.2 Requirements for this IEA

| Condition               | Requirement  | Report section reference   |
|-------------------------|--|--|
| Schedule 8, Condition 6 | By 31 December 2011, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:  |  |
| (a)                     | be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;  | Section 1.1.1<br>Section 2.1<br>Appendix A<br>Appendix B   |
| (b)                     | include consultation with the relevant agencies and the community consultative committees (CCC);   | Section 2.3<br>Appendix C  |
| (c)                     | assess the environmental performance of the development and assess whether it is complying with the relevant requirements in this consent and any relevant Environmental Protection Licence (EPL) or mining lease (including any strategy, plan or program required under these approvals);  | Sections 3 and 4<br>Appendix D<br>Appendix E<br>Appendix F<br>Appendix G<br>Appendix H<br>Appendix I |
| (d)                     | review the adequacy of strategies, plans or programs required under these approvals;   | Section 3.4  |
| (e)                     | recommend measures or actions to improve the environmental performance of the development, and/or any strategy, plan or program required under these approvals; and  | Section 5  |
| (f)                     | be conducted and reported to the satisfaction of the Secretary.  | Outside the audit process  |
| Note                    | Note: This audit team must be led by a suitably qualified auditor and include experts in the fields of a) mine subsidence impacts and remediation and b) stream hydrology and water quality.   | Section 2.1<br>Appendix B  |
| Schedule 8, Condition 7 | Within three months of commencing an Independent Environmental Audit, or within another timeframe agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary, and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The recommendations must be implemented to the satisfaction of the Secretary. | Outside the audit process  |

## 1.4 Limitations

This report has been prepared by Onward Consulting for IMC and may only be used and relied on by IMC for the purpose agreed between Onward Consulting and IMC as set out in Section 1.3 of this report.

Onward Consulting otherwise disclaims responsibility to any person other than IMC arising in connection with this report. Onward Consulting also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by Onward Consulting in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in Section 1.3.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. Onward Consulting has no responsibility or obligation to update this report to account for events or changes occurring after the date that the report was prepared.

## 2. Audit methodology

### 2.1 Audit participants

The personnel listed in Table 2.1 were involved during the audit, including the audit team as approved by DPE on 5 June 2023 (Appendix A) and relevant personnel of IMC.

The audit was led by Elliot Holland, Lead Auditor – Environmental Management Systems (number: 115351) with involvement of technical specialists for relevant issues, as detailed in Table 2.1.

Table 2.1 Audit participants

| Audit participant | Organisation      | Role  | Qualification  |
|-------------------|-------------------|---|--|
| Elliot Holland    | Onward Consulting | Auditor: Lead Auditor and Project Manager               | Lead Auditor – Environmental Management Systems (number: 115351)<br>Bachelor of Environmental Science and Management |
| Mark Vile         | Onward Consulting | Audit Auditor: Rehabilitation specialist                | Bachelor of Environmental Science (Honours)  |
| Shane Lakmaker    | Airen             | Auditor: Air quality specialist                         | Bachelor of Technology (Atmospheric Science)   |
| Oliver Muller     | MAC               | Auditor: Noise management specialist                    | Bachelor of Resources Management and Human Geography   |
| Steve Ditton      | DGS               | Auditor: Mine subsidence impacts and remediation        | Bachelor of Engineering (Civil) (Honours)  |
| Michael Batchelor | WRM               | Auditor: Stream hydrology and water quality             | Bachelor of Engineering (Civil) (Honours),   |
| Kurtis Lindsay    | Land Eco          | Auditor: Upland swamps and biodiversity                 | Master of Engineering Studies<br>Bachelor of Science (Biodiversity and Conservation) (Honours)                       |
| Chris Schultz     | IMC               | Auditee: Superintendent Environment                     | N/A  |
| Amy Bradbury      | IMC               | Auditee: Specialist Environment – Systems and Reporting | N/A  |
| James Alchin      | IMC               | Auditee: Specialist Environment                         | N/A  |
| Billy Agland      | IMC               | Auditee: Specialist Environment                         | N/A  |
| Josh Carlon       | IMC               | Auditee: Coordinator Environment                        | N/A  |

### 2.2 Methodology and process

This IEA was undertaken in accordance with AS/NZS ISO 19011:2018 – Guidelines for quality and/or environmental management systems auditing and the *Independent Audit Post Approval Requirements* (DPE, 2020).

A desktop review of all relevant documents including management plans, monitoring data and complaints was used to determine the contents of the audit protocol to be used during the site inspection and personnel interviews. Evidence was collected and reviewed as part of the audit, including monitoring records, reports, and correspondence. Relevant evidence to select compliance ratings for the conditions of DA 60-03-2001 (as modified, Modification 9) and EPL 3241 is presented within Appendix D and Appendix E respectively.



## 2.2.1 Opening and closing meetings

The opening and closing meetings were held at the South32 site office at Port Kembla during the site inspection completed 9-11 October 2023.

The objectives of the closing meeting were to discuss any outstanding matters, present preliminary findings, and outline the process for finalising the audit report.

## 2.2.2 Site inspection

A detailed site inspection was undertaken during the period 9-11 October 2023. During the inspection, site documentation and the physical aspects of environmental management as well as implementation of plans and programs were reviewed.

The locations inspected during the audit are identified in Table 2.2. Conditions on the days of the site inspection were noted to be:

- 9 October 2023: up to 22 degrees Celsius (°C), with winds up to 21 km/hr, from the north-west;
- 10 October 2023: up to 18°C, with winds up to 18 km/hr, from the north-east; and
- 11 October 2023: up to 22°C, with winds up to 28 km/hr, from to the north-west.

No rain occurred during the period of the site inspection, with no areas identified as requiring a visit during the site inspection inaccessible.

Table 2.2 Areas inspected for the 2023 IEA

| Date                  | Area inspected   |
|-----------------------|--|
| Monday 9 October 2023 | <p>Licence discharge point (LDP) 5, including joining point for brine discharge.</p> <hr/> <p>Dendrobium Mine Pit Top, including:</p> <ul style="list-style-type: none"> <li>– the workshop, machinery and equipment storage area;</li> <li>– diesel refill area;</li> <li>– sediment pond;</li> <li>– water treatment facility;</li> <li>– site meteorological station;</li> <li>– noise shielding at the compressor site;</li> <li>– DustTrak;</li> <li>– vehicle washdown area;</li> <li>– waste storage;</li> <li>– noise monitor and microphones throughout site;</li> <li>– IBC chemical storage containers;</li> <li>– oil storage areas;</li> <li>– oily water separation facility; and</li> <li>– slope remediation works (EPL Condition E2.1), including clean water diversion reinstatement.</li> </ul> <hr/> <p>KVCLF, including:</p> <ul style="list-style-type: none"> <li>– groundwater turbidity probe;</li> <li>– conveyor and sizer;</li> <li>– rill tower;</li> <li>– stockpile;</li> <li>– site buffer dam;</li> <li>– DustTrak;</li> <li>– sediment ponds A &amp; B, including discharge point; and</li> <li>– O'Brien's Drift infrastructure, proposed for removal.</li> </ul> |

| Date                       | Area inspected  |
|----------------------------|---|
| Tuesday, 10 October 2023   | Wongawilli Creek flume.   |
|                            | WC21 Pool 24 and Pool 25 remediation area, including water level monitors.  |
|                            | Waterfall 54 (i.e. upstream and downstream boulder field, upstream rockbar water level monitor, and area of rockfall).                              |
|                            | SC10 Waterfall 15, including SC19 survey prism, water level monitor and SC10_Rockbar15b.  |
|                            | SC10 iron staining.   |
|                            | Ventilation Fans 2 & 3 (i.e. sediment ponds, diesel storage, spill kits, temporary gas plant; water storage for cooling, and rehabilitation areas). |
|                            | Swamp 15a, including soil moisture level monitor and groundwater piezometer for shallow groundwater levels.   |
|                            | Areas of natural subsidence remediation (i.e. DA3b_LW11_002 at Fire Road 6A).   |
|                            | Donalds Castle Creek.   |
|                            | Aboriginal Cultural Heritage site Sandy Creek Road 21.  |
| Wednesday, 11 October 2023 | DCPP.   |
|                            | Product coal stockpile.   |

### 2.2.3 Audit interviews

During the on-site component of the audit, interviews were conducted with the list of auditees included in Table 2.1.

### 2.2.4 Data collection and verification

Documents and data collected during the audit process were reviewed prior to the on-site component of the audit where possible. Additional documents were provided to the audit team during, and following completion of, the on-site component of the audit.

All information obtained during the audit process was verified by the audit team where possible. For example, statements made by site personnel were verified by viewing relevant documentation and/or visual observations made during the site inspection. Where suitable verification was unable to be obtained, this has been identified.

## 2.3 Agency/stakeholder consultation

The audit team attempted consultation via email with the following agency and administrative organisations on 7 September 2023:

- DPE Compliance;
- DPE Water;
- Biodiversity, Conservation and Science (BCS) Division of DPE;
- Environment Protection Authority (EPA);
- NSW Resources Regulator;
- WaterNSW;
- relevant councils, including Wingecarribee Shire Council, Wollondilly Shire Council, and Wollongong City Council; and
- Community Consultative Committee (CCC).

Responses were not received from the BCS, the EPA, Wingecarribee Shire Council, Wollondilly Shire Council, or the CCC. Agency and administrative organisation responses to the IEA request for input are provided in Table 2.3.

Table 2.3 Agency and administrative IEA requirements

| Auditor to consider  | Response and/or relevant section reference   |
|--|--|
| <b>DPE – Compliance</b>  |  |
| In addition to the IEA consent requirements, please look into subsidence related impacts and noise management. | 3.3 – Summary of non-compliances<br>3.4.1 – SMPs<br>3.4.2 – Watercourse Impact, Monitoring, Management and Contingency Plans (WIMMCPs)<br>3.4.3 – Swamp Impact, Monitoring, Management and Contingency Plans (SIMMCPs)<br>3.4.4 – Noise Management Plan (NMP)<br>4.3 – Water management<br>4.4 – Subsidence<br>4.6 – Noise management<br>Appendix D – Relevant conditions of DA 60-03-2001 |

| Auditor to consider  | Response and/or relevant section reference  |
|--|---|
| <b>DPE Water</b>   |   |
| <p>The requirement to prepare and implement management plans that relate to water sources and their dependent ecosystems and users, and associated impact management and mitigation. These plans may include:</p> <ul style="list-style-type: none"> <li>– Water Management Plans and related sub-plans e.g. Site Water Balance, Erosion and Sediment Control Plan (ESCP), Stormwater Management Plan, Surface and Groundwater Management Plan.</li> <li>– Extraction Plans and related sub-plans e.g. Water Management Plan, Subsidence Management Plan.</li> </ul> | <p>3.4.1 – SMPs<br/> 3.4.2 – WIMMCPs<br/> 3.4.6 – Water Management Plan (WMP), including Site Water Balance, ESCP, Surface Water Monitoring Program and Groundwater Monitoring Program<br/> Appendix D – Relevant conditions of DA 60-03-2001<br/> Appendix E – Relevant conditions of EPL 3241</p>   |
| <p>The requirement to prepare and implement trigger action response plans for water source impacts which set clearly defined limits and actions. This is to be reported on within annual and exceedance based reporting.</p>   | <p>3.4.1 – SMPs<br/> 3.4.2 – WIMMCPs<br/> Appendix D – Relevant conditions of DA 60-03-2001<br/> Appendix E – Relevant conditions of EPL 3241</p>   |
| <p>Water supply availability is clearly defined for the project.</p>   | <p>WRM has concluded during the audit that this is undertaken as part of the Site Water Balance and reporting in Annual Reviews, with further discussion provided at Schedule 4, Condition 14 of Appendix D – Relevant conditions of DA 60-03-2001.</p>   |
| <p>Water take at the site via storage, diversion, interception or extraction is clearly documented and is authorised by a relevant Water Access Licence or exemption under the Water Management (General) Regulation 2018.</p>   | <p>3.2.1 – Enforceable Undertaking between IMC and the Natural Resources Access Regulator (NRAR)</p> <p>Review of relevant documentation verifies water take is authorised, with applicable licences including:</p> <ul style="list-style-type: none"> <li>– Groundwater access licences (i.e. 10AL119249, 10AL118771, 10AL123125, and 10AL123124); and</li> <li>– Water Supply Works approval (i.e. 10WA118772).</li> </ul> <p>Annual Reviews for the audit period indicate water take under relevant water access licences has been compliant with relevant entitlements.</p> |

| Auditor to consider   | Response and/or relevant section reference   |
|---|--|
| Water metering at the site is in accordance with the NSW Non-Urban Metering Framework where relevant.   | WRM has concluded during the audit that this is undertaken in accordance with the requirements of the WMP, with further discussion provided at Schedule 4, Conditions 13 to 17 of Appendix D – Relevant conditions of DA 60-03-2001. |
| Water Access Licence/s used to account for water take by the project nominates the work where the water is being taken from.  | 3.2.1 – Enforceable Undertaking between IMC and the NRAR.<br>Review of documentation indicates this is addressed in Section 7.3 of Annual Reviews and Section 8 of the WMP.  |
| Annual reporting clearly documents;<br>1) water take, use and water source impacts,<br>2) compares results with previous year's, and<br>3) identifies exceedances and how these are managed/mitigated.  | Appendix D – Relevant conditions of DA 60-03-2001  |
| <b>NSW Resources Regulator</b>  |  |
| The independent environmental audit is required to assess compliance against the relevant environmental management conditions of the mining leases up to 1 July 2022, including implementation of the mining operations plan for the site.  | 3.3.4 – Relevant leases<br>4.2 – Rehabilitation  |
| From 2 July 2022, the independent environmental audit should provide an assessment of compliance with the requirements of Schedule 8A Standard conditions of mining leases, Part 2 Standard conditions, as set out in the Mining Regulation 2016. It is noted that the 3 mining leases that comprise the Dendrobium Colliery have been approved by the Regulator to be treated as a single lease for the purposes of Part 2 of Schedule 8A. | 3.3.4 – Relevant leases  |
| The audit should note observations where rehabilitation procedures, practices and outcomes represent best industry practice.  | 4.2 – Rehabilitation   |
| <b>Wollongong City Council</b>  |  |
| The preparation of a full table of compliance of the mine's activities with the Development Consent No. DA 60-03-2001.  | Appendix D – Relevant conditions of DA 60-03-2001  |

| Auditor to consider   | Response and/or relevant section reference  |
|---|---|
| <p>Specific review of the mine's performance with respect to water management and subsidence related impacts upon the water catchment.</p>                | <p>3.3 – Summary of non-compliances<br/> 3.4.1 – SMPs<br/> 3.4.2 – WIMMCPs<br/> 3.4.3 – SIMMCPs<br/> 3.4.4 – NMP<br/> 4.3 – Water management<br/> 4.4 – Subsidence<br/> – 4.4.1 – Watercourse impact management and monitoring; and<br/> – 4.4.2 – Upland Swamps and Biodiversity.<br/> 4.6 – Noise management<br/> Appendix D – Relevant conditions of DA 60-03-2001</p> |
| <p>Specific review of the mine's impact upon watercourses / creeks within the subject area, including the mine's performance relating to the WIMMCPs.</p> | <p>3.3 – Summary of non-compliances<br/> 3.4.2 – WIMMCPs<br/> 3.4.6 – WMP, including Site Water Balance, ESCP, Surface Water Monitoring Program and Groundwater Monitoring Program<br/> 4.3 – Water management<br/> 4.4.1 – Watercourse impact management and monitoring<br/> Appendix D – Relevant conditions of DA 60-03-2001</p>                                       |
| <p>Specific review of the mine's impact performance upon upland swamps against the SIMMCPs.</p>   | <p>3.3 – Summary of non-compliances<br/> 3.4.3 – SIMMCPs<br/> 4.4.2 – Upland Swamps and Biodiversity<br/> Appendix D – Relevant conditions of DA 60-03-2001</p>   |

| Auditor to consider  | Response and/or relevant section reference  |
|--|---|
| <p>Review of air, water and noise monitoring data and how the mine performs against the conditions of the consent and other management plans relating to these issues.</p>   | <p>3.3 – Summary of non-compliances<br/> 3.4.4 – NMP<br/> 3.4.5 – Air Quality and Greenhouse Gas Management Plan (AQGHGMP)<br/> 3.4.2– WIMMCPs<br/> 3.4.6 – WMP, including Site Water Balance, ESCP, Surface Water Monitoring Program and Groundwater Monitoring Program<br/> 4.3 – Water management<br/> 4.4.1 – Watercourse impact management and monitoring<br/> 4.5– Air quality<br/> 4.6 – Noise management<br/> Appendix D – Relevant conditions of DA 60-03-2001<br/> Appendix E – Relevant conditions of EPL 3241</p> |
| <b>WaterNSW</b>  |   |
| <p><u>Biodiversity Offset Strategy</u><br/> Dendrobium Mine has transferred it's Maddens Plain's site in 2016 into the National Parks estate as a Strategic Biodiversity Offset for both the Dendrobium Mine and the Bulli Seam Operation Project.<br/> This offset is not benefitting the impacted catchment or Special Areas and WaterNSW considers that the continued use of the Offset has resulted in adoption of mine plans, in the SMPs under review in the audit, for maximum extraction under/near upland swamps.</p> | <p>4.4.2.3 – Biodiversity offset area.</p>  |
| <p><u>Performance Measures</u><br/> Performance measures (PM) set in SMP approvals are constrained by performance measures set in the Dendrobium Development Consent.<br/> There are no performance measures for first and second order streams even though some of them have significant geomorphic features and permanent pools – e.g. WC21</p>  | <p>While there are no specific performance measures for minor streams, Appendix 4 of DA 60-03-2001 (Statement of Commitments) specifies that major fracturing in the beds of minor streams leading to complete loss are to be repaired in consultation with stakeholders.<br/> Review of the <i>WC21 and Donalds Castle Creek Rehabilitation Plan</i> indicates this has been undertaken, with further discussion provided in Section 4.2.2.</p>  |
| <p><u>Rehabilitation</u><br/> The only rehabilitation attempted is remediation trial of two pools in Wongawilli Creek tributary WC21 during 2021-2022 as per the Donalds Castle Creek and WC21 Rehabilitation plan. Very limited success is reported to date.</p>  | <p>4.2.2 – WC21 and Donalds Castle Creek Rehabilitation Plan</p>  |

| Auditor to consider  | Response and/or relevant section reference   |
|--|--|
| <p><u>Watercourse Impacts Monitoring and Contingency Plan (WIMMCP) and Swamp Impacts Monitoring and Contingency Plan (SIMMCP) and Trigger Action Response Plans (TARPs)</u></p> <p>During the audit period there was a breach of PM reported for Wongawilli Creek Waterfall 54 due to rockfall identified in August 2022 and two water quality exceedances for (a) iron staining in Wongawilli Creek in August 2021 and (b) water quality (pH and EC) in the LA4 tributary of Lake Avon in December 2021.</p> <p>WaterNSW considers that TARP triggers for assessment of swamp ecological function implemented in SIMMPCs for Areas 3B and 3C are inadequate.</p> <p>There are numerous monitoring sites in surface and shallow groundwater monitoring program where there is lack of adequate baseline monitoring data.</p> | <p>3.3 – Summary of non-compliances</p> <p>3.4.2 – WIMMCPs</p> <p>3.4.3 – SIMMCPs</p> <p>4.3 – Water management</p> <p>4.4 – Subsidence</p> <ul style="list-style-type: none"> <li>– 4.4.1 – Watercourse impact management and monitoring; and</li> <li>– 4.4.2 – Upland Swamps and Biodiversity.</li> <li>– Appendix D – Relevant conditions of DA 60-03-2001.</li> </ul> <p>However, it is the opinion of WRM that, given the locations it is reasonable to conclude these exceedances are minor.</p>  |
| <p><u>Groundwater Impact Monitoring and Height of Cracking (HoC)</u></p> <p>Despite of extensive post mining drilling investigations and groundwater monitoring implemented over Areas 3A and 3B LWs, there is still significant uncertainty in estimation of height of connective fracturing.</p> <p>According to peer review there is not enough data available for LWs with reduced panel widths that could be used to develop an empirical HoC model for Dendrobium.</p>   | <p>Conduct of the audit has concluded IMC have complied with the requirements of DA 60-03-2001, specifically to:</p> <ul style="list-style-type: none"> <li>– (e) take into consideration the findings of any independent report on groundwater commissioned by the Department, any advice from the Independent Expert Panel and the Mining Panel, and the report required under condition 19(c) of this approval; and</li> <li>– (f) be peer reviewed by a suitably qualified, experienced and independent expert, who is approved by the Secretary.</li> </ul> |
| <p><u>Swamp Rehabilitation Research Program (SRRP)</u></p> <p>WaterNSW has raised concerns previously that some projects under the SRRP (e.g., height of fracturing) are not related to swamp research. The audit must report on the projects included in the SRRP are consistent with the objectives of the SRRP.</p> <p>No swamp remediation trials were done as originally proposed as pre-trial investigations indicated remediation of swamps not to be feasible. Focus is now on research into swamp hydrology changes due to mining and South32 agreed to take over and allocate funds from the SRRP for continuation of swamp hydrology investigations initially funded and managed by WaterNSW.</p>   | <p>4.4.2.2 – SRRP</p>  |



| Auditor to consider   | Response and/or relevant section reference  |
|---|---|
| <p><u>Swamp monitoring and Trigger Action Response Plans (TARPs)</u></p> <p>WaterNSW considers that TARP triggers for assessment of swamp ecological function implemented in SIMMPCs for Areas 3B and 3C are inadequate.</p> <p>The soil moisture and groundwater levels are not specifically linked to a swamp performance measure, WaterNSW considers that observed decline in soil moisture and groundwater levels are early and reliable indicators of irreversible changes in swamp hydrology on which ecosystem functionality is dependent.</p> <p>As indicated in the IEAPM (2021) advice to LW 19 SMP approval, adopting a measure of impact based on changes in proportion of species is likely to be time-lagged to hydrological impacts. Identifying with confidence an exceedance based on observed vegetation changes cannot generally be expected within less than decadal time spans.</p> <p>Further IEPMC (2019) commented that “by definition, swamps are groundwater-dependent ecosystems.”</p> <p>Therefore, a change in piezometric levels should be the primary gauge of impacts on the ecosystem. If maintenance of ecosystem functionality is to be mandated for any swamp, then piezometric variation must be used not only in TARPs but also in performance measures”.</p> | <p>3.4.3.1 – Potential issues with TARPs</p>  |
| <p><u>Setback distances to swamps</u></p> <p>The recent swamp monitoring data suggest that minimum setback distance from swamps determined from the empirical model developed by Watershed Hydrogeo in 2019 and updated in 2020 and 2023 is not reliable and does not account for potential for longer term impacts.</p> <p>Watershed Hydrogeo (2019, 2021) assessed swamps monitoring data and concluded that the impacts on Swamps within 60 m of a LW happen quickly and the magnitude of the hydrological change is significant. However, as stated by the Panel advice to LW 19 SMP, avoiding mining within 60 m of a Swamp avoids rapid impact but may not avoid more progressive or subtle impacts where vertical permeability changes are smaller and subsurface cracking frequency is much less than within 60 m.</p> <p>The recent monitoring of shallow groundwater and soil moisture and the updated empirical swamp model (June, 2023) suggest that setback distance from LWs warrants more rigorous assessment when implemented in future mine design.</p> <p>WaterNSW is concerned that a performance measure of negligible environment consequences for Swamp 15a, that was set back by 60 m from LW 19, will be exceeded.</p>  | <p>3.3 – Summary of non-compliances</p> <p>3.4.3 – SIMMCPs</p> <p>4.4.2 – Upland Swamps and Biodiversity</p> <p>Appendix D – Relevant conditions of DA 60-03-2001</p> |

| Auditor to consider   | Response and/or relevant section reference  |
|---|---|
| <p><u>Stream flow</u></p> <p>Stream flow monitoring sites including DC13S1, DS2, DCU, LA2S1, LA3S1, LA4S1, WC15S1 and WC21S1 have less than 2 years of baseline monitoring.</p> <p>There are no conditions of consent or performance measures that directly apply to 1st or 2nd order tributaries located in the vicinity of the approved mining areas. WaterNSW is concerned with permanent changes in stream flow dynamics that impacts on ecological integrity of streams within the mine footprint. Fracturing of bedrock and reduction in baseflow may result in partial or complete loss of pool holding capacity resulting in the loss of stream habitat in lower order streams.</p> <p>The hydrological impacts for the first and second order streams observed during the Audit period are summarised as follows:</p> <ul style="list-style-type: none"> <li>– The estimated median flow in headwater streams decreased by 20-80%. Level 3 stream flow TARPs for median flow continue to be triggered in DC13, DCS2, WC21S1, WC15S1 and LA3S1 and LA4.</li> <li>– Low flow increased by 25 to 57% of time compared to pre-mining at DC13, DCS2, WC15S, WC21S1, LA3S1 and LA4S1 (TARP Level 3).</li> <li>– Ceased to flow frequency increased by 10-20% of time compared to baseline at DC13, WC15, WC21 (triggered TARP Level 2), and by 35-40% at DCS2, LA3S1 and LA4S1 (TARP Level 3).</li> </ul>  | <p>It is not the place of the auditor to critique the conditions of consent. WRM notes, while there are not specific performance measures, TARPs have been developed and implemented. Furthermore, the Secretary can instruct IMC to repair damage, which has occurred during the audit period.</p> |
| <p><u>Water quality</u></p> <p>During the audit period, there have been reported exceedances for iron staining in Wongawilli Creek catchment and water quality trigger exceedances in LA4 tributary of Lake Avon. Based on the most recent event identified by other agency, but not reported by IMC field staff, there is also lack of confidence, that all water quality events have been identified and reported to date.</p> <p>WaterNSW is concerned with water quality impacts associated with surface fracturing and recovery of shallow groundwater systems over Dendrobium mine.</p> <p>Groundwater seepages observed in Wongawilli Ck and WC12 tributary in August had dissolved concentration of iron up to 22.4 mg/L and manganese up to 1.77 mg/L. Ecoengineers (2012) reported the ferruginous springs over Dendrobium area may exhibit elevated concentrations of up to 40 mg/L of iron and up to 2 mg/L of manganese.</p> <p>Water quality impacts are not confined to the surface groundwater interaction within mine footprint as is described in groundwater assessment. For example, the extent of iron staining was reported over 2.9 km distance downstream of iron spring in Wongawilli Creek in August 2021 (HGEO, 2021) and up to the confluence of Wongawilli Creek and Cordeaux River a year later (LW 18 End of Panel report, October 2022).</p> <p>The water quality data collected at WC_FR6 (90 mg/L of total iron) demonstrate that increases in stream flow velocity and turbulence during high flow events can result in the increased transport of iron floc downstream. The high pollutant loads associated with the initial runoff may impact on water quality at offtake points and increases in iron concentrations in drinking water supplies can lead to higher treatment costs.</p> | <p>WRM acknowledges the possibility this has occurred. However, it is considered unlikely based on previous observations. Furthermore, there have been no measured exceedances over the audit period.</p>   |
| <p><u>Over the goaf investigation program</u></p> <p>Despite of extensive post mining drilling investigations and groundwater monitoring implemented over Areas 3A and 3B LWs, there is still significant uncertainty in estimation of height of connective fracturing.</p> <p>There is still not enough data to support development of the site-specific empirical model. The expert review (Hebblewhite, 2020) of height of depressurisation investigations (HGEO, 2020) commented that "lack of significant differential in height of</p>  | <p>An opportunity for improvement (OFI) (i.e. <b>OFI11</b>) has been identified at Section 5.2 to address these concerns.</p>   |

| Auditor to consider  | Response and/or relevant section reference  |
|--|---|
| <p>depressurisation with the reduced panel widths (249 m wide panels in Area 3A vs 305 m panels Area 3B) means that the range of the dataset available to assist with developing an improved prediction model remains inconsistent, and insufficient to enable any further model development based on empirical methods”.</p> <p>WaterNSW hasn't received any further information or updates on investigations over completed LWs in Area 3B since 2020.</p>   |   |
| <p><u>Revised conceptual model of height of fracturing</u></p> <p>The revision of the conceptual model of height of fracturing (HoF) was presented in the EIA for Dendrobium Area 5 Expansion project. According to this, estimates of HoF based on the Tammetta approach were too conservative and not supported with over goaf investigations and recent groundwater monitoring. The revised conceptual model has been applied for groundwater impact assessment for LW 19A SMP.</p> <p>The discontinued fracture zone presented in the updated conceptual model above Area 3B appears to disagree with assessment of the extent of high angle fracturing reported by HGEO (2020). HGEO concluded that mining-induced fracturing, including high angle fracturing, is highly variable but appears to extend to the surface above LWs of width 249 m in Area 3A and 305 m in Area 3B. The density of fracturing decreases with height above the goaf, with anomalous fracturing within the BHCS and below 120 m above the goaf.</p> <p>There appear to be disagreement on surface to seam connectivity between experts involved in assessments of Dendrobium groundwater monitoring data and height of fracturing or depressurisation (PSM, 2017; Mackie, 2017; SCT, 2017 and 2018; Hebblewhite, 2020 and 2022).</p>  | <p>The auditor notes the concerns identified by WaterNSW, but also notes there does not appear to be a request related to the 2023 IEA.</p>   |
| <p><u>Groundwater model</u></p> <p>The groundwater model is the only tool used to predict impacts on groundwater and surface water or baseflow to streams. It is highly parametrised and complex numerical model and output are greatly affected by the selection of parameters and the conceptual and other assumptions used to develop the model.</p> <p>Each groundwater modelling report released to date has demonstrated that the groundwater model calibration is acceptable and peer review concluded that the model is fit for purpose. This does not mean that the model predictions are accurate. Comparing models predictions reported to date suggest that there has been a significant increase in estimated surface water lose between the 2014 report and the most recent groundwater assessments.</p> <p>The groundwater model has been updated numerous times to implement requirements of the approval conditions as well as advances in understanding of subsidence and groundwater impacts from most recent investigations and monitoring. Therefore, WaterNSW requested to include tabulated history of the model revisions and modifications in groundwater model reports. There have been further changes in conceptual models as well as in the modelling approach.</p> <p>The recent Panel advice to LW 19A (2023) commented that the long-term groundwater conditions may still not be adequately represented by the modelling outputs. The mine sealing is implemented in the model, but the effect of mine roadways as high transmissivity connections throughout the mined area has not been implemented when assessing the mine closure and groundwater recovery.</p> | <p>WRM notes the groundwater model has been continuously updated and improved based on peer review and additional data. While the potential inaccuracy is acknowledged, the peer reviewers agree it is fit for purpose.</p> |

## 2.4 Approval and document list

### 2.4.1 Approvals

Licences and approvals assessed for compliance are listed in Table 2.4.

Table 2.4 Approvals audited

| Approval document                                    | Report section reference    |
|--|-----------------------------|
| DA 60-03-2001  | Section 3.3.1<br>Appendix D |
| EPL 3241   | Section 3.3.2<br>Appendix E |
| SMP approvals for Longwalls (LWs) 17, 18, 19, and 21 | Section 3.3.3               |
| Consolidated Coal Lease (CCL) 768                    | Section 3.3.4<br>Appendix F |
| Mining Lease (ML) 1510                               | Section 3.3.4<br>Appendix G |
| ML 1566  | Section 3.3.4<br>Appendix H |
| Relevant water licensing and approvals               | Section 3.3.5               |
| Recommendations from the 2020 IEA                    | Section 3.1                 |

### 2.4.2 Management plans

Management plans required by conditions of DA 60-03-2001 and SMP Approvals for LWs 17, 18, 19, and 21 that were evaluated are listed in Table 2.5.

Table 2.5 Management plans evaluated

| Management plan                   | Version and date | Report section reference    |
|-----------------------------------|------------------|-----------------------------|
| <b>WIMMCPs</b>                    |                  |                             |
| – LW 16 (Area 3B)                 | March 2019       | Section 3.4.2<br>Appendix D |
| – LW 17 (Area 3B);                | February 2020    |                             |
| – LW 18 (Area 3B);                | August 2020      |                             |
| – LW 19 (Area 3A);                | February 2021    |                             |
| – LW 19A (Area 3A);               | September 2022   |                             |
| – LW 21 (Area 3C); and            | September 2021   |                             |
| – LW 22 & 23 (Area 3C).           | September 2021   |                             |
| <b>End of Panel (EOP) reports</b> |                  |                             |
| – LW 19 (Area 3A);                | July 2023        | Appendix D                  |
| – LW 16 (Area 3B);                | March 2021       |                             |
| – LW 17 (Area 3B); and            | April 2022       |                             |
| – LW 18 (Area 3B).                | October 2022     |                             |

| Management plan   | Version and date        | Report section reference     |
|---|-------------------------|------------------------------|
| <b>SIMMCPs</b>  |                         |                              |
| – LW 16 (Area 3B)   | March 2019              | Section 3.4.3<br>Appendix D  |
| – LW 17 (Area 3B);  | February 2020           |                              |
| – LW 18 (Area 3B);  | August 2020             |                              |
| – LW 19 (Area 3A);  | February 2021           |                              |
| – LW 19A (Area 3A); and   | September 2022          |                              |
| – LW 21 (Area 3C).  | September 2021          |                              |
| <b>SMPs</b>   |                         |                              |
| – LW 16 (Area 3B);  | October 2017            | Section 3.4.1<br>Appendix D  |
| – LW 17 (Area 3B);  | March 2019              |                              |
| – LW 18 (Area 3B);  | November 2020           |                              |
| – LW 19 (Area 3A);  | March 2021              |                              |
| – LW 19A (Area 3A);   | September 2022          |                              |
| – LW 20 & 21 (Area 3C); and   | November 2019           |                              |
| – LW 22 & 23 (Area 3C).   | September 2021          |                              |
| <b>Relevant management plans</b>  |                         |                              |
| WMP, including Site Water Balance, ESCP, Surface Water Monitoring Program and Groundwater Monitoring Program. | Rev 8.0, 4 August 2023  | Section 3.4.6<br>Appendix D  |
| NMP.  | Rev 11.0, August 2022   | Section 3.4.4<br>Appendix D  |
| Air Quality and Greenhouse Gas Management Plan.   | Rev 9, August 2023      | Section 3.4.5<br>Appendix D  |
| Rehabilitation Management Plan (RMP).   | Rev 1.2, 30 June 2023   | Section 3.4.7<br>Appendix D  |
| Bushfire Management Plan.   | Rev 7.1, 18 August 2021 | Section 3.4.8<br>Appendix D  |
| Traffic Management Plan (TMP).  | Rev 6.0, April 2021     | Section 3.4.9<br>Appendix D  |
| Lighting and Visual Amenity Management Plan (LVAMP).  | Rev 8.1, 15 May 2023    | Section 3.4.10<br>Appendix D |
| Waste Management Plan.  | Rev 7.0, July 2023      | Section 3.4.11<br>Appendix D |
| Environmental Management Strategy (EMS).  | Rev 6.0, July 2021      | Section 3.4.12               |
| WC21 and Donalds Castle Creek Rehabilitation Plan   | Rev 4.0, January 2023   | Section 4.2.2                |
| <b>Aboriginal Cultural Heritage Management Plans (ACHMPs)</b>   |                         |                              |
| – LW 19 (Area 3A)   | 2009                    | Section 3.4.13<br>Appendix D |
| – LW 18 (Area 3B); and  | Niche, 9 February 2021  |                              |
| – LW 21, 22 and 23 (Area 3C).   | 10 November 2021        |                              |

## 2.5 Definitions

Audit reporting was undertaken with consideration to the requirements of the *Independent Audit Post Approval Requirements* (DPE, 2020).

### Compliant

The auditor has collected sufficient verifiable evidence to demonstrate that all elements of the requirement have been complied with within the scope of the audit.

### Non-compliant

The auditor has determined that one or more specific elements of the conditions or requirements have not been complied with within the scope of the audit.

In addition, while not required by *Independent Audit Post Approval Requirements* (DPE, 2020), risk ratings have also been assigned for non-compliances as identified in Table 2.6.

Table 2.6 Risk ratings for non-compliances

| Risk level     | Colour code | Description  |
|----------------|-------------|--|
| High           | Red         | Non-compliance, with potential for significant environmental consequences, regardless of the likelihood of occurrence.   |
| Medium         | Orange      | Non-compliance, with: <ul style="list-style-type: none"> <li>– potential for serious environmental consequences, but is unlikely to occur, or</li> <li>– potential for moderate environmental consequences, but is likely to occur.</li> </ul> |
| Low            | Yellow      | Non-compliance, with: <ul style="list-style-type: none"> <li>– potential for moderate environmental consequences, but is unlikely to occur, or</li> <li>– potential for low environmental consequences, but is likely to occur.</li> </ul>     |
| Administrative | Light Blue  | Only applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions).  |

### Not triggered

A requirement has an activation or timing trigger that has not been met during the temporal scope of the audit being undertaken (may be a retrospective or future requirement), therefore an assessment of compliance is not relevant.

### Note

A statement or fact, where no assessment of compliance is required.

### Existing action (EA)

Has generally been identified where there is not an issue of compliance and IMC are already, or soon to commence, undertaking the action identified.

### Corrective action (CA)

Are identified where there is an issue of compliance, and the action needs to be undertaken to close out the compliance issue.

### OFI

Has generally been identified where there is not an issue of compliance, but improvements could be made to enhance tracking of compliance.

### 3. Audit findings

#### 3.1 Previous independent audit and status

The recommendations made in the 2020 IEA prepared by ERM, and the status of recommendations as at 11 October 2023 are detailed in Table 3.1.

Table 3.1 Status of 2020 IEA findings/recommendations

| Condition                | 2020 IEA finding/recommendation   | 2023 IEA finding  | Status |
|--------------------------|---|---|--------|
| <b>DA 60-03-2001</b>     |   |   |        |
| Schedule 2, Condition 1  | <p><b>Finding</b></p> <p>On 10 August 2020 the sediment dam that collects runoff water from roads, hardstand surfaces and the coal stockpile area at the KVCLF failed, releasing approximately 10 ML of water from the site, which flowed into Brandy and Water Creek. The released water contained suspended coal fines and gravel material from the dam base.</p> <p><b>Recommendation</b></p> <p>The release from the sediment dam is currently under investigation by the regulator.</p>  | <p>An investigation determined that the cause of the event was the corrosion and subsequent failure of a clean water diversion pipe beneath the sediment pond. This caused a void to form underneath the sediment pond and resulted in the subsequent release of water. A clean-up program was implemented to remove the coal fines. An environmental assessment of the creeks in November 2020 observed no ongoing evidence of coal fines.</p> <p>Measures to reinstate the sediment pond were undertaken, including replacement of the clean water diversion pipe. The sediment pond was returned to normal operation in December 2020.</p> <p>Review of relevant documentation indicates that a Penalty Notice was issued by the EPA (Section 3.2.6), with no further direction given. This recommendation is considered closed.</p> | Closed |
| Schedule 2, Condition 12 | <p><b>Finding</b></p> <p>Specific training is defined in training matrices. It was noted that the training matrix for the Environment team is not up to date. Training which has been completed has not been recorded in the matrix and training has been assigned for some individuals which is not required. The auditor understands a review of training records is to be undertaken by the end of 2020.</p> <p><b>Recommendation</b></p> <p>Maintain training records to ensure employees have received appropriate training.</p> | <p>Review of relevant documentation and conduct of the site inspection verified compliance with the requirements of Schedule 2, Condition 12, with documentation reviewed including</p> <ul style="list-style-type: none"> <li>– South32 Environmental Skills Matrix, tracking currency of training;</li> <li>– tracking of currency of personnel's completion of the Environmental Awareness Training online course; and</li> <li>– Environment General Training &amp; Competency training form (IMCTRN0831) sample for environment team member, dated 27 April 2022.</li> </ul> <p>Therefore, it is considered this recommendation is considered closed.</p>  | Closed |

| Condition                | 2020 IEA finding/recommendation  | 2023 IEA finding  | Status |
|--------------------------|--|---|--------|
| Schedule 4, Condition 1  | <p><b>Finding</b></p> <p>A number of exceedances of noise criteria were reported during the audit period.</p> <p><b>Recommendation</b></p> <p>Continue to implement all reasonable and feasible noise mitigation measures.</p>   | <p>Noise monitoring identified several exceedances of noise criteria during the audit period, resulting in a low-risk non-compliance.</p> <p>However, review of Schedule 4, Condition 4(b) determined that reasonable and feasible best practice noise mitigation measures have been implemented during the audit period.</p> <p>It is also noted, noise exceedance events often occurred at the time of temperature inversion and/or source-to-receiver wind directions. Due to the use of the Port Kembla Bureau of Meteorology station (ID 068253), which is unlikely to experience noise enhancing conditions (due to its coastal location), there is potential some of the exceedances are occurring when there would be noise enhancing conditions occurring at the KVCLF and/or Dendrobium Pit Top. The result being that IMC are potentially reporting noise exceedances that are not true exceedances. This recommendation is considered closed.</p> | Closed |
| Schedule 4, Condition 9  | <p><b>Finding</b></p> <p>On 25 September 2020, the EPA observed dust emanating from the stockpiles at the DCPD during blustery conditions. The DCPD is operated under an EPL held by BlueScope Steel who received a notice to provide information from the EPA. IMC provided information to BlueScope in relation to the notice and is awaiting feedback from the EPA. There was no indication that air quality criteria were breached due to this incident</p> <p><b>Recommendation</b></p> <p>Await further direction from EPA and implement any actions required.</p> | <p>The faulty dust sprays were repaired. Additional water trucks were on call and operational during the period that the dust sprays were off-line and continue to be implemented where adverse weather conditions are predicted.</p> <p>Review of relevant documentation indicates that no further direction was given and this recommendation is considered closed.</p>   | Closed |
| Schedule 4, Condition 12 | <p><b>Finding</b></p> <p>On 10 August 2020 the sediment dam that collects runoff water from roads, hardstand surfaces and the coal stockpile area at the KVCLF failed, releasing approximately 10 ML of water from the site, which flowed into Brandy and Water Creek. The released water contained suspended coal fines and gravel material from the dam base.</p> <p><b>Recommendation</b></p> <p>The release from the sediment dam is currently under investigation by the regulator. Comply with any further direction from the EPA.</p>                             | Refer to detail at Schedule 2, Condition 1 of DA 60-03-2001.  | Closed |



| Condition                | 2020 IEA finding/recommendation   | 2023 IEA finding  | Status |
|--------------------------|---|---|--------|
| Schedule 7, Condition 1  | <p><b>Finding</b></p> <p>Notifications of exceedance of noise criteria were provided in writing to the affected resident as soon as monitoring reports were available during the audit period. Subsequent monitoring was made available on the company website with the affected residents subsequently notified when that had occurred. IMC should notify affected residents of monitoring results prior to publishing on the website.</p> <p><b>Recommendation</b></p> <p>Provide monitoring results proactively to the resident prior to release to the website.</p> | <p>Review of relevant documentation indicates this recommendation has been closed, with subsequent monitoring results proactively provided to residents where exceedances have occurred in previous monitoring.</p>   | Closed |
| Schedule 8, Condition 2  | <p><b>Finding</b></p> <p>The Water Management Plan includes contingencies for managing unpredictable impacts and their consequences, however the Air Quality Management Plan does not include a similar contingency section in the event that unpredictable dust impacts occur.</p> <p><b>Recommendation</b></p> <p>Include a contingency plan in the Air Quality Management Plan.</p>  | <p>The AQGHGMP was reviewed and updated to include section 7.2.2 which describes the adaptive management process. The AQGHGMP was subsequently approved by DPE on 8 June 2021.</p> <p>This recommendation is considered closed.</p>   | Closed |
| Schedule 8, Condition 11 | <p><b>Finding</b></p> <p>The IMC website did not include all documents required by Schedule 8, Condition 11.</p> <p><b>Recommendation</b></p> <p>Include all the reports required by Condition 2 of Schedule 2 of this consent on the website.</p>  | <p>Review of the IMC response to recommendations from the 2020 IEA indicates South32 does not have access to documents prior to Modification 5 of DA 60-03-2001. Therefore, while the recommendation has not been addressed, it does not seem likely it is reasonably able to be addressed.</p> | Closed |
| <b>EPL 3241</b>          |   |   |        |
| L1.1                     | Refer to detail at Schedule 4, Condition 12 of DA 60-03-2001.   | Refer to detail at Schedule 4, Condition 12 of DA 60-03-2001.   | Closed |
| M1.3                     | <p><b>Finding</b></p> <p>The time at which the sample was collected was not observed on the documents available for review.</p> <p><b>Recommendation</b></p> <p>Ensure that the time of collection for each sample is included on sample records, such as the chain of custody</p>  | <p>Review of relevant documentation verifies the 2020 IEA recommendation has been addressed via recording the time sample was taken on the field form and managed on the IMC database system EQUIS.</p>   | Closed |
| <b>ML 1510</b>           |   |   |        |
| 25                       | Refer to detail at Schedule 4, Condition 12 of DA 60-03-2001.   | Refer to detail at Schedule 4, Condition 12 of DA 60-03-2001.   | Closed |

## 3.2 Summary of agency notices, orders, penalty notices or prosecutions

### 3.2.1 Enforceable Undertaking between IMC and the Natural Resources Access Regulator

Following an investigation into the Dendrobium Coal Mine's modelled water usage, water management and water licensing arrangements, IMC entered into an enforceable undertaking with the Natural Resources Access Regulator (NRAR) on 30 June 2023.

NRAR noted that IMC holds aquifer water access licences in connection with its underground operations at the Dendrobium Mine, but alleged IMC did not hold any surface water licences for surface water take at the Dendrobium Mine for the 2018-2019, 2019-2020, 2020-2021, 2021-2022 and 2022-2023 water years. As such, the Dendrobium Mine did not directly account for incidental surface water take across those water years under the *Water Management Act 2000*.

As a result, IMC has agreed to implement various environmental protection works and activities at the mine in order to regularise its operations and ensure compliance with the *Water Management Act 2000*. Environmental protection works will include, amongst other things, payment of a financial contribution to a third party, or IMC carrying out works to the sum of the financial contribution, to undertake environmental protection works.

Consultation with IMC during the audit indicates sufficient Water Access Licences (WALs) to address the issue have not yet been obtained. It was noted by IMC that an application for WALs was submitted to DPE – Water, with the NSW Water Minister responding to IMC on 22 February 2023. This correspondence outlined Ministerial directions to establish a mechanism and allow for trade of allocation with WaterNSW for incidental surface water take within the Metropolitan Special Areas. However, the proposed pricing and details of the trade with WaterNSW were not yet confirmed at the time of the audit.

Review of Annual Reviews for the audit period indicate water take under relevant water licences (i.e. 10AL119249, 10AL118771, 10AL123125, and 10AL123124) has been compliant with relevant entitlements.

### 3.2.2 Official Caution from the NSW Resources Regulator

An Official Caution was issued by the Resources Regulator in relation to an exploration borehole being drilled outside of the period of the approval. This has been identified as an administrative non-compliance (ANC) (**NC14**) with relevant leases, as discussed in Section 3.3.4. Actions identified to prevent reoccurrence included:

- revising the site set-up form to include activity approval dates and conditions;
- developing a process map for pre-disturbance activities; and
- uploading activity approvals into LandAssist with a relationship back to the mining lease/exploration licence, including all relevant information.

As a result, a CA or OFI was not deemed relevant.

### 3.2.3 Warning Letter from the DPE on 14 June 2022

A Warning Letter was issued on 14 June 2022 in relation to exceedances of noise impact assessment criteria in February 2022. The exceedance was noted to likely be associated with the operation of the locomotives at the KVCLF at the time.

An investigation determined that the noise from the locomotives on the Kemira Valley Rail Line should not be included in the assessment of compliance against noise impact assessment criteria in Schedule 4, Condition 1 of DA 60-03-2001. Instead, noise from the rail operations should be assessed against the criteria in Schedule 4, Condition 3 of DA 60-03-2001. The NMP was updated to reflect the findings from the investigation.

### **3.2.4 Warning Letter from the DPE on 5 June 2023**

In a Warning Letter issued on 5 June 2023 (for an exceedance notification provided on 30 May 2023), DPE advised any exceedance of criteria in Schedule 4, Condition 1 of DA 60-03-2001 are considered non-compliances.

This was in relation to noise exceedances of 2 dBA or less being assessed by IMC in accordance with the former NSW Industrial Noise Policy (INP) during the audit period, with the INP stating that a 2 dBA exceedance does not constitute a non-compliance with noise impact assessment criteria. However, DPE noted the INP is not referenced in Schedule 4, Condition 1 of DA 60-03-2001 and does not apply, and exceedances of noise criteria should be reported as non-compliances in Annual Reviews.

Review of relevant notes for Schedule 4, Condition 1 of DA 60-03-2001 during conduct of the audit identified reference to the INP. Therefore, the audit has concluded application of the INP is appropriate and in accordance with Schedule 4, Condition 1 of DA 60-03-2001.

### **3.2.5 Advisory Letter from the EPA**

The EPA issued an advisory letter on 3 December 2020 in relation to visible dust emissions occurring from Stockpile 4 in December 2020 and a non-compliance (low risk) with Condition O2.1 of EPL 6092 (issued to BlueScope Steel) was reported in the financial year (FY) 2020/2021 (i.e. FY21) Annual Review. Although this non-compliance was associated with IMC operations on a leased area with EPL 6092, the non-compliance does not relate to EPL 3241.

### **3.2.6 Penalty Notice from EPA**

A Penalty Notice for \$15,000 was issued by the EPA on 18 March 2021 for the uncontrolled release of water from the Kemira Valley Sediment Pond that occurred on 10 August 2020. The EPA completed its investigation of the incident and determined that Dendrobium Coal did not comply with Condition L1.1 of EPL 3241.

The non-compliance associated with the Penalty Notice occurred during the 2020 IEA period.

### 3.3 Summary of non-compliances

Conduct of the 2023 IEA has identified a total of 14 non-compliances with the relevant approvals, licenses and leases detailed in Section 2.4.1, consisting of:

- nine categorised as low risk; and
- five categorised as ANC.

However, a number of these non-compliances were interrelated within, and across, relevant approvals, licenses and leases as follows:

- **NC01, NC03, NC04, NC10, NC11** and **NC12** relate to the same identified compliance issue;
- **NC02** is a consequence of non-compliances identified with conditions DA 60-03-2001 (i.e. **NC01**, and **NC03** to **NC07**); and
- **NC07** and **NC08** relate to the same event.

Considering this, five individual non-compliances with the relevant approvals, licenses and leases were identified.

Overall compliance with conditions of relevant approvals, licenses and leases was noted to be high, as follows:

- DA 60-03-2001: Compliance with approximately 93% of conditions (i.e. 90 of 97 conditions);
- EPL 3241: Compliance with approximately 98% of conditions (i.e. 57 of 58 conditions);
- SMP Approvals:
  - LW 16: Compliance with 100% of conditions;
  - LW 17: Compliance with approximately 97% of conditions (i.e. 28 of 29 conditions);
  - LW 18: Compliance with 100% of conditions;
  - LW 19: Compliance with approximately 88% of conditions (i.e. 15 of 17 conditions); and
  - LW 21: Compliance with 100% of conditions.
- Relevant leases:
  - Standard Conditions (i.e. Schedule 8A, Part 2 of the Mining Regulation 2016): Compliance with approximately 94% of conditions (i.e. 34 of 36 conditions);
  - CCL 768:
    - up to 30 June 2022: Compliance with approximately 100% of conditions (i.e. 14 of 14 conditions); and
    - from 1 July 2022: Compliance with approximately 86% of conditions (i.e. 6 of 7 conditions).
  - ML 1510:
    - up to 30 June 2022: Compliance with approximately 100% of conditions (i.e. 54 of 54 conditions); and
    - from 1 July 2022: Compliance with approximately 100% of conditions (i.e. 5 of 5 conditions).

- ML 1566:
  - up to 30 June 2022: Compliance with approximately 100% of conditions (i.e. 47 of 47 conditions); and
  - from 1 July 2022: Compliance with approximately 100% of conditions (i.e. 3 of 3 conditions).

### 3.3.1 DA 60-03-2001

The review of compliance with DA 60-03-2001 identified seven non-compliances (Appendix D). Five non-compliances were deemed to represent a low risk, while two were deemed ANCs. A summary of non-compliances is detailed in Table 3.2.

Table 3.2 Non-compliances with conditions of DA 60-03-2001

| Finding ID | Condition               | Requirement  | Finding  | Risk rating | CA or OFI |
|------------|-------------------------|--|--|-------------|-----------|
| NC01       | Schedule 2, Condition 1 | The Applicant must implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the development. | <p>The audit determined non-compliances in relation to documentation of subsidence performance measures for Swamp 15a in the SIMMCP for LW 19, which are inconsistent with the requirements of Condition 8 of the SMP Approval for LW 19. This has resulted in these performance measures being incorrectly adopted in EOP reporting for LW 19.</p> <p>The incorrect documentation of these performance measures as 'minor' and 'no significant change', instead of 'negligible', has resulted in development and implementation (i.e. triggering) of TARPs for LW 19 that are not correctly considering potential impacts and potential exceedance of performance measures for Swamp 15a.</p> <p>There was no evidence to indicate harm to the environment has occurred due of the incorrect documentation of performance measures, as this was not able to be confirmed during the audit. However, as a consequence of adopting the incorrect performance measures, a non-compliance has been identified in relation to the requirement to implement all reasonable and feasible measures to prevent or minimise harm to the environment due to the incorrect development and implementation (i.e. triggering) of TARPs, and associated reporting.</p> <p>Further discussion is provided at Schedule 3, Conditions 5 and 6, and Section 3.3.3.2.</p> | Low         | CA01      |
| NC02       | Schedule 2, Condition 2 | The Applicant must carry out the development in accordance with the conditions of this consent.  | Non-compliance with this condition is a consequence of non-compliances identified with conditions DA 60-03-2001 as detailed in this table.   | Low         | N/A       |

| Finding ID | Condition               | Requirement  | Finding  | Risk rating | CA or OFI |
|------------|-------------------------|--|--|-------------|-----------|
| NC03       | Schedule 3, Condition 5 | The Applicant must ensure that subsidence does not cause erosion of the surface or changes in ecosystem functionality of Swamp 15a and that the structural integrity of its controlling rockbar is maintained or restored, to the satisfaction of the Secretary. | <p>As discussed in Schedule 3, Condition 6, review of the SIMMCP for LW 19 (Area A) indicates performance measures for Swamp 15a (as detailed in Table 6-1 of the SIMMCP), are inconsistent with the requirements of Condition 8 of the SMP Approval for LW 19 as follows:</p> <ul style="list-style-type: none"> <li>– ‘minor’ change in the size of the swamps, with the performance measure in the SMP Approval for LW 19 being ‘negligible’;</li> <li>– ‘minor’ change in the ecosystem functionality of the swamps, with the performance measure in the SMP Approval for LW 19 being ‘negligible’; and</li> <li>– ‘no significant change’ to the composition or distribution of species within the swamps, with the performance measure in the SMP Approval for LW 19 being ‘negligible’.</li> </ul> <p>Negligible is defined in the SMP Approval for LW 19 as <i>‘Small and unimportant, such as to be not worth considering’</i>, while Schedule 3, Condition 5 requires that subsidence <i>‘does not cause erosion of the surface or changes in ecosystem functionality at Swamp 15a’</i>.</p> <p>The incorrect documentation of performance measures in the SIMMCP for LW 19 and in EOP reporting for LW 19 has the potential for impacts on Swamp 15a due to mining to go unreported.</p> <p>While the report <i>‘Ecological data review: Swamp 15A Stage 2 technical memo’</i> (Niche, 2023) found <i>‘overall TSR is primarily being influenced by catchment-scale factors rather than factors at the swamp scale’</i>, given that the shallow groundwater and soil moisture TARPs have been triggered at Swamp 15a, it is considered plausible there may be potentially unreported impacts on ecosystem functionality due to mining activities at Swamp 15a. Furthermore, Attachment H of the LW 19 EOP Report concludes:</p> <p><i>‘Impacts to swamp communities are apparent in the post-mining period. This is anticipated based upon the proximity of these swamps to the longwalls...’</i>.</p> <p>The incorrect documentation of these performance measures as ‘minor’ and ‘no significant change’, instead of ‘negligible’ (per the SMP Approval for LW 19) and <i>‘does not cause erosion of the surface or changes in ecosystem functionality at Swamp 15a’</i> (per Schedule 3, Condition 5), has resulted in development and implementation (i.e. triggering) of TARPs for LW 19 that are not adequately considering compliance with Schedule 3, Condition 5 and Condition 8 of the SMP Approval for LW 19. Given this discrepancy, there is potential for unreported impacts on Swamp 15a.</p> <p>Therefore, a non-compliance (low risk) has been identified in relation to adequate detection of change in ecosystem functionality of Swamp 15a due to mining at LW 19, potentially resulting in:</p> <ul style="list-style-type: none"> <li>– moderate environmental consequences, considered unlikely to occur; or</li> <li>– low environmental consequences, considered likely to occur.</li> </ul> <p>It was noted during the interview process that IMC are undertaking a study into the coincidence/causality of vegetation change (ecosystem function) and groundwater change at Swamp 15a. Therefore, <b>CA01</b> has been identified in relation to undertaking this study.</p> | Low         | CA01      |

| Finding ID | Condition               | Requirement   | Finding   | Risk rating | CA or OFI |
|------------|-------------------------|---|---|-------------|-----------|
| NC04       | Schedule 3, Condition 6 | Prior to carrying out any underground mining operations that could cause subsidence in either Area 3A, Area 3B or Area 3C, the Applicant must prepare a SIMMCP to the satisfaction of the Secretary.  | <p>Review of the SIMMCP for LW 19 (Area A) indicates performance measures for Swamp 15a, detailed in Table 6-1 of the SIMMCP are inconsistent with the requirements of the SMP Approval for LW 19 as follows:</p> <ul style="list-style-type: none"> <li>– ‘minor’ changes in the size of the swamps, with the performance measure in the SMP Approval for LW 19 being ‘negligible’;</li> <li>– ‘minor’ changes in the ecosystem functionality of the swamps, with the performance measure in the SMP Approval for LW 19 being ‘negligible’; and</li> <li>– ‘no significant change’ to the composition or distribution of species within the swamps, with the performance measure in the SMP Approval for LW 19 being ‘negligible’.</li> </ul> <p>An ANC has been found with this condition due to Schedule 3, Condition 6(b) requiring the monitoring program and reporting mechanisms to enable close and ongoing review by DPE and the NSW Resources Regulator of the subsidence effects and impacts (individual and cumulative) of each Area 3A longwall on Swamp 15a. The adopting of incorrect performance measures for the SIMMCP for LW 19 did not achieve this requirement.</p> <p>As mining and EOP reporting has been completed for LW 19 and review of the SIMMCP for LW 19A indicates performance measures have been documented correctly, no recommendation is deemed relevant.</p> | ANC         | N/A       |
| NC05       | Schedule 4, Condition 1 | The Applicant must ensure that the noise generated at the surface facilities does not exceed the noise impact assessment criteria in Table 1 at any residence on privately-owned land, or on more than 25% of any privately-owned land. The applicable criteria for any residence not listed in Table 1 shall be the criteria applying at the nearest listed residence. | <p><b>Noise criteria non-compliance</b></p> <p>Noise monitoring identified one exceedance that was non-compliant with noise criteria in Schedule 4, Condition 1 during the audit period on 13 May 2023, resulting in a non-compliance (low risk).</p> <p>As this was an unrepeated event, a CA has not been deemed necessary.</p> <p><b>Noise monitoring</b></p> <p>In addition, during the audit period it was identified that noise monitoring at R39a was not being undertaken at the correct location (i.e. as documented in the NMP), with an investigation undertaken to determine variance between monitoring locations.</p> <p>Assessment of monitoring locations completed by Spoke Acoustics (dated 29 October 2021) was sighted, including subsequent response by DPE on 4 November 2021.</p> <p>The NMP has since been updated (Version 10.0 and subsequent versions) to include alternative monitoring location for R39a, with all monitoring locations reviewed against approved NMP.</p>   | Low         | N/A       |
| NC06       | Schedule 4, Condition 7 | The Applicant must implement the Noise Monitoring Program as approved by the Secretary.   | <p>On 15 May 2021, it was identified that noise monitoring at R39a was not being undertaken at the location as specified in the NMP, which is identified as a non-compliance with Schedule 4, Condition 7. Noise monitoring has been undertaken at the current location for an extended period.</p> <p>The NMP was revised in May 2021 to indicate the current monitoring location.</p> <p>An ANC has been identified and no recommendation is deemed relevant.</p>   | ANC         | N/A       |

| Finding ID | Condition                | Requirement   | Finding  | Risk rating | CA or OFI |
|------------|--------------------------|---|--|-------------|-----------|
| NC07       | Schedule 4, Condition 12 | The Applicant must ensure all surface water discharges from the surface facilities:<br><br>(b) comply with the discharge limits (both volume and quality) set for the development in any EPL. | A minor non-compliance (low risk) was identified regarding discharge water quality limits, in relation to an exceedance of the water quality concentration limit for zinc (of 0.4 mg/L) was detected during investigations at LDP 5 on 13 October 2021. A concentration of 0.6 mg/L was recorded during the discharge of brine from the Appin North water treatment plant, likely due to inadequate mixing with Dendrobium Mine water.<br><br>Therefore, as this was an unrepeatable event, a CA is not deemed relevant. Furthermore, it is understood from audit interviews that IMC are developing a protocol around limiting brine discharge from Appin North water treatment plant when the Dendrobium Mine is not actively discharge or discharging minimal quantities. | Low         | N/A       |

### 3.3.2 EPL 3241

The review of compliance with EPL 3241 identified one low-risk non-compliance (Appendix E). A summary of this non-compliance is detailed in Table 3.3.

Table 3.3 Non-compliances with conditions of EPL 3241

| Finding ID | Condition | Requirement                            | Finding  | Risk rating | CA or OFI |
|------------|-----------|--|--|-------------|-----------|
| NC08       | L2.4      | Water and/or Land Concentration Limits | A minor non-compliance (low risk) was identified regarding discharge water quality limits, in relation to an exceedance of the water quality concentration limit for zinc (of 0.4 mg/L) was detected during investigations at LDP 5 on 13 October 2021. A concentration of 0.6 mg/L was recorded during the discharge of brine from the Appin North water treatment plant, likely due to inadequate mixing with Dendrobium Mine water.<br><br>Therefore, as this was an unrepeatable event, a CA is not deemed relevant. Furthermore, it is understood from audit interviews that IMC are developing a protocol around limiting brine discharge from Appin North water treatment plant when the Dendrobium Mine is not actively discharge or discharging minimal quantities. | Low         | N/A       |

### 3.3.3 SMP Approvals

The review of compliance with the SMP Approvals identified non-compliances with the conditions for LW 17 (Section 3.3.3.1) and LW 19 (Section 3.3.3.2). There were no non-compliances identified with the conditions of LW 16, 18, and 21.

#### 3.3.3.1 Longwall 17

The review of compliance with the SMP Approval for LW 17 identified one non-compliance (low risk). A summary of this non-compliance is detailed in Table 3.4.



Table 3.4 Non-compliances with conditions of the SMP Approval for LW 17

| Finding ID | Condition | Requirement  | Finding  | Risk rating | CA or OFI |
|------------|-----------|--|--|-------------|-----------|
| NC09       | 13        | The Applicant must ensure that the development does not cause any exceedance of the performance measures in Table 1, to the satisfaction of the Secretary. | <p>The audit identified a non-compliance (low risk) in relation to a minor rockfall at Waterfall WC-WF54 (i.e. Waterfall 54), which represents a non-compliance with the requirement that 'no rock fall occurs at the waterfall or from its overhang'.</p> <p>The rockfall was identified on 2 August 2022. The Waterfall 54 Technical Committee met on 5 August 2022 and determined based on review of photographs of the waterfall that the event likely occurred between 6 and 28 October 2021 in associated with mining of LW 17.</p> <p>The rockfall site had an approximate length of 3 m, depth of 1.5 m and height of 1 m and was also screened from view by dense vegetation as well as the setback from the observation point during previous surveys.</p> <p>The site inspection completed for the audit determined no further rock fall has occurred and the rock fall was barely distinguishable due to vegetative growth since the event occurred.</p> <p>To ensure no further impact to Waterfall 54, IMC made the decision to stop LW 17 short of the approved finish line at cut through 3 on or around 6 September 2022.</p> <p>In addition, a meeting was held between the DPE and IMC to discuss the rockfall, with DPE advising in a letter dated 9 May 2023 that in consultation with WaterNSW and any relevant agency such as the BCS, IMC are required to provide alternative measures and/or programs to be implemented in the catchment to offset the non-compliance. IMC have proposed to investigate fish passage and sediment control along Fire Road 6 as a suitable offset for the rockfall. It is noted this action is subject to engagement with, and approval of, DPE.</p> <p>Therefore, no recommendation is deemed relevant, as:</p> <ul style="list-style-type: none"> <li>– appropriate management/mitigation was undertaken (i.e. stopping further progression of mining in LW 17);</li> <li>– alternative measures and/or programs to offset the non-compliance had been discussed in consultation with DPE, the BCS and WaterNSW; and</li> <li>– no exacerbation of impacts was observed during the site inspection.</li> </ul> | Low         | N/A       |

### 3.3.3.2 Longwall 19

The review of compliance with the SMP Approval for LW 19 identified two non-compliances. One non-compliance was deemed to represent a low risk, while one was deemed an ANC. A summary of non-compliances is detailed in Table 3.5.

Table 3.5 Non-compliances with conditions of the SMP Approval for LW 19

| Finding No. | Condition | Requirement  | Finding   | Risk rating | CA or OFI |
|-------------|-----------|--|---|-------------|-----------|
| NC10        | 8         | The Applicant must ensure that the development does not cause any exceedance of the performance measures in Table 1, to the satisfaction of the Secretary.   | <p>The audit determined non-compliances in relation to documentation of subsidence performance measures for Swamp 15a in the SIMMCP for LW 19, which are inconsistent with the requirements of the SMP Approval for LW 19.</p> <p>This has resulted in these performance measures being incorrectly adopted in EOP reporting for LW 19. The incorrect documentation of these performance measures as 'minor' and 'no significant change', instead of 'negligible', has resulted in development and implementation (i.e. triggering) of TARPs for LW 19 that are not correctly considering potential impacts and potential exceedance of performance measures for Swamp 15a.</p> <p>There was no evidence to indicate that any harm to the environment has occurred due to the incorrect documentation of performance measures, as this was not able to be confirmed during the audit. As a result, the SIMMCP for LW 19 was not developed or implemented to ensure exceedance would not occur. Therefore, a non-compliance has been identified in relation to ensuring the development does not cause any exceedance of the performance measures.</p> <p>Further discussion is provided at Schedule 3, Conditions 5 and 6 in Section 3.3.1, with <b>CA01</b> identified.</p>                    | Low         | CA01      |
| NC11        | 16        | The Applicant must implement the most recently approved SIMMCP for LW 19 prepared under condition 6 of Schedule 3 of development consent DA 6003-2001 to provide for achievement of the performance measures listed in Table 1 in consultation with WaterNSW and BCS and to the satisfaction of the Secretary. | <p>Review of the SIMMCP for LW 19 (Area A) indicates performance measures for Swamp 15a, as detailed in Table 6-1 of the SIMMCP are inconsistent with the requirements of Condition 8 of the SMP Approval for LW 19 as follows:</p> <ul style="list-style-type: none"> <li>– 'minor' changes in the size of the swamps, with the performance measure in the SMP Approval for LW 19 being 'negligible';</li> <li>– 'minor' changes in the ecosystem functionality of the swamps, with the performance measure in the SMP Approval for LW 19 being 'negligible'; and</li> <li>– 'no significant change' to the composition or distribution of species within the swamps, with the performance measure in the SMP Approval for LW 19 being 'negligible'.</li> </ul> <p>An ANC has been found with this condition as it requires for SIMCCP for LW 19 to provide for achievement of the performance measures listed in Table 1 of Condition 8 of the SMP Approval for LW 19. The adopting of incorrect performance measures for the SIMMCP for LW 19 did not achieve this requirement.</p> <p>As mining and EOP reporting has been completed for LW 19 and review of the SIMMCP for LW 19A indicates performance measures have been documented correctly, no recommendation is deemed relevant.</p> | ANC         | N/A       |

### 3.3.4 Relevant leases

The review of compliance with the relevant leases (CCL 768, ML 1510 and ML 1566) identified two non-compliances with the Standard Conditions identified in Schedule 8A, Part 2 of the Mining Regulation 2016 (NSW) (Appendix I). One non-compliance was deemed to represent a low risk, while one was deemed an ANC.

One ANC was identified for CCL 768 (Appendix F). No non-compliances were identified for ML 1510 (Appendix G) and ML 1566 (Appendix H).

A summary of non-compliances are detailed in Table 3.6.

Table 3.6 Non-compliances with relevant leases and Schedule 8A, Part 2 of the Mining Regulation 2016 (NSW)

| Finding ID | Relevant clause   | Requirement  | Finding   | Risk rating | CA or OFI |
|------------|---|--|---|-------------|-----------|
| NC12       | Clause 4(1) of Schedule 8A, Part 2 of the Mining Regulation 2016.     | 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. | <p>The audit determined non-compliances in relation to documentation of subsidence performance measures for Swamp 15a in the SIMMCP for LW 19, which are inconsistent with the requirements of the SMP Approval for LW 19 and conditions of DA 60-03-2001.</p> <p>This has resulted in these performance measures being incorrectly adopted in EOP reporting for LW 19. The incorrect documentation of these performance measures as 'minor' and 'no significant change', instead of 'negligible', has resulted in development and implementation (i.e. triggering) of TARPs for LW 19 that are not correctly considering potential impacts and potential exceedance of performance measures for Swamp 15a.</p> <p>There was no evidence to indicate that any harm to the environment has occurred due to the incorrect documentation of performance measures, as this was not able to be confirmed during the audit. However, a non-compliance has been identified in relation to the requirement to implement all reasonable and feasible measures to prevent or minimise harm to the environment due to the incorrect development and implementation (i.e. triggering) of TARPs, and associated reporting, as a consequence of adopting the incorrect performance measures.</p> <p>Further discussion is provided in Section 3.3.1 and 3.3.3 (i.e. Schedule 3, Conditions 5 and 6), with <b>CA01</b> identified.</p> | Low         | CA01      |
| NC13       | Clause 16(3)(b) of Schedule 8A, Part 2 of the Mining Regulation 2016. | Certain documents to be publicly available.  | <p>Clause 16(1)(b) in Schedule 8A, Part 2 of the Mining Regulation 2016 (NSW) requires the lease holder to publish the Forward Program on its website.</p> <p>The NSW Resources Regulator identified on 2 December 2022, during an audit, that the Forward Program was not available in accordance with the requirements of Clause 16(3)(b).</p> <p>It was confirmed the Forward Program is now available on the Dendrobium Mine website. As a result, a recommendation is not deemed relevant.</p>   | ANC         | N/A       |

| Finding ID | Relevant clause | Requirement  | Finding   | Risk rating | CA or OFI |
|------------|-----------------|--|---|-------------|-----------|
| NC14       | 4 of CCL 768    | <p>4. Assessable Prospecting Operations</p> <p>(a) The lease holder must not carry out any assessable prospecting operation on land over which this lease has been granted unless:</p> <p>(i) it is carried out in accordance with any necessary development consent; or</p> <p>(ii) if development consent is not required, the prior written approval of the Minister has been obtained.</p> | <p>Assessable Prospecting Operations (i.e. exploration drilling) during the FY23 Annual Review period was determined to have been undertaken without Development Consent or valid written approval from the Minister.</p> <p>Shortly after drilling commenced on borehole D-A3C-S17-33 in June 2023, it was identified that whilst the WaterNSW approval is valid to March 2025, the approval from DPE (MAAG0004533/RR19249409) was only valid until 1 July 2022.</p> <p>Once identified, drilling on borehole D-A3C-S17-33 ceased and the non-compliance, identified as an ANC, was reported to the NSW Resources Regulator and reported in the FY23 Annual Review. The NSW Resources Regulator issued an Official Caution on 7 July 2023.</p> <p>Actions identified to prevent reoccurrence included:</p> <ul style="list-style-type: none"> <li>– revising the site set-up form to include activity approval dates and conditions;</li> <li>– developing a process map for pre-disturbance activities; and</li> <li>– uploading activity approvals into LandAssist with a relationship back to the mining lease/exploration licence, including all relevant information.</li> </ul> <p>As a result, a CA or OFI was not deemed relevant.</p> | ANC         | N/A       |

### 3.3.5 Compliance with water licensing and approvals

The review of compliance with water licensing and approvals did not identify any non-compliances. The relevant licenses and approvals included:

- Groundwater access licences (i.e. 10AL119249, 10AL118771, 10AL123125, and 10AL123124);
- Water Supply Works approval (i.e. 10WA118772); and
- WaterNSW Access Consent (i.e. F2020/1545 Special and Controlled Areas access).

## **3.4 Adequacy of any strategies/plans, programs and compliance documents**

### **3.4.1 Subsidence Management Plans**

While the SMPs prepared for LW 16 (Area 3B) (October 2017), LW 17 (Area 3B) (March 2019), and LW 18 (Area 3B) (March 2019), and LW 20 & 21 (Area 3C) (November 2019) were implemented during the audit period, the preparation of these plans in accordance with requirements of DA 60-03-2001 were considered in the 2020 IEA. Therefore, relevant SMPs considered in relation to adequacy and compliance with conditions of DA 60-03-2001 include:

- LW 19 (Area 3A) (March 2021);
- LW 19A (Area 3A) (September 2022); and
- LW 22 & 23 (Area 3C) (September 2021).

The management plans have been written and implemented in accordance with the consent conditions, with no findings from the audit necessitating revision to these plans as they related to Schedule 2, Condition 7 of DA 60-03-2001.

### **3.4.2 Watercourse Impact, Monitoring, Management and Contingency Plans**

While the WIMMCPs prepared for LW 16 (Area 3B) (March 2019), LW 17 (Area 3B) (February 2020), and LW 18 (Area 3B) (August 2020) were implemented during the audit period, the preparation of these plans in accordance with requirements of DA 60-03-2001 were considered in the 2020 IEA. Therefore, relevant WIMMCPs considered in relation to adequacy and compliance with conditions of DA 60-03-2001 include:

- LW 19 (Area 3A) (February 2021);
- LW 19A (Area 3A) (September 2022); and
- LW 22 & 23 (Area 3C) (September 2021).

The management plans have been written and implemented in accordance with the consent conditions, with no findings from the audit necessitating revision to these plans as they related to Schedule 2, Condition 4 of DA 60-03-2001.

### **3.4.3 Swamp Impact, Monitoring, Management and Contingency Plans**

While the SIMMCPs prepared for LW 16 (Area 3B) (March 2019), LW 17 (Area 3B) (February 2020), and LW 18 (Area 3B) (August 2020), and LW 21 (Area 3C) (August 2020), were implemented during the audit period, the preparation of these plans in accordance with requirements of DA 60-03-2001 were considered in the 2020 IEA. Therefore, relevant SIMMCPs considered in relation to adequacy and compliance with conditions of DA 60-03-2001 include:

- LW 19 (Area 3A) (February 2021);
- LW 19A (Area 3A) (October 2023); and
- LW 22 & 23 (Area 3C) (September 2021).

The management plans have been written and implemented generally in accordance with the consent conditions, with no findings from the audit necessitating revision to these plans as they related to Schedule 2, Condition 6 of DA 60-03-2001. However, the following issues and non-compliances have been identified.

### 3.4.3.1 Potential issues identified with SIMMCP TARPs

It is the opinion of the audit team technical specialist for Upland Swamps and Biodiversity (i.e. Land Eco) that improvements are required to SIMMCPs to ensure they are adequate to meet the requirements of Schedule 8, Condition 2(b)(iii), (d)(ii), and (g)(i).

The audit has identified several issues in relation to the effectiveness of monitoring and management measures including TARPs, including associated measures for measuring exceedance of predictions and subsidence performance criteria in relevant SMP Approvals. While the triggering of TARPs is generally reported in a satisfactory manner and adequately identify whether any minor impacts have occurred (irrespective of causality), the effectiveness of management measures and the adequacy of the TARPs themselves in preventing ongoing and cumulative impacts due to mining are considered by Land Eco to potentially require improvement as described below.

In 2022, eight of the ten impact monitoring swamps recorded at least one TARP trigger. Of particular concern, the Composition TARP has been exceeding predictions for eight years at Swamp 1B. Corrective management actions (CMAs) have included conducting ongoing research, trials, establishing offsets, and providing research funding. It is uncertain whether any of these CMAs are reducing the potential for continued triggering of TARPs. Specifically, where links to impacts from mining activities are considered likely, focus of CMAs is on research and offsets rather than avoiding and minimising. Rather than waiting for an exceedance to occur, Land Eco recommends consultation with regulatory agencies consider how CMAs may focus on pro-actively avoiding and minimising mining impacts. Therefore, **OF108** has been made. However, it is acknowledged:

- causality of impacts cannot be quickly determined, making avoiding and minimising impacts difficult for upland swamps; and
- rehabilitation of Upland Swamps is not generally considered feasible.

In this regard, pre-emptive offsetting of the upland swamps via the Strategic Biodiversity Offset is a suitable amelioratory action already undertaken by IMC. Where research undertaken through the SRRP or by any other research institute in NSW identifies methods for the feasible rehabilitation of upland swamps, these must be implemented.

In addition, in 2022, TARP levels have been triggered at seven of the fourteen impact transects monitored as part of the Littlejohn's Tree Frog Monitoring Program. Attachment H of the EOP report for LW 19 reports that it is possible some of these impacts pre-date mining. However, Attachment H also reports that despite increased rainfall, several impact monitoring transects are indicating reduced habitat conditions or reduced frog detection in the post-mining period. It is Land Eco's view that given the subsidence impacts being experienced across the catchment due to mining activities, there is potential this population of Littlejohn's Tree Frog (*Litoria littlejohni*) is being impacted by mining activities. Furthermore, the effectiveness of actions being undertaken under the SIMMCPs to avoid and minimise further impacts to this species is unclear. CMAs appear to be predominantly focused on monitoring the decline, rather than employing intervention measures.

It is noted, a revised SRRP dated May 2023 has been submitted to DPE and is currently awaiting determination. The May 2023 SRRP includes details of the restoration of Littlejohn's Tree Frog populations within the Dendrobium mine-lease area, which includes seven studies that contribute to and support mitigation and conservation actions tailored to the Littlejohn's Tree Frog. These studies are understood to have commenced and are being undertaken by the University of Newcastle. Therefore, **OF109** has been made. Further commentary is provided in Section 4.4.2.3.

Potential issues with the current structure of ecosystem functionality TARPs for SIMMCPs are noted in relation to the need for consecutive monitoring periods of trending decline to proceed through the three trigger levels before an exceedance of performance criteria is determined. As an example, the current structure of the TARPs could result in a Level 3 TARP after four consecutive monitoring periods of trending decline, followed by a fifth monitoring period without trending decline. Potential issues with this are:

- there does not appear to be a consideration to external factors (e.g. seasonal/climatic) that may have influenced a lack of trending decline in the fifth monitoring period; and
- if a trending decline was observed during sixth and seventh monitoring periods, subsequent to the fifth monitoring period, this would only trigger a Level 1 TARP without consideration to four of the last five monitoring periods showing a trending decline.

In this scenario, CMAs required would revert to those required for a Level 1 TARP despite actual impacts being in the order of a Level 3 TARP or greater, potentially resulting in greater cumulative impact. Further rounds of consultation with relevant stakeholders are recommended to consider how TARPs may be redesigned to address the above concerns, perhaps requiring consecutive monitoring periods without trending decline to step back down the TARP levels rather than simply resetting to baseline. Therefore, **OF10** has been identified (Section 5.2).

### 3.4.3.2 Non-compliances

Review of the SIMMCP for LW 19 (Area 3A) has identified an ANC for Schedule 3, Condition 6 of DA 60-03-2001 and Condition 16 of the SMP Approval for LW 19 in relation to performance measures for Swamp 15a, detailed in Table 6-1 of the SIMMCP. The following performance measures detailed in the SIMMCP are inconsistent with the requirements of Condition 8 of SMP Approval for LW 19:

- 'minor' changes in the size of the swamps, with the performance measure in the SMP Approval for LW 19 being 'negligible';
- 'minor' changes in the ecosystem functionality of the swamps, with the performance measure in the SMP Approval for LW 19 being 'negligible'; and
- 'no significant' change to the composition or distribution of species within the swamps, with the performance measure in the SMP Approval for LW 19 being 'negligible'.

As a result, non-compliances have been identified as follows:

- DA 60-03-2001:
  - Schedule 2, Condition 1: Non-compliance (low risk) – **NC01**;
  - Schedule 3, Condition 5: Non-compliance (low risk) – **NC03**; and
  - Schedule 3, Condition 6: ANC – **NC04**.
- SMP Approval for LW 19:
  - Condition 8: Non-compliance (low risk) – **NC10**; and
  - Condition 16: Non-compliance (low risk) – **NC11**.
- Schedule 8A, Part 2 Standard Conditions of the Mining Regulation 2016 (NSW) – Clause 4(1): Non-compliance (low risk) – **NC12**.

These non-compliances are discussed in more detail in Section 3.3 and Appendix D, with **CA01** identified in Section 5.

### 3.4.4 Noise Management Plan

The NMP has been prepared in accordance with compliance with requirements of the consent related to noise management, including the requirement for a Noise Monitoring Program. The plan has been updated during the audit period, with the current version dated August 2022.

An ANC was identified with Schedule 4, Condition 7 in relation to noise monitoring not being undertaken at the location as specified in the NMP, which was identified on 15 May 2021. The NMP was revised in May 2021 to indicate the current monitoring location.

The plan is considered adequate and no findings from the audit necessitate revision to this plan.

### 3.4.5 Air Quality and Greenhouse Gas Management Plan

The AQGHGMP has been prepared in accordance with compliance with requirements of the consent related to air quality and greenhouse gas management, including the requirement for an Air Quality Monitoring Program. The plan has been updated during the audit period, with the current version dated August 2023.

The plan is considered adequate and no findings from the audit necessitate revision to this plan.

### 3.4.6 Water Management Plan

The WMP including Site Water Balance, ESCP, Surface Water Monitoring Program and Groundwater Monitoring Program has been prepared in accordance with requirements of the consent related to water management. The plan has been updated during the audit period, with the current revision being Rev 8.0, dated 4 August 2023.

The plan is considered adequate and no findings from the audit necessitate revision to this plan.

### 3.4.7 Rehabilitation Management Plan

During the audit period, an extension to the end date of the Mining Operations Plan (MOP) (from 1 July 2015 to 2 July 2022) was submitted to and approved by the NSW Resources Regulator, with the MOP expiring on 2 July 2022.

The RMP, including draft rehabilitation objectives and criteria, was submitted to the NSW Resources Regulator on 30 June 2022, in accordance with rehabilitation reforms under the *Mining Act 1992*, through the Mining Amendment Regulation (Standard Conditions for Mining Leases – Rehabilitation) Regulation 2021.

The RMP was revised on 10 October 2022 to include requirements from, and remove reference to, the Landscape Management Plan. A further update was submitted on 30 June 2023 in relation to updates to rehabilitation objectives and final land-use rehabilitation plans following feedback from the NSW Resources Regulator. The objectives in Table 7 of DA 60-03-2001 have been adopted into the RMP.

A Forward Program from 1 July 2023 to 30 June 2026 was sighted during the audit.

The RMP has been prepared in accordance with requirements of the consent related to rehabilitation management.

The plan is considered adequate and no findings from the audit necessitate revision to this plan.

### 3.4.8 Bushfire Management Plan

The Bushfire Management Plan has been prepared in accordance with requirements of the consent related to bushfire management. The plan has been updated during the audit period, with the current revision being Rev 7.1, dated 18 August 2021.

The plan is considered adequate and no findings from the audit necessitate revision to this plan.

### 3.4.9 Traffic Management Plan

The TMP has been prepared in accordance with requirements of the consent related to traffic management. The plan has been updated during the audit period, with the current revision being Rev 6.0, dated April 2021.

The plan is considered adequate and no findings from the audit necessitate revision to this plan.

### 3.4.10 Lighting and Visual Amenity Management Plan

The LVAMP has been prepared in accordance with requirements of the consent related to visual impacts (i.e. visual amenity and lighting). The plan has been updated during the audit period, with the current revision being Rev 8.1, dated 15 May 2023.

The plan is considered adequate and no findings from the audit necessitate revision to this plan.

### 3.4.11 Waste Management Plan

The Waste Management Plan has been prepared in accordance with the requirements of the consent and EPL related to waste management. The plan has been updated during the audit period, with the current revision being Rev 7.0, dated July 2023.

The plan is considered adequate and no findings from the audit necessitate revision to this plan.



### 3.4.12 Environmental Management Strategy

The EMS has been prepared in accordance with the requirements of the consent. The plan has been updated during the audit period, with the current revision being Rev 6.0, dated April 2021.

The plan is considered adequate and no findings from the audit necessitate revision to this plan.

### 3.4.13 Aboriginal Cultural Heritage Management Plans

While the ACHMP prepared for Area 3A (Biosis 2009) was implemented during the audit period for LW 19, the preparation of this plan in accordance with requirements of DA 60-03-2001 was considered in a prior IEA. Therefore, relevant ACHMPs considered in relation to adequacy and compliance with conditions of DA 60-03-2001 include:

- LW 18 (Area 3B) (Niche, 9 February 2021); and
- LW 21, 22 and 23 (Area 3C) (Niche, 17 May 2022).

The management plans have been written and implemented in accordance with the consent conditions, with no findings from the audit necessitating revision to these plans.

## 3.5 Complaints and reportable incidents

### 3.5.1 Complaints

Review of complaints data for the audit period indicate a downward trajectory for complaints, with complaints reducing by more than 50% in each Annual Review period. A summary of complaints, including complaint type is provided in Table 3.7.

Table 3.7 Total complaints by year in the audit period

| Complaint type         | FY21 (during audit period) | FY22      | FY23      |
|------------------------|----------------------------|-----------|-----------|
| Noise                  | 86                         | 40        | 19        |
| Dust                   | 3                          | 0         | 0         |
| Other                  | 1                          | 3         | 1         |
| Stakeholder engagement | 11                         | 0         | 0         |
| Environment            | 5                          | 3         | 1         |
| Traffic                | 19                         | 6         | 3         |
| <b>Total</b>           | <b>125</b>                 | <b>52</b> | <b>24</b> |

### 3.5.2 Reportable incidents

Review of relevant documentation and conduct of audit interviews indicates no incidents have occurred during the audit period, with the following noted:

- FY20: No incidents occurred that caused (or may have caused) material harm to the environment during the audit period.
  - It is noted a Penalty Notice in the amount of \$15,000 was issued by the EPA on 18 March 2021 for the uncontrolled release of water from the Kemira Valley Sediment Pond that occurred on 10 August 2020. The incident occurred during the 2020 IEA period.
  - The EPA completed its investigation of the incident and determined that Dendrobium Coal did not comply with Condition L1.1 of EPL 3241. The non-compliance associated with the Penalty Notice occurred during the 2020 IEA period.
- FY21: No incidents occurred that caused (or may have caused) material harm to the environment during the audit period.
- FY22: No incidents occurred that caused (or may have caused) material harm to the environment during the audit period.
- FY23: No incidents occurred that caused (or may have caused) material harm to the environment during the audit period.

## 4. Environmental performance

Conduct of the audit has identified a high-level of compliance with relevant consents, leases and licences for Dendrobium Mine, with relevant management plans and monitoring programs implemented and continuously improved over time in consultation with relevant stakeholders.

Generally, most non-compliances identified in the audit related to:

- existing non-compliances already identified and reported by IMC; or
- ANCs which do not present the risk of environmental harm.

Non-compliances which were generally categorised as low risk and not previously identified/reported by IMC were primarily in relation to the same issue related to subsidence performance measures for Swamp 15a, discussed in more detail in Section 4.4.2.

A selection of photographs from the site inspection are provided in Appendix J.

### 4.1 General environmental management

The following general observations are made based on evidence from the site interviews supported by onsite inspection:

- equipment lay down areas are tidy and free of contamination;
- oil recycling areas and wash down area were in good condition and tidy;
- workshops were relatively free of spills and were tidy and well organised;
- the auditors observed the use of dust suppression at the Dendrobium Pit Top, with a sweeper also observed to be available on site; and
- the area of the landslip had been rehabilitated, with associated erosion under control and clean water diversions reinstated.

### 4.2 Rehabilitation

#### 4.2.1 General rehabilitation activities during the audit period

Review of documentation indicates compliance with the conditions of DA 60-03-2001 related to rehabilitation during the audit period, with the following rehabilitation activities undertaken:

- FY21:
  - Rehabilitation cost estimate (RCE): The RCE for the Dendrobium operations was reviewed during the reporting period. This RCE was provided as Appendix B to the FY21 Annual Review.
  - Progressive rehabilitation: Rehabilitation of legacy sites (i.e. Summit Park Switchyard, Mt Keira [approximately 150 m<sup>2</sup> hand-seeded with grass seed], O'Brien's Gap Switchyard [approximately 300 m<sup>2</sup> hand-seeded with grass seed], Greenhills Substation [approximately 2,000 m<sup>2</sup> hydro-mulched]).
  - Completion of rehabilitation: Completed rehabilitation areas increased by 0.12 ha, with 7.97 ha in financial year (FY20) and 8.09 ha in FY21.

- FY22:
  - RCE: The RCE for the Dendrobium operations was reviewed during the reporting period. This RCE was provided as Appendix B to the FY22 Annual Review.
  - Progressive rehabilitation: Investigations and studies were conducted into the removal of redundant infrastructure associated with O'Brien's Drift, particularly at the KVCLF.
  - Completion of rehabilitation: Completed rehabilitation areas increased by 32.91 ha, from 8.09 ha in FY21 to 41 ha in FY22, with completion of a rehabilitation campaign to demolish and rehabilitate redundant powerline circuits that traverse urban and rural residential areas generally located to the East of the Illawarra Escarpment State Conservation Area. To conclude this phase of rehabilitation work, a part-lease relinquishment application for CCL 768 was lodged with the NSW Resources Regulator. The report was accepted in July 2022, with partial lease relinquishment complete.
- FY23:
  - Progressive rehabilitation:
    - Vegetation removal and topsoil stripping occurred at the Ventilation No. 2 and 3 Shafts in preparation of gas management and ancillary infrastructure. This rehabilitation was sighted during the site inspection completed for the audit.
    - Land preparation works were undertaken for a land slip that occurred on the western boundary of the Dendrobium Pit Top. This included installation of soil nails, shotcrete and soil reinforcing mesh as designed by a specialist engineering consultant. Works commenced in FY23 and were completed in FY24.
    - Investigations and studies continued into the removal of redundant infrastructure associated with O'Brien's Drift. These included a Hazardous Building Materials Survey, engineering for belt removal and design work associated with the Endeavour Energy powerline relocation.
    - A Hazardous Building Materials Survey was undertaken for the Corrimal No. 3 site and Cordeaux Pit Top redundant coal bins, which are planned to be removed in FY24/FY25.
  - Rehabilitation monitoring: No rehabilitation monitoring was undertaken in the reporting period at surface facilities, with no recent rehabilitation undertaken.
  - Completion of rehabilitation: Completion of progressive rehabilitation in relation to exploration drilling within CCL 768 focussing on sites drilling in FY22 and FY23, with rehabilitation completed at the cessation of drilling and/or monitoring. Rehabilitated areas are monitored for success over several years.

#### 4.2.2 WC21 and Donalds Castle Creek Rehabilitation Plan

The *WC21 and Donalds Castle Creek Rehabilitation Plan* is required by Condition 15 of the SMP Approvals for LW 17 and LW 18.

Review of documentation during completion of the 2023 IEA indicates rehabilitation trials as part of the *WC21 and Donalds Castle Creek Rehabilitation Plan* were approved during the FY22 Annual Review period, with the trial rehabilitation program commencing November 2021 in relation to drilling and grouting of the two pools in WC21 (i.e. Pool 24 and Pool 25). However, these works were paused in December 2021 due to restricted access to WaterNSW Special Area during wet weather.

Ongoing La Nina conditions restricted access to the Metropolitan Special Areas until September 2022 and lead to track damage requiring repair prior to recommencement of works. Following track repairs the grouting trial resumed and was completed in November/December 2022.

The post remediation verification works were undertaken in December 2022 and January 2023 and involved drilling of two post verification holes using a small track mounted drill rig. Geotechnical logging, geophysical logging and packer testing was also undertaken on the post grouting verification holes.

An update of the *WC21 and Donalds Castle Creek Rehabilitation Plan* (Rev 4, 31 January 2023) was completed to report on progress of rehabilitation trials undertaken at Pool 24 and Pool 25, with approval provided 24 May 2023. With completion of these works, post-grouting monitoring of pool water levels commenced and was required to be undertaken for a period of six (6) months prior to undertaking an assessment of the outcome of the trial. This assessment required consideration of the post remediation verification hole logging, piezometer data (S2337/S2338) and pool water level data collected during the monitoring period.

Correspondence from DPE approving the revised *WC21 and Donalds Castle Creek Rehabilitation Plan* (Rev 4, 31 January 2023) noted:

- a revision to the *WC21 and Donalds Castle Creek Rehabilitation Plan* is required to report on the results of the trial and needed to be submitted to DPE by 31 August 2023; and
- the BCS advice on the broader rehabilitation plan needing to be considered and responded to during revision to the *WC21 and Donalds Castle Creek Rehabilitation Plan*.

The revised *WC21 and Donalds Castle Creek Rehabilitation Plan* (Rev 5, 31 August 2023) was submitted on 31 August 2023, with the following noted:

- evidence of receipt by DPE provided on 31 August 2023; and
- response from WaterNSW provided 27 September 2023.

The results of post-grouting monitoring of pool water levels at Pool 24 and Pool 25 reported in the *WC21 and Donalds Castle Creek Rehabilitation Plan* (Rev 5, 31 August 2023 – currently awaiting DPE approval) indicate the grouting has potentially been unsuccessful. However, the *WC21 and Donalds Castle Creek Rehabilitation Plan* (Rev 5, 31 August 2023) proposes continuation of monitoring until average or above average rainfall occurs, with IMC committing to review rainfall data every six months to determine if average, or above average rainfall during the period has occurred to repeat the assessment. The assessment would then be repeated, and the *WC21 and Donalds Castle Creek Rehabilitation Plan* (Rev 5, 31 August 2023) would be updated with the results. In addition, results from the trial will be included in relevant EOP reports and the FY24 Annual Review.

Correspondence from WaterNSW provided on 27 September 2023 indicates support for the above.

There is uncertainty as to when average or above average rainfall would be received. In addition, the auditor considers average or above average rainfall is potentially unlikely to result in significantly different monitoring results to those currently reported in the *WC21 and Donalds Castle Creek Rehabilitation Plan* (Rev 5, 31 August 2023). Therefore, **OFI05** and **OFI06** have been identified, with **OFI05** including consideration to commencement of rehabilitation trials at Donalds Castle Creek (i.e. due to potential for different watercourses to respond differently to remediation attempts). These OFIs have been made with consideration to the requirements of Schedule 4, Condition 18A of DA 60-03-2001, which requires IMC to remediate physical damage to watercourses subject to subsidence impacts as soon as reasonably practicable.

## 4.3 Water management

### 4.3.1 Discharge water quality limits

A minor non-compliance was identified with regard to discharge water quality limits for zinc (of 0.4 mg/L) detected during investigations at LDP 5 on 13 October 2021, resulting in a non-compliance (low risk) for Schedule 4, Condition 12 of DA 60-03-2001 (**NC07**) (Section 3.3.1) and Condition L2.4 of EPL 3241 (**NC08**) (Section 3.3.2).

While this exceedance was noted, it did not have the potential for material harm to the environment as defined under section 147 of the *Protection of the Environment Operations Act 1997* and was not considered to have resulted in non-compliance with section 120 of the *Protection of the Environment Operations Act 1997*.

Therefore, as this was an unrepeated event, a CA is not deemed relevant. Furthermore, it is understood from audit interviews that IMC are developing a protocol around limiting brine discharge from Appin North water treatment plant when the Dendrobium Mine is not actively discharge or discharging minimal quantities.

## 4.4 Subsidence

### 4.4.1 Watercourse impact management and monitoring

#### 4.4.1.1 Non-compliance: Rockfall at Waterfall 54

The EOP reporting for LW17 indicates an exceedance of greater than 'negligible' impact due to rockfall at Waterfall 54 (i.e. Impact Site No. DA3B\_LW17\_041) on Wongawilli Creek, with a 4.5 m<sup>3</sup> rockfall occurring. Photographs detected the fall occurred between 6 October 2021 and 28 October 2021. No visual changes to water flow over the waterfall was detected, with Level 1 iron-staining impact noted in the EOP report for LW 18.

It is noted that the corner of LW17 encroached within approximately 440 m from Waterfall 54 and valley closure movements were between 17 mm and 25 mm, which were within the predicted closure of less than 27 mm.

The fall was not detected until 2 August 2022 and was difficult to identify on photographic evidence, including during conduct of the site inspection for this audit. It is considered that as the LW did not cause closure greater than predicted, and the fall has not caused changes to the surface flow path, the impact is only 'minor' but greater than 'negligible'.

Therefore, a non-compliance (low risk) (**NC09**) with the requirements of Condition 13 of the SMP Approval for LW 17 due to the requirement for 'negligible' impacts on Waterfall 54 has been noted. However, there was no non-compliance with Schedule 3, Condition 2 of DA 60-03-2001 as the impact was not greater than 'minor'.

The CMAs completed for Waterfall 54 include:

- impact report submitted to regulation authorities and site visit offered to advise on appropriate CMAs;
- investigation into reasons for the exceedance completed by MSEC in 2022;
- continuation of monitoring program and review frequency; and
- reporting of impact in EOP report for LW 18.

Discussions around further CMAs at Waterfall 54 are underway.

#### 4.4.1.2 Impact to Sandy Creek and the associated waterfall

No impact to Sandy Creek or the associated waterfall occurred during the audit period because of extraction in Area 3A (i.e. LW 19).

#### 4.4.1.3 Water flows and pool levels

Since the EOP report for Longwall 15 (in 2020), the assessment of mining effects on surface water flow around Area 3B has been reported in EOP reports using TARP methods which have been agreed through consultation with the various responsible agencies and set out in the Area 3B WIMMCP (Wongawilli Creek), and Area 3A WIMMCP (Sandy Creek). The assessment involves comparison of flow hydrographs between potentially impacted sites and reference sites, focussing on the following:

- A – General hydrological behaviour, including change in flow exceedance behaviour compared to reference sites (greater proportion of time with lower flow than expected based on Reference Q<sub>5</sub>ile);
- B – Relative change in the frequency of cease-to-flow days compared to that at reference sites (Greater proportion [%] of time that cease-to-flow conditions occur);
- C – Relative change in median flow ('Q<sub>50</sub>') compared to reference site flows; and
- D – Assess whether observed dry pools and 'cease-to-flow' conditions along the 'middle reach' of Wongawilli Creek between WWU and WWL gauging stations are anomalies.

The agreed performance measures for 'minor' impacts are defined as follows:

- For Wongawilli Creek – Assessment Methods C and D, to be compared against predictions made in contemporary groundwater modelling conducted to the satisfaction of the Secretary to assess whether effects that cannot be explained by natural variability 'exceed prediction'.
- For Sandy Creek – Assessment Method C to be compared against predictions made in contemporary groundwater modelling conducted to the satisfaction of the Secretary to assess whether effects that cannot be explained by natural variability 'exceed prediction'.

These measures are reported in the EOP reports, with no exceedances reported in the audit period. No data has been presented since the LW19 EOP, which was issued in July 2023. Subsequent data is not available as reporting for LW21 falls outside the audit period, with the EOP report not due for submission until December 2023.

Due to the recommencement of mining in Area 3A, Sandy Creek and tributaries were assessed formally for the first time in the EOP report for LW 19. TARPs for surface water hydrology were triggered at Sandy Creek (SCL2/GS2122205) due to a minor change in cease-to-flow frequency beyond the baseline. However, this does not represent an exceedance of performance criteria.

#### 4.4.1.4 Water quality

Water quality monitoring is carried out at surface water sampling sites, with monitoring frequency varying between sites (i.e. approximately weekly or monthly), with results compared to the triggers in the WIMMCPs.

Exceedance of the water quality performance measures is defined:

- for Lake Cordeaux – in the Area 3C WIMMCP at monitoring site LC5\_S1:  
*mining results in two consecutive exceedances or three exceedances of the  $\pm 3$  standard deviation level (positive for Electrical Conductivity, negative for pH and Dissolved Oxygen) from the baseline mean within six months.*
- for Avon Reservoir in the Area 3B WIMMCP monitoring site LA4:  
*mining resulting in exceedance of the  $\pm 3$  standard deviation level (positive for Electrical Conductivity, negative for pH and Dissolved Oxygen) from the baseline mean, for a minimum of two consecutive monitoring events.*

While the EOP reports for LW 16 to 18 record iron staining and elevated iron concentrations in some affected tributaries, the water quality monitoring at Lake Avon and Lake Cordeaux notes only occasional spikes in dissolved iron, manganese, aluminium and silicon during dry periods. Therefore, the performance measures for the minimal impact on quality of inflows to Lakes Cordeaux and Avon have been met.

No adverse changes to water quality have been detected to date in Lake Avon and Lake Cordeaux (HGeo, 2022 & 2023).

The water quality performance measure is also applied at the FR6 monitoring sites on both Donalds Castle Creek and Wongawilli Creek. Transient increases in elevated electrical conductivity and metals were recorded in Donalds Castle Creek, with levels declining to baseline following higher rainfall in 2020.

At LA4\_S1, which is located near Lake Avon on a minor tributary previously impacted by mining of LW12 to LW14, water quality TARPs continued to be triggered for dissolved oxygen, electrical conductivity and pH during extraction of LW16 through to LW19 and were noted again in the FY23 Annual Review. Given the location, the impact during the audit period is considered minor.

The FY23 Annual Review notes concentrations of iron, manganese, zinc and sulphate ion were slightly above baseline in Sandy Creek (Rockbar 5). Review of *EOP Surface Water and Shallow Groundwater Assessment: Longwall 19 (Area 3A)* prepared by HGeo Pty Ltd in 2021 indicates the increase in dissolved metals is related to upstream inputs from tributary SC10C, which was affected by prior mining of LW 7 and 8.

#### 4.4.1.5 Lake inflows

In 2019 the Independent Expert Scientific Committee (IESC) on Coal Seam Gas and Large Coal Mining Development requested the surface water flow TARPs include the complete post-mining period, not just for each LW. Measured surface flows into Lake Avon were based on an agreed method in estimating flow losses and included gauged and ungauged sub-catchments.

The assessment indicated total losses were approximately 0.17 ML/d or 0.9% of median Lake Avon inflow (Q50), provided by WaterNSW between 2015 to 2020. The losses were assessed to be within prediction given in the approved LW 17 and 18 SMP Applications.

The Q50 inflow loss to Lake Cordeaux was 0.19 ML/d or 1.3% between 2015 to 2023. The losses were assessed to be within prediction given in the approved LW 19, and LW 22 & 23 SMP Applications.

The Q50 inflow to the Cordeaux River at its confluence with Wongawilli Creek was unchanged and satisfied the performance measure.

The EOP reports for LW 16 to 18 all state that performance measures for the quantity of inflows to Lakes Cordeaux and Avon have been complied with.

#### 4.4.1.6 Lake storage losses due to groundwater leakage

There is no observational data for making reliable estimates of reservoir losses between the lake and groundwater.

The *WaterNSW Asset Protection Plan (APP) for Longwalls 19A, 22 and 23* (August 2023), granting conditional approval by WaterNSW on 22 August 2023, states that Dams Safety NSW imposes a 'Tolerable Loss of Dam Water' of no more than 1 ML/day long-term and 2 ML/day short-term for the Cordeaux Reservoir and a sustained loss of 1 ML/day for Avon Reservoir (Dams Safety Committee, 2014).

Lake storage losses cannot be measured directly, so they have been estimated with groundwater models that have been calibrated to measured borehole vibrating wire piezometer and horizontal permeability data for pre and post LW mining effects.

The *WaterNSW Asset Protection Plan (APP) for Longwalls 19A, 22 and 23* outlines the results of peer-reviewed groundwater modelling, which estimates (mean) total leakage from storages, and estimates of surface water losses from streams.

Piezometric data at Dendrobium indicates water table drawn-down effects in Hawkesbury Sandstone extend for up to 1.2 km from the three LW extraction areas with horizontal rock mass permeability increasing by 0.1 to 1.5 orders of magnitude up to 300 m from LW goaf (measured post-mining hydraulic conductivity,  $k_h \sim 0.06$  m/d). IMC also conducted a detailed hydrogeological drilling investigation across the Elouera fault between Lake Avon and LW18. It was concluded that the fault was unlikely to form a conduit to flow and was confirmed by the absence of anomalous drawdown effects (see below).

The latest estimated daily water loss estimates from Lake Avon after Area 3B LWs 12 to 18 range from 0.15 to 0.89 ML/day and are below the approved 'negligible' limit of 1 ML/day. The estimate is supported by low levels of 'new' water (with tritium and 14C) in mine inflow water (HGEO, 2022).

Estimated daily water loss estimates from Lake Cordeaux after Areas 1, 2, 3A, and 3B LWs 1 to 18 of 0.04 to 0.1 ML/day is also below the approved 'negligible' limit of 1 ML/day (SLR, 2020).



#### 4.4.1.7 Groundwater

Subsurface fracture height models, horizontal and vertical permeability enhancement estimates and borehole vibrating wire piezometer data have been reviewed against mine inflows and rainfall data for audit period. Calibrated groundwater flow models conservatively predict water table draw down versus measured.

Research including height of fracture zone measurements above LW9 and potential seepage rates from Lake Avon, including the influence of the Elouera Fault have been completed by HGEO & Parsons Brinkerhoff (now WSP) in Area 3B. Independent review of height of Depressurisation estimates were prepared for DPI by Hebblewhite, B. and for WaterNSW by IEPM.

#### 4.4.2 Upland Swamps and Biodiversity

##### 4.4.2.1 Non-compliance: Adopted performance measures for Swamp 15a

The audit determined non-compliances in relation to documentation of subsidence performance measures for Swamp 15a in the SIMMCP for LW 19, which are inconsistent with the requirements of the SMP Approval for LW 19.

This has resulted in these performance measures being incorrectly adopted in EOP reporting for LW 19. The incorrect documentation of these performance measures as 'minor' and 'no significant change', instead of 'negligible', has resulted in development and implementation (i.e. triggering) of TARPs for LW 19 that are not correctly considering potential impacts and potential exceedance of performance measures for Swamp 15a.

It is noted that the performance measures for Swamp 15a have been correctly adopted in the LW 19A SIMMCP, which was approved 25 October 2023.

Further discussion is provided at:

- Section 3.3.1: Schedule 3, Conditions 5 and 6 of DA 60-03-2001; and
- Section 3.3.3.2: Condition 8 of the SMP Approval for LW 19.

##### 4.4.2.2 Swamp Rehabilitation Research Program

WaterNSW raised concerns in relation to projects under the SRRP not being related to swamp research, noting:

*No swamp remediation trials were done as originally proposed as pre-trial investigations indicated remediation of swamps not to be feasible. Focus is now on research into swamp hydrology changes due to mining and South32 agreed to take over and allocate funds from the SRRP for continuation of swamp hydrology investigations initially funded and managed by WaterNSW.*

IMC has provided the following response in relation to these concerns, citing previous consultation with WaterNSW:

*Investigation into connected fracturing in strata above mining is critical for swamp rehabilitation. This program identifies the height of fracturing from the seam toward the surface and from the surface down to the constrained zone. With agreement from DPE, this work in the Hawkesbury Sandstone contributed \$736,230 toward the \$3.5M. This contribution is justified on the basis that the swamps are located within this geological unit.*

##### **SRRP Objectives**

*Table 1 of the SRRP identifies where objectives and conditions of the Area 3B SMP Approval are addressed.*

*The Independent Expert Panel for Mining in the Catchment (IEPMC) noted that currently there is no proven method to rehabilitate swamps or evidence that swamps can be remediated (IEPMC 2019).*

*In correspondence between WaterNSW and DPE (27 September 2019), WaterNSW requested the following '... that the Department require South32 to incorporate the proposed monitoring equipment upgrades to WRL's Swamp Monitoring Project into the Dendrobium SRRP.*

*WaterNSW considers that the proposed equipment upgrades for the Swamp Monitoring Project should form part of the SRRP as it is compatible with the intent and scope of the SRRP.*

WaterNSW has had further discussions with representatives of South32 who were broadly supportive of this proposal, but are concerned that the funds required for the Swamp Monitoring Program (approximately \$500,000) would divert funding away from the currently proposed swamp remediation efforts.

Given the limited likelihood of successfully remediating swamp impacts, WaterNSW has no objection to funds being diverted under the SRRP to implement the monitoring equipment upgrades identified in WRL's Swamp Monitoring Project.

In line with this correspondence between WaterNSW and DPE, South32 agreed to and has funded the UNSW Swamp Water Balance Study. Subsequently, the Longwall 18 SMP Approval notes; previous requirements to implement a trial of directional drilling and grouting underneath targeted swamps has been removed from paragraph (d) of this condition.

Research contributing to the SRRP has been focussed on quantifying impacts in accordance with WaterNSW and DPE consultation and direction.'

It is anticipated that WaterNSW would advise IMC of any residual concerns associated with the goals of the SRRP.

#### 4.4.2.3 Biodiversity offset area

WaterNSW raised concerns/issues in relation to the Biodiversity Offset Strategy for Dendrobium Mine, specifically:

*...offset is not benefitting the impacted catchment or Special Areas and WaterNSW considers that the continued use of the Offset has resulted in adoption of mine plans, in the SMPs under review in the audit, for maximum extraction under/near upland swamps.*

Land Eco agree offsetting outside the impacted catchment or Metropolitan Special Areas does not result in optimal ecological outcomes for the impacted catchment., given the existing approval, and relative proximity of the offsets within the same Interim Biogeographic Regionalisation for Australia sub-region, it is broadly considered adequate and in line with current practice under the NSW Biodiversity Offset Scheme.

The use of these offsets to obtain further approval (e.g. Modification 7 of DA 60-03-2001) is at the discretion of DPE, in consultation with the BCS. While impacts to swamps due to mining activities at Dendrobium Mine have occurred, all swamps have been offset regardless of whether impacts do or do not occur. This is considered an adequate outcome.

Notwithstanding, where there are mining impacts to swamps that have not already been offset (e.g. Swamp 15a), this audit has identified **OFI08** for sourcing additional strategic offsets for Coastal Upland Swamps within the impacted catchment or Metropolitan Special Areas.

Furthermore, the audit notes that it is reported that the Strategic Biodiversity Offset includes frog habitat within Maddens Plains and was considered a suitable offset for impacts on watercourses that have exceeded those predicted in the SMP. However, this is different from offsetting direct impacts to Littlejohn's Tree Frog. While the habitat at Maddens Plains may be suitable for Littlejohn's Tree Frog, it has not been confirmed during the audit if this supports an existing population of Littlejohn's Tree Frog. It is understood that Niche have been engaged to conduct further investigations into the conservation values of the Maddens Plains offset area which include surveys for Littlejohn's Tree Frog. IMC are required to provide six monthly reports to DPE on the status and outcome of the surveys and studies detailed in the SRRP as required by the Longwall 19A SMP. The findings of these studies must be used to inform relevant agencies on the adequacy of the offsetting and/or mitigation requirements for any threatened species impacted by mining at Dendrobium. Therefore, **OFI09** has been identified for potentially acquiring additional offsets for direct impacts to the Littlejohn's Tree Frog due to mining (e.g. retiring of like-for-like species credits under the NSW Biodiversity Offset Scheme). This OFI is contingent on confirmation whether an existing population of Littlejohn's Tree Frog is confirmed to exist at the Maddens Plain offset. IMC have engaged Niche to investigate whether such a population occurs. Land Eco consider this would be an adequate approach for offsetting impacts of any future mining operations under DA 60-03-2001.

## 4.5 Air quality

IMC monitors air quality in accordance with the approved AQGHGMP (IMC, 2021). Air quality monitoring has historically included high volume air samplers (HVAS) and dust deposition gauges; however, the HVAS were replaced by real-time monitors in July 2021. The AQGHGMP has provision for monitoring using dust deposition gauges and HVAS, if required.

Concentrations of PM<sub>10</sub> are measured directly, in real-time, at two locations using photometers. Total suspended particulates (TSP) concentrations and deposited dust levels are estimated from the PM<sub>10</sub> concentrations. The monitoring carried out in the audit period (16 Oct 2020 to 16 Oct 2023) has shown:

- annual average TSP concentrations have not exceeded 90 µg/m<sup>3</sup>, based on monitoring and estimates from PM<sub>10</sub> levels;
- annual average PM<sub>10</sub> concentrations have not exceeded 30 µg/m<sup>3</sup>;
- 24-hour average PM<sub>10</sub> concentrations exceeded 50 µg/m<sup>3</sup> on one day (13 Sep 2023). The result was investigated, and the cause was identified as a regional event, with measured PM<sub>10</sub> concentrations at the DPE's Kembla Grange monitor also exceeding 50 µg/m<sup>3</sup>; and
- annual average deposited dust levels have not exceeded 4 g/m<sup>2</sup>/month, based on monitoring and estimates from PM<sub>10</sub> levels.

The monitoring has shown that operations at Dendrobium Mine have not resulted in additional exceedances of the criteria listed in Tables 4 to 6 of Schedule 4, Condition 9 of DA 60-03-2001 at locations representative of sensitive receivers.

The AQGHGMP includes a protocol for evaluating compliance with the air quality impact assessment criteria. This protocol is based on results from the monitoring program as well as from regional monitoring by the DPE.

IMC undertakes PM<sub>10</sub> monitoring at the points identified as EPA Point 20 and EPA Point 21. Data from these monitors have been obtained and reviewed. Data from the monitoring (which are recorded in spreadsheet form) were reviewed. The installations were inspected on 9 October 2022 and no issues were identified. The inspections and reviews confirmed that IMC is carrying out the monitoring in accordance with the Air Quality Monitoring Program in the AQGHGMP.

In addition, the meteorological station was inspected on 9 October 2023 and a sample of meteorological data (August to October 2023) was reviewed. This showed:

- meteorological stations are not located strictly in accordance with the Approved Methods for the Sampling and Analysis of Air Pollutants in NSW but have been positioned as best as possible given the site constraints, surrounding infrastructure, terrain and vegetation. The Dendrobium Pit Top meteorological station is situated on the top of buildings, approximately 6 to 7 m above ground, with the site inspection completed on 9 October 2023 indicated the meteorological station is potentially not of sufficient height to avoid influence of the building in measuring local winds.
- the meteorological stations collect relevant data to assist with evaluating air quality monitoring results. The data include wind speed, wind direction, temperature, rainfall and barometric pressure, collected at 10-minute intervals.

IMC operates a suitable meteorological station at the Dendrobium Pit Top which generally meet the requirements of the *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW*. Therefore, **OF104** has been identified in Section 5.2 for investigating an increase of the height of the meteorological station to improve exposure (e.g. to approximately 10 m).

## 4.6 Noise management

A specialist noise and vibration auditor (MAC) was requested by the DPE to review the site's compliance with its noise management performance related requirements from conditions of DA 60-03-2001.

### 4.6.1 Noise exceedances

Review of noise monitoring data has identified exceedances of noise criteria as follows:

- 8 February 2021 exceedance of day period LA<sub>eq(15min)</sub> criterion at R39a – not deemed to be a non-compliance in accordance with INP (<2dBA exceedance);
- 30 July 2021 exceedance of day period, evening period and night period LA<sub>eq(15min)</sub> criteria, and exceedance of LA<sub>1(1min)</sub> criterion at R39a – deemed to be a non-compliance. Corrective actions implemented including removal of locomotive from service and signage erected to remind personnel to close door to compressor room;
- 9 February 2022 exceedance of evening period LA<sub>eq(15min)</sub> criterion at R39a – deemed to be a non-compliance. Warning letter issued by DPE. An investigation by IMC indicated that the noise was from rail movements on the Kemira Valley rail line, which is not relevant to noise criteria under Schedule 4, Condition 1 of DA 60-03-2001. As a result the NMP was updated to differentiate rail noise from surface operations;
- 2 June 2022 exceedance of evening period and night period LA<sub>eq(15min)</sub> criteria at R39a – not deemed to be a non-compliance in accordance with INP (<2dBA exceedance). Temperature inversions and drainage flow noted;
- 3 June 2022 exceedance of LA<sub>1(1min)</sub> criterion at R6a – not deemed to be a non-compliance in accordance with INP (<2dBA exceedance). Temperature inversions and drainage flow noted;
- 10 August 2022 exceedance of evening period and night period LA<sub>eq(15min)</sub> criteria at R39a – not deemed to be a non-compliance in accordance with INP (<2dBA exceedance). Source-to-receiver winds noted;
- 10 August 2022 exceedance of LA<sub>1(1min)</sub> criterion at R6a – not deemed to be a non-compliance in accordance with INP (<2dBA exceedance);
- 15 February 2023 exceedance of night period LA<sub>eq(15min)</sub> criterion at R39a – not deemed to be a non-compliance in accordance with INP (<2dBA exceedance). Source-to-receiver winds noted; and
- 13 May 2023 exceedance of night period LA<sub>eq(15min)</sub> criterion at R39a – not deemed to be a non-compliance in accordance with INP (<2dBA exceedance). Temperature inversion noted.

Exceedances of noise criteria in Schedule 4 Condition 1 by 2 dBA or less were assessed in accordance with the former INP during the audit period, with the INP stating that a 2 dBA exceedance does not constitute a non-compliance with noise impact assessment criteria. However, in a warning letter issued on 5 June 2023 (for the exceedance notification provided on 30 May 2023), DPE advised exceedances of criteria in Schedule 4, Condition 1 of DA 60-03-2001 are considered non-compliances (due to the former INP not being referenced in Schedule 4, Condition 1 of DA 60-03-2001) and should be reported as such in Annual Reviews.

Review of relevant notes for Schedule 4, Condition 1 of DA 60-03-2001 during conduct of the audit identified reference to the INP. Therefore, the audit has concluded application of the INP is appropriate and in accordance with Schedule 4, Condition 1 of DA 60-03-2001.

It is also noted, noise exceedance events often occurred at the time of temperature inversion and/or source-to-receiver wind directions. Due to the use of the Port Kembla Bureau of Meteorology station (ID 068253), which is unlikely to experience noise enhancing conditions (due to its coastal location), there is potential some of the exceedances are occurring when there would be noise enhancing conditions occurring at the KVCLF and/or Dendrobium Pit Top. The result being that IMC are potentially reporting noise exceedances that are not true exceedances.

## 4.6.2 Non-compliance

### 4.6.2.1 Noise exceedance resulting in non-compliance

Noise monitoring identified one exceedance that was non-compliant with noise criteria in Schedule 4, Condition 1 of DA 60-03-2001 during the audit period on 13 May 2023, resulting in a non-compliance (low risk) (i.e. **NC05**). As this was an unrepeated event, a CA has not been deemed necessary.

### 4.6.2.2 Noise monitoring

An ANC (**NC05** and **NC06**) was identified with Schedule 4, Condition 7 of DA 60-03-2001 in relation to noise monitoring not being undertaken at the approved monitoring location for R39a, as specified in the NMP. This was identified on 15 May 2021 and the NMP was revised in May 2021 to indicate the current monitoring location. Assessment of monitoring locations completed by Spoke Acoustics (dated 29 October 2021) was sighted, including subsequent response by DPE on 4 November 2021.

The current NMP was reviewed during the audit, with all monitoring locations reviewed against the approved NMP and found to be compliant.

## 4.6.3 General noise management

Review of relevant documentation and conduct of interviews indicates noise management is appropriately undertaken, with:

- mitigation and management measures to reduce noise generation implemented, including:
  - an investigation into locomotive tonal noise (i.e. the 2022 Dendrobium Rail Haulage Supplementary Assessment);
  - shielding and barriers to equipment (e.g. compressors);
  - a noise audit to identify noisy plant and equipment (i.e. Sound Power Level Investigation completed by Spoke Acoustics in 2023);
  - design of site to minimise reversing;
  - implementation of real-time monitoring system; and
  - night curfews.
- the NMP describing the noise management and mitigation measures that are undertaken at the site; and
- Annual Reviews describing management measures that have been implemented and the monitoring program to assess the effectiveness of the measures.

## 4.7 Aboriginal cultural heritage

IMC prepared/implemented the ACHMP documents during the audit period:

- LW 19 (Area 3A) (Biosis 2009);
- LW 18 (Area 3B) (Niche, 9 February 2021); and
- LW 21, 22 and 23 (Area 3C) (Niche, 17 May 2022).

In addition, Aboriginal cultural heritage management for LW 17 (Area 3B) was included in *Dendrobium Area 3B SMP* (PDM-001-9.6.1D, Rev. B).

Thirteen cultural heritage sites have been identified and recorded in SMPs. They include rock shelters with or without Art and Deposits, grinding grooves and Isolated Artefacts.

Estimates of subsidence effects and potential impacts were provided for each site in SMPs, with the following noted:

- Browns Road Site 32 (AHIMS ID# 52-2-1646) (Rock Shelter with Art [Low Archaeological Significance and High Cultural Significance]) located within RMZ of LW6 & 19 (Area 3A). No impacts have been recorded after LW mining (Niche 2023);
- Site DM21 (Rock Shelter with Art and Deposit) was impacted (diagonal & vertical cracking through north of shelter but away from Art) after LW15 with no further impacts after LW16 noted. The shelter was permitted to be impacted under Section 90 of the *National Parks and Wildlife Act 1974* (NSW); and
- Sandy Creek Road 21 (AHIMS ID# 52-5-0273) (Rock Shelter with Art and Deposit [Moderate Archaeological Significance and High Cultural Significance]) located within. The EOP report for LW 19 rock fracturing and rockfall within proximity to Sandy Creek Road 21. However, no direct impacts to the art panels or art motifs were observed. This site was inspected during the site inspection on 10 October 2023 and confirmed there were no direct impacts to the art panels or art motifs.

Review of Dendrobium Colliery Longwall 19 End of Panel Report – Aboriginal Cultural Heritage Assessment (Niche, 28 August 2023) indicates Level 2 CMAs from the TARP are in the process of being implemented.

There were no non-compliances identified relating to heritage management. In relation to Sandy Creek Road 21, it is noted IMC sought an Aboriginal Heritage Impact Permit (AHIP) from Heritage NSW prior to mining LW 19. However, feedback from Heritage NSW sighted during the audit indicated an AHIP was not required. Regardless of the advice from Heritage NSW, IMC has decided to pursue AHIPs if there is any potential risk to Aboriginal objects or places.

## 4.8 Management of visual and lighting impacts

IMC have a LVAMP (Rev 8.1, 15 May 2023) for operations at Dendrobium Mine. During the site inspection, there were minimal off-site locations from which the mining operations were visible with several measures implemented to reduce visual impacts, including:

- a vegetative screen has been established and is maintained around IMC operations;
- lighting at Dendrobium Mine managed in accordance with the LVAMP, with the vegetative screen limiting stray lighting impacts; and
- lighting at the KVCLF site is generally managed by natural topography of the valley, with lighting also turned off during the night-time period where work is not being carried out.

Completion of a lighting survey in FY22 at the Dendrobium Mine and the KVCLF site concluded that lighting meets the requirements for *Australian Standard AS 4282:2019 – Control of Obtrusive Effects and Outdoor Lighting*

One complaint was received during FY22 in relation to visual amenity / lighting issues.

There were no non-compliances identified relating to visual amenity / lighting.

## 4.9 Bushfire management

IMC have a Bushfire Management Plan (Rev 7.1, 18 August 2021), which includes requirements relating to:

- Asset Protection Zone maintenance at surface facilities;
- fire trail maintenance; and
- installation of bushfire suppression sprays at the Dendrobium Pit Top.

No fire related incidents were recorded through the reporting period.

There were no non-compliances identified relating to bushfire management.

## 4.10 Waste management

The Waste Management Plan (Rev 7.0, July 2023) was in place at the time of the audit, with the following noted:

- IMC reported on waste generation, recycling and disposal in the Annual Reviews through the audit period as required by consent conditions. In addition, the South32 Monthly Waste Figures spreadsheet was sighted during conduct of the audit; and
- Cleanaway manages waste streams on-site, providing waste quantities which identifies the types of wastes generated and disposal locations.

There were no adverse observations during the site inspection and no non-compliance identified relating to waste management.

## 5. Corrective actions and opportunities for improvement

### 5.1 Corrective actions

Table 5.1 summarise the CAs made based on the findings of the audit and observations during the site inspection.

Table 5.1 Corrective actions identified during the audit

| Consent / licence / lease | Condition               | CA ID | CA requirement  |
|---------------------------|-------------------------|-------|---|
| DA 60-03-2001             | Schedule 3, Condition 5 | 01    | <p>Undertake an independent review of the study into the coincidence/causality of vegetation change (ecosystem functionality) and groundwater change at Swamp 15a. The study is to be completed by a suitably qualified expert in coastal upland swamps approved by DPE.</p> <p>Given rehabilitation of upland swamps has been deemed impractical, if the findings of the study and/or review conclude the causes are likely to be related to mining activities, consider the need for additional strategic offsets for upland swamps in consultation with BCS to ideally be located within the impacted catchment or Metropolitan Special Areas (if required).</p> |

### 5.2 Opportunities for improvement

Table 5.2 summarise the OFIs made based on the findings of the audit and observations during the site inspection.

Table 5.2 Opportunities for improvement identified during the audit

| Consent / licence / lease | Condition                | OFI ID | OFI requirement  |
|---------------------------|--------------------------|--------|--|
| DA 60-03-2001             | Schedule 3, Condition 5  | 01     | Ensure future monitoring reports include LiDAR analysis for relevant swamps, consistent with recent updates to Area 3A TARPs.  |
|                           | Schedule 3, Condition 10 | 02     | <p>Ensure additional detail and quantitative analysis is provided in Section 6.6 (Weeds) of each Annual Review, including:</p> <ul style="list-style-type: none"> <li>– weed management activities;</li> <li>– success of weed control (i.e. % cover);</li> <li>– whether desired outcomes are being achieved;</li> <li>– whether weed criteria are being met; and</li> <li>– whether the weed control program has been:                             <ul style="list-style-type: none"> <li>– adequately implemented; and</li> <li>– reviewed as required by the RMP.</li> </ul> </li> <li>– weed management activities planned in next Annual Review period.</li> </ul> |
|                           | Schedule 4, Condition 9  | 03     | Ensure commentary on compliance against the TSP and deposited dust criteria in DA 60-03-2001 is provided in each Annual Review.  |
|                           | Schedule 4, Condition 11 | 04     | Assess opportunities to improve the exposure of the meteorological station (e.g. using taller masts to get to approximately 10 m).   |



| Consent / licence / lease | Condition                         | OFI ID | OFI requirement  |
|---------------------------|-----------------------------------|--------|--|
|                           | Schedule 4, Conditions 18 and 18A | 05     | <p>To ensure compliance with the requirement to remediate physical damage to watercourses subject to subsidence impacts as soon as reasonably practicable, commence specific engagement with WaterNSW, BCS and DPE during the period in which continuation of monitoring is being undertaken until 3-6 months of average or above average rainfall occurs (as proposed in <i>WC21 and Donalds Castle Creek Rehabilitation Plan</i> [Rev 5, 31 August 2023 – currently waiting for DPE approval]).</p> <p>The specific engagement would focus on:</p> <ul style="list-style-type: none"> <li>– confirming agreement regarding the appropriate path forward should 3-6 months of average or above average rainfall not result in significantly different monitoring results, to establish whether: <ul style="list-style-type: none"> <li>– more grouting is required; or</li> <li>– modification to grouting/remediation techniques is required.</li> </ul> </li> <li>– whether any remediation is likely to be successful at WC21;</li> <li>– whether separate remediation trials should also commence at Donalds Castle Creek, rather than focusing efforts at WC21 only;</li> <li>– whether the environmental impacts of remediation (e.g. associated with the existing or any modified remediation technique required at WC21 and Donalds Castle Creek) would exceed the environmental benefits; and</li> <li>– whether alternative measures and/or programs required to be implemented in the catchment to offset the impacts to WC21 and Donalds Castle Creek, and at what point the need to offset impacts would be determined necessary.</li> </ul> |
|                           |                                   | 06     | <p>To ensure compliance with the requirement to remediate physical damage to watercourses subject to subsidence impacts ‘as soon as reasonably practicable’, a detailed program for completion of remediation to WC21 and Donalds Castle Creek is to be included in a future revision to the <i>WC21 and Donalds Castle Creek Rehabilitation Plan</i>.</p>   |
|                           | Schedule 8, Condition 2           | 07     | <p>Amend the NMP as follows:</p> <ul style="list-style-type: none"> <li>– Section 3.5 Guidelines and Standards to include reference to <i>Approved Methods for the Measurement and Analysis of Environmental Noise in NSW</i> (EPA, 2022); and</li> <li>– Section 7.2.1, Point 3 from ‘Residential Background Level (RBL)’ to ‘Rating Background Level (RBL)’.</li> </ul>  |
|                           | Schedule 8, Condition 2           | 08     | <p>Investigate alternative measures to offsetting impacts on upland swamps, focussing on the avoidance and minimisation of further impacts to upland swamps from mining activities and ensuring timely implementation before more significant impacts eventuate.</p>   |
|                           | Schedule 8, Condition 2           | 09     | <p>If studies indicated that an existing population of Littlejohn’s Tree Frog does not, or cannot be confirmed to, exist at the Maddens Plain offset site, investigate additional management actions to ameliorate impacts due to mining on Littlejohn’s Tree Frog. This may include obtaining additional offsets (e.g. retiring like-for-like species credits under the NSW Biodiversity Offset Scheme).</p>  |

| Consent / licence / lease               | Condition               | OFI ID | OFI requirement  |
|---|-------------------------|--------|--|
|   | Schedule 8, Condition 2 | 10     | <p>Commence specific engagement with relevant agencies including DPE, BCS and WaterNSW in relation to the TARPs for SIMMCPs. The specific engagement would focus on whether:</p> <ul style="list-style-type: none"> <li>– consecutive monitoring periods of trending decline is an appropriate measure to escalate through the three trigger levels before an exceedance of performance measures is determined; and</li> <li>– consecutive monitoring periods without trending decline should be required to deescalate through the TARP levels (i.e. rather than deactivating the TARP following one period without trending decline). As an example: <ul style="list-style-type: none"> <li>– Level 3 TARP: three consecutive periods to move down to Level 2;</li> <li>– Level 2 TARP: four consecutive periods to move down to Level 1; and</li> <li>– Level 1 TARP: five consecutive periods for TARP to no longer be triggered.</li> </ul> </li> </ul> |
| N/A – Agency consultation (Section 2.3) | N/A                     | 11     | Ensure relevant agencies are provided a copy of the latest goaf investigation program report on completion.  |

## **Appendix A**

### **DPE endorsement of the audit team**

Mr Chris Schultz  
Lead Environment  
Illawarra Metallurgical Coal  
South32  
Port Kembla Coal Terminal, Port Kembla Road  
PORT KEMBLA, NSW 2505

05/06/2023

Dear Mr Schultz

**Dendrobium Underground Coal Mine (DA 60-03-2001)  
Independent Environmental Audit 2023**

I refer to your letter of 31 May 2023 seeking approval of the audit team for the upcoming Independent Environmental Audit of Dendrobium Underground Coal Mine (the development), in accordance with Schedule 8, Condition 6 of development consent DA 60-03-2001, as modified (the consent).

Having considered the qualifications and experience of the proposed audit team, the Secretary endorses the appointment of:

- Mr Elliot Holland of Onward Consulting, Lead Auditor;
- Shane Lakmaker of Airen Consulting, Air Quality Specialist;
- Oliver Muller of Muller Acoustic Consulting, Noise Specialist;
- Steve Ditton of Ditton Geotechnical Services Pty Ltd, Subsidence and Remediation Specialist;
- Michael Batchelor of WRM Water and Environment, Steam Hydrology and Water Quality Specialist;
- Mark Vile of Onward Consulting/Kurtis Lindsay of Land Eco Consulting Pty Limited, Biodiversity and Rehabilitation Specialist; and
- Kurtis Lindsay of Land Eco Consulting Pty Limited, Upland Swamps Specialist,

to undertake the audit in accordance with Schedule 8, Condition 6 of the approval. This approval is conditional on the audit team being independent of the developments and maintaining Exemplar Global certification. The department reserves the right to request an alternate auditor or audit team for future audits.

Please ensure this correspondence is appended to the Audit Report.

The audit is to be conducted in accordance with AS/NZS ISO 19011 Australian/New Zealand Standard: Guidelines for quality and/or environmental management systems auditing and you may wish to consider the Independent Audit Post Approval Requirements (Department 2020 or as updated). A copy of the guideline can be located at <http://planning.nsw.gov.au/Policy-and-Legislation/Mining-and-Resources/Integrated-Mining-Policy>.

The audit report is to include the following:

1. consultation with the relevant agencies;
2. a compliance table indicating the compliance status of each condition of approval and any relevant EPL;
3. not use the term “partial compliance”;
4. recommend actions in response to non-compliances;
5. review the adequacy of plans and programs required under this consent; and
6. identify opportunities for improved environmental management and performance.

Within three months of commencing this audit, Dendrobium is to submit a copy of the audit report to the Secretary and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report and a timetable to implement the recommendations.

Prior to submitting the audit report to the Secretary, it is recommended that Dendrobium review the report to ensure it complies with the relevant consent condition.

Failure to meet these requirements will require revision and resubmission of the Audit Report.

Should you have any enquiries in relation to this matter, please contact Georgia Dragicevic, Senior Compliance Officer, on (02) 4247 1852 or by email to [Georgia.Dragicevic@planning.nsw.gov.au](mailto:Georgia.Dragicevic@planning.nsw.gov.au).

Yours sincerely



Katrina O'Reilly  
Team Leader - Compliance  
Compliance  
As nominee of the Planning Secretary

# Appendix B

## Independent Audit Declaration Forms

## Declaration of Independence Form

### Declaration of Independence – Auditor

|                        |   |
|------------------------|---|
| Project Name           | Dendrobium Underground Coal Mine  |
| Consent Number         | DA 60-03-2001   |
| Description of Project | Dendrobium Underground Coal Mine and associated surface facilities and infrastructure |
| Project Address        | Cordeaux Road, Mount Kembla NSW 2526  |
| Proponent              | Illawarra Coal Holdings Pty Ltd   |
| Date                   | 30 May 2023   |

I declare that:

- i. I am not related to any proponent, owner, operator or other entity involved in the delivery of the project. Such a relationship includes that of employer/employee, a business partnership, sharing a common employer, a contractual arrangement outside an Independent Audit, or that of a spouse, partner, sibling, parent, or child;
- ii. I do not have any pecuniary interest in the project, proponent or related entities. Such an interest includes where there is a reasonable likelihood or expectation of financial gain (other than being reimbursed for performing the audit) or loss to the auditor, or their spouse, partner, sibling, parent, or child;
- iii. I have not provided services (not including independent reviews or auditing) to the project with the result that the audit work performed by themselves or their company, except as otherwise declared to the Department prior to the audit;
- iv. I am not an Environmental Representative for the project; and
- v. I will not accept any inducement, commission, gift or any other benefit from auditee organisations, their employees or any interested party, or knowingly allow colleagues to do so.

Notes:

- a) Under section 10.6 of the *Environmental Planning and Assessment Act 1979* a person must not include false or misleading information (or provide information for inclusion in) in a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000; and
- b) The *Crimes Act 1900* contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years imprisonment or 200 penalty units, or both)

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Name of Proposed Auditor: Elliot Holland

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Signature: *Elliot Holland*

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Qualification: Lead Auditor - EMS and B. Env. Sc. & Mgt

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Company: Onward Consulting Pty Ltd



## Declaration of Independence Form

### Declaration of Independence – Auditor

|                        |   |
|------------------------|---|
| Project Name           | Dendrobium Underground Coal Mine  |
| Consent Number         | DA 60-03-2001   |
| Description of Project | Dendrobium Underground Coal Mine and associated surface facilities and infrastructure |
| Project Address        | Cordeaux Road, Mount Kembla NSW 2526  |
| Proponent              | Illawarra Coal Holdings Pty Ltd   |
| Date                   | 31 May 2023   |

I declare that:

- i. I am not related to any proponent, owner, operator or other entity involved in the delivery of the project. Such a relationship includes that of employer/employee, a business partnership, sharing a common employer, a contractual arrangement outside an Independent Audit, or that of a spouse, partner, sibling, parent, or child;
- ii. I do not have any pecuniary interest in the project, proponent or related entities. Such an interest includes where there is a reasonable likelihood or expectation of financial gain (other than being reimbursed for performing the audit) or loss to the auditor, or their spouse, partner, sibling, parent, or child;
- iii. I have not provided services (not including independent reviews or auditing) to the project with the result that the audit work performed by themselves or their company, except as otherwise declared to the Department prior to the audit;
- iv. I am not an Environmental Representative for the project; and
- v. I will not accept any inducement, commission, gift or any other benefit from auditee organisations, their employees or any interested party, or knowingly allow colleagues to do so.

Notes:

- a) Under section 10.6 of the *Environmental Planning and Assessment Act 1979* a person must not include false or misleading information (or provide information for inclusion in) in a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000; and
- b) The *Crimes Act 1900* contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years imprisonment or 200 penalty units, or both)

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Name of Proposed Auditor

Mark Vile

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Signature



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Qualification

B. Env. Sc (Hons)

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Company

Onward Consulting Pty Ltd

# Declaration of Independence Form

Declaration of Independence of [Project] for

|                        |   |
|------------------------|---|
| Project Name           | Endrop [Project] [Project] [Project] [Project]  |
| Proposed Project       | [Project] [Project] [Project] [Project]   |
| Description of Project | Endrop [Project] [Project] [Project] [Project] and associated surface facilities and infrastructure |
| Project Address        | Order [Project] [Project] [Project] [Project] [Project]   |
| Proposer               | Altaarra [Project] [Project] [Project]  |
| Date                   | 22 May [Project]  |

I declare that

I am not related to any Proposer of, nor operator or other entity involved in the delivery of the Project such a relationship include that of employer/employee, partner, partner, sharing a common employer, a contractual arrangement or provide an independent report or that of a competitor, partner, sibling, parent or child.

I do not have any secondary interest in the Project or related entity such as interest include where there is a reasonable likelihood or expectation of financial gain (other than being remunerated for performing the add) or loss to the add or their competitor, sibling, parent or child.

I have not provided services (not including independent review or auditing) to the Project or in the recent past add or performed by the add or their company, or other, as declared to the relevant entity or to the add.

I am not an environmental representative for the Project and

I will not accept any inducement or gift or any other benefit from add or organization, their employees or any interested party or not directly or indirectly, to do so.

Notes:

a) Under section 22.2 of the Environmental Planning and Assessment Act 1979 a person who does not include false or misleading information (or provide information for inclusion in) in a report of monitoring data or an add recorded to the Minister in connection with an add of the person who does not have the information false or misleading in a material respect. The Proposer of an approved Project does not fail to include information (or provide information for inclusion in) a report of monitoring data or an add recorded to the Minister in connection with an add if the person who does not have the information is a directly related to the monitoring or add. The person is penalized in the case of a corporation \$100,000 and for an individual \$20,000 and

b) The Crimes Act 1900 contains other offences relating to false and misleading information (section 222B (giving false or misleading information) or a person is penalized by year or person and or penalty (imprisonment or both).

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Name of Proposed Project

Shane Parker

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Signature



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Qualification

Bachelor of Technology (Computer Science)

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Company

Open Group

## Declaration of Independence Form

### Declaration of Independence – Auditor

|                        |   |
|------------------------|---|
| Project Name           | Dendrobium Underground Coal Mine  |
| Consent Number         | DA 60-03-2001   |
| Description of Project | Dendrobium Underground Coal Mine and associated surface facilities and infrastructure |
| Project Address        | Cordeaux Road, Mount Kembla NSW 2526  |
| Proponent              | Illawarra Coal Holdings Pty Ltd   |
| Date                   | 29 May 2023   |

I declare that:

- i. I am not related to any proponent, owner, operator or other entity involved in the delivery of the project. Such a relationship includes that of employer/employee, a business partnership, sharing a common employer, a contractual arrangement outside an Independent Audit, or that of a spouse, partner, sibling, parent, or child;
- ii. I do not have any pecuniary interest in the project, proponent or related entities. Such an interest includes where there is a reasonable likelihood or expectation of financial gain (other than being reimbursed for performing the audit) or loss to the auditor, or their spouse, partner, sibling, parent, or child;
- iii. I have not provided services (not including independent reviews or auditing) to the project with the result that the audit work performed by themselves or their company, except as otherwise declared to the Department prior to the audit;
- iv. I am not an Environmental Representative for the project; and
- v. I will not accept any inducement, commission, gift or any other benefit from auditee organisations, their employees or any interested party, or knowingly allow colleagues to do so.

Notes:

- a) Under section 10.6 of the *Environmental Planning and Assessment Act 1979* a person must not include false or misleading information (or provide information for inclusion in) in a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000; and
- b) The *Crimes Act 1900* contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years imprisonment or 200 penalty units, or both)

---

Name of Proposed Auditor: Oliver Muller

Signature:



Qualification:

B. Res. Mgt & Hum. Geo. (Principal Acoustic Scientist)

Company:

Muller Acoustic Consulting Pty Ltd

## Declaration of Independence Form

### Declaration of Independence – Auditor

|                         |   |
|-------------------------|---|
| Project Name:           | Dendrobium Underground Coal Mine  |
| Consent Number:         | DA 60-03-2001   |
| Description of Project: | Dendrobium Underground Coal Mine and associated surface facilities and infrastructure |
| Project Address:        | Cordeaux Road, Mount Kembla NSW 2526  |
| Proponent:              | Illawarra Coal Holdings Pty Ltd   |
| Date:                   | 26 May 2023   |

I declare that:

- i. I am not related to any proponent, owner, operator or other entity involved in the delivery of the project. Such a relationship includes that of employer/employee, a business partnership, sharing a common employer, a contractual arrangement outside an Independent Audit, or that of a spouse, partner, sibling, parent, or child;
- ii. I do not have any pecuniary interest in the project, proponent or related entities. Such an interest includes where there is a reasonable likelihood or expectation of financial gain (other than being reimbursed for performing the audit) or loss to the auditor, or their spouse, partner, sibling, parent, or child;
- iii. I have not provided services (not including independent reviews or auditing) to the project with the result that the audit work performed by themselves or their company, except as otherwise declared to the Department prior to the audit;
- iv. I am not an Environmental Representative for the project; and
- v. I will not accept any inducement, commission, gift or any other benefit from auditee organisations, their employees or any interested party, or knowingly allow colleagues to do so.

Notes:

- a) Under section 10.6 of the *Environmental Planning and Assessment Act 1979* a person must not include false or misleading information (or provide information for inclusion in) in a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000; and
- b) The *Crimes Act 1900* contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years imprisonment or 200 penalty units, or both)

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Name of Proposed Auditor: Kurtis Lindsay

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Signature: 

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Qualification: B. Sc. (Hons)

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Company: Land Eco Consulting Pty Ltd



## Declaration of Independence Form

### Declaration of Independence – Auditor

|                        |   |
|------------------------|---|
| Project Name           | Dendrobium Underground Coal Mine  |
| Consent Number         | DA 60-03-2001   |
| Description of Project | Dendrobium Underground Coal Mine and associated surface facilities and infrastructure |
| Project Address        | Cordeaux Road, Mount Kembla NSW 2526  |
| Proponent              | Illawarra Coal Holdings Pty Ltd   |
| Date                   | 30 May 2023   |


I declare that:

- i. I am not related to any proponent, owner, operator or other entity involved in the delivery of the project. Such a relationship includes that of employer/employee, a business partnership, sharing a common employer, a contractual arrangement outside an Independent Audit, or that of a spouse, partner, sibling, parent, or child;
- ii. I do not have any pecuniary interest in the project, proponent or related entities. Such an interest includes where there is a reasonable likelihood or expectation of financial gain (other than being reimbursed for performing the audit) or loss to the auditor, or their spouse, partner, sibling, parent, or child;
- iii. I have not provided services (not including independent reviews or auditing) to the project with the result that the audit work performed by themselves or their company, except as otherwise declared to the Department prior to the audit;
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- v. I will not accept any inducement, commission, gift or any other benefit from auditee organisations, their employees or any interested party, or knowingly allow colleagues to do so.

Notes:

- a) Under section 10.6 of the *Environmental Planning and Assessment Act 1979* a person must not include false or misleading information (or provide information for inclusion in) in a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000; and
- b) The *Crimes Act 1900* contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years imprisonment or 200 penalty units, or both)

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|                          |   |
|--------------------------|---|
| Name of Proposed Auditor | Steve Ditton  |
| Signature                |      |
| Qualification            | B.Eng. (Civil/Hons), Chartered Professional Engineer /<br>NPER (Civil Geotech) / RPEQ |
| Company                  | Ditton Geotechnical Services Pty Ltd  |

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## Declaration of Independence Form

### Declaration of Independence – Auditor

|                        |   |
|------------------------|---|
| Project Name           | Dendrobium Underground Coal Mine  |
| Consent Number         | DA 60-03-2001   |
| Description of Project | Dendrobium Underground Coal Mine and associated surface facilities and infrastructure |
| Project Address        | Cordeaux Road, Mount Kembla NSW 2526  |
| Proponent              | Illawarra Coal Holdings Pty Ltd   |
| Date                   | 26/5/23   |

I declare that:

- i. I am not related to any proponent, owner, operator or other entity involved in the delivery of the project. Such a relationship includes that of employer/employee, a business partnership, sharing a common employer, a contractual arrangement outside an Independent Audit, or that of a spouse, partner, sibling, parent, or child;
- ii. I do not have any pecuniary interest in the project, proponent or related entities. Such an interest includes where there is a reasonable likelihood or expectation of financial gain (other than being reimbursed for performing the audit) or loss to the auditor, or their spouse, partner, sibling, parent, or child;
- iii. I have not provided services (not including independent reviews or auditing) to the project with the result that the audit work performed by themselves or their company, except as otherwise declared to the Department prior to the audit;
- iv. I am not an Environmental Representative for the project; and
- v. I will not accept any inducement, commission, gift or any other benefit from auditee organisations, their employees or any interested party, or knowingly allow colleagues to do so.

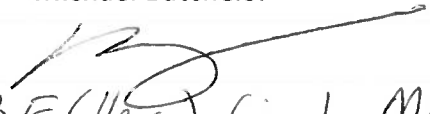
Notes:

- a) Under section 10.6 of the *Environmental Planning and Assessment Act 1979* a person must not include false or misleading information (or provide information for inclusion in) in a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000; and
- b) The *Crimes Act 1900* contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years imprisonment or 200 penalty units, or both)

Name of Proposed Auditor

Michael Batchelor

Signature



BE (Hons) Civil, MEng, ST, RPEQ 7157

Qualification

Company

WRM Water & Environment Pty Ltd

# Appendix C

## Agency consultation

## Elliot Holland

---

**From:** Georgia Dragicevic <Georgia.Dragicevic@planning.nsw.gov.au>  
**Sent:** Tuesday, September 12, 2023 7:59 PM  
**To:** Elliot Holland  
**Cc:** Mike Gale; Bradbury, Amy; Alchin, James; Schultz, Chris; Katrina O'Reilly  
**Subject:** RE: IMC-001: Dendrobium Mine 2023 IEA - Agency/stakeholder consultation (DPE - Compliance)

Hi Elliot,

Thank you for consulting the department on the upcoming IEA for Dendrobium Mine. In addition to the IEA consent requirements, please look into subsidence related impacts and noise management.

Kind regards,  
Georgia

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**From:** Elliot Holland <elliot.holland@onward.net.au>  
**Sent:** Thursday, 7 September 2023 9:30 AM  
**To:** Georgia Dragicevic <Georgia.Dragicevic@planning.nsw.gov.au>  
**Cc:** Mike Gale <mike.gale@onward.net.au>; Bradbury, Amy <Amy.Bradbury@south32.net>; Alchin, James <James.Alchin@south32.net>; Schultz, Chris <Chris.Schultz1@south32.net>  
**Subject:** IMC-001: Dendrobium Mine 2023 IEA - Agency/stakeholder consultation (DPE - Compliance)  
**Importance:** High

Hi Georgia,

South32 Illawarra Metallurgical Coal (South32 IMC) has engaged Onward Consulting to undertake an independent environmental audit (IEA) of their Dendrobium Mine. This audit would be prepared in accordance with Condition 6 of Schedule 8 of the Development Consent (DA 60-03-2001, as modified). The focus of the IEA will be:

- compliance with the conditions of:
  - DA 60-03-2001;
  - EPL 3241;
  - ML 1510;
  - ML 1566;
  - CCL 768; and
  - SMP approvals for longwalls 17, 18, 19 and 21.
- evidence of implementation and effectiveness of the site's environmental management plans as part of the conditions of DA 60-03-2001;
- compliance with Schedule 8A of Mining Regulation 2016;
- assessment of environmental risks at the site during a site visit; and
- recommending measures or actions to improve the environmental performance of the project and/or any assessment, plan or program required under the approval.

I am writing to you to invite comment from yourself regarding South32 IMC's operations at Dendrobium Mine (as they relate to DA 60-3-2001) so that we may adequately address any concerns during the audit. I also invite you to comment on South32 IMC's performance with other requirements, as you may deem appropriate.

It would be appreciated if you could provide your comments regarding the performance of South32 IMC's in meeting these obligations under the following headings:

- Compliance with requirements;
- Progress to meeting requirements;
- Details of incidents of non-compliance;
- Adequacy of actions taken; and
- Adequacy of the requirements of the approval/licence.

The site visit for the audit is currently scheduled to be conducted the Monday-Wednesday, 9-11 October 2023. It would be appreciated if you could submit your written comments by close of business Friday, 29 September 2023.

It is noted that, consistent with the approach for the previous IEA of Dendrobium Mine, a site visit is currently only proposed to be completed by the Lead Auditor (Elliot Holland) and the Rehabilitation Specialist (Mark Vile). Site visits for other technical specialists that form the audit team (i.e. Subsidence, Upland Swamps, Biodiversity, Noise Management, and Air Quality) are only proposed to be undertaken should it be determined to be required as a result of:

- Agency/stakeholder consultation for the IEA); or
- Where determination of compliance cannot be achieved through document review and interviews with South32 IMC personnel, requiring technical specialist inspection that cannot be completed by the Lead Auditor.


All correspondence in relation to the IEA should be directed to Elliot Holland (Senior Environmental Project Manager / Exemplar Global Lead Auditor – EMS) on 0427 863 567 or [elliott.holland@onward.net.au](mailto:elliott.holland@onward.net.au).

Regards,


Elliot Holland

Senior Environmental Project Manager / Exemplar Global Lead Auditor – EMS



 +61427863567

 [elliott.holland@onward.net.au](mailto:elliott.holland@onward.net.au)

 Suite 2, Level 1, 28 Donald Street, Hamilton NSW  
2303

 [www.onward.net.au](http://www.onward.net.au)

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*Please note my work days are Monday-Thursday. For anything urgent, please contact Mike Gale at [mike.gale@onward.net.au](mailto:mike.gale@onward.net.au). Otherwise, I will respond to your email as soon as possible when I am back in the office.*

*Where you have received this email outside 8.30am to 5.00pm Monday to Friday, I am sending you this message now because it is a good time for me. Please know, I do not expect you to read, respond or action anything in this message outside your regular hours.*

CONFIDENTIALITY NOTICE: This email, including any attachments, is confidential and may be privileged. If you are not the intended recipient please notify the sender immediately, and please delete it; you should not copy it or use it for any purpose or disclose its contents to any other person.



AREQ0045230

Mr Elliot Holland  
Onward Consulting  
Suite 2, Level 1  
28 Donald Street  
Hamilton NSW 2303

By email: [elliott.holland@onward.net.au](mailto:elliott.holland@onward.net.au)

Dear Mr Holland,

**Subject: Dendrobium Colliery – Independent Environmental Audit**

Thank you for your email dated 7 September 2023 requesting consultation on the independent environmental audit to be undertaken of the Dendrobium Colliery which is covered by the following mining leases.

- CCL768 (1973)
- ML1510 (1992)
- ML1566 (1992)

The independent environmental audit is required to assess compliance against the relevant environmental management conditions of the mining leases up to 1 July 2022, including implementation of the mining operations plan for the site.

From 2 July 2022, the independent environmental audit should provide an assessment of compliance with the requirements of Schedule 8A Standard conditions of mining leases, Part 2 Standard conditions, as set out in the Mining Regulation 2016. It is noted that the 3 mining leases that comprise the Dendrobium Colliery have been approved by the Regulator to be treated as a single lease for the purposes of Part 2 of Schedule 8A.

The audit should note observations where rehabilitation procedures, practices and outcomes represent best industry practice. It would be appreciated if a copy of the final audit report could be sent to the Regulator at [nswresourcesregulator@service-now.com](mailto:nswresourcesregulator@service-now.com) upon completion of the audit.

Yours sincerely

**Jenny Ehmsen**  
Principal Compliance Auditor  
12 September 2023



Our ref: OUT23/14835

Elliot Holland

[elliott.holland@onward.net.au](mailto:elliott.holland@onward.net.au)

12 September 2023

---

Subject: **Dendrobium Mine Independent Environmental Audit**

Dear Elliot Holland

I refer to your request seeking advice from the Department of Planning and Environment – Water (the department) on an upcoming audit for the above matter. It is understood this consultation is in accordance with conditions of approval for the project.

The department understands that the scope of the audit as outlined under the development consent and the reference guideline, “*Independent Audit Post Approval Requirements (2020)*” extends to at least the following:

- Identification of compliance requirements and documentation of any non-compliances.
- Assessment of the adequacy and implementation of management plans and sub plans.
- Assessment of compliance against relevant regulatory requirements and legislation.
- Assessment of compliance between actual and predicted impacts in the environmental assessment.
- Reporting requirements for management plans.
- Identification of strengths of the project in environmental management and opportunities for improvement.

The department requests that the audit address compliance with the following specific elements of the consent conditions and related legislative requirements in a manner consistent with the above audit scope:

- The requirement to prepare and implement management plans that relate to water sources and their dependent ecosystems and users, and associated impact management and mitigation. These plans may include:
  - Water Management Plans and related sub-plans eg. Site Water Balance, Erosion and Sediment Control Plan, Stormwater Management Plan, Surface and Groundwater Management Plan.
  - Extraction Plans and related sub-plans eg. Water Management Plan, Subsidence Management Plan.
- The requirement to prepare and implement trigger action response plans for water source impacts which set clearly defined limits and actions. This is to be reported on within annual and exceedance based reporting.
- Water supply availability is clearly defined for the project.
- Water take at the site via storage, diversion, interception or extraction is clearly documented and is authorised by a relevant Water Access Licence or exemption under the Water Management (General) Regulation 2018.
- Water metering at the site is in accordance with the NSW Non-Urban Metering Framework where relevant.

## Department of Planning and Environment

- Water Access Licence/s used to account for water take by the project nominates the work where the water is being taken from.
- Annual reporting clearly documents; 1) water take, use and water source impacts, 2) compares results with previous year's, and 3) identifies exceedances and how these are managed/mitigated.

Should you have any further queries in relation to this submission please do not hesitate to contact DPE Water Assessments at [water.assessments@dpie.nsw.gov.au](mailto:water.assessments@dpie.nsw.gov.au)

Yours sincerely,



Simon Francis

Senior Project Officer  
Water Assessments  
Department of Planning and Environment – Water

## Elliot Holland

---

**From:** Mike Archer <mikearcherpr@hotmail.com>  
**Sent:** Thursday, September 7, 2023 10:22 AM  
**To:** Elliot Holland  
**Subject:** Re: IMC-001: Dendrobium Mine 2023 IEA - Agency/stakeholder consultation (CCC)

Good morning Elliot. Have forwarded your email to Dendrobium CCC members and asked them to provide comments to me by 21 Sept. I will collate and get to you by your deadline. Regards Mike

Sent from my iPhone

On 7 Sep 2023, at 9:29 am, Elliot Holland <elliot.holland@onward.net.au> wrote:

Hi Mike,

South32 Illawarra Metallurgical Coal (South32 IMC) has engaged Onward Consulting to undertake an independent environmental audit (IEA) of their Dendrobium Mine. This audit would be prepared in accordance with Condition 6 of Schedule 8 of the Development Consent (DA 60-03-2001, as modified). The focus of the IEA will be:

1. compliance with the conditions of:
  1. DA 60-03-2001;
  2. EPL 3241;
  3. ML 1510;
  4. ML 1566;
  5. CCL 768; and
  6. SMP approvals for longwalls 17, 18, 19 and 21.
2. evidence of implementation and effectiveness of the site's environmental management plans as part of the conditions of DA 60-03-2001;
3. compliance with Schedule 8A of Mining Regulation 2016;
4. assessment of environmental risks at the site during a site visit; and
5. recommending measures or actions to improve the environmental performance of the project and/or any assessment, plan or program required under the approval.

I am writing to you to invite comment from yourself/the CCC regarding South32 IMC's operations at Dendrobium Mine (as they relate to DA 60-3-2001) so that we may adequately address any concerns during the audit. I also invite you to comment on South32 IMC's performance with other requirements, as you may deem appropriate.

It would be appreciated if you could provide your comments regarding the performance of South32 IMC's in meeting these obligations under the following headings:

1. Compliance with requirements;
2. Progress to meeting requirements;
3. Details of incidents of non-compliance;
4. Adequacy of actions taken; and
5. Adequacy of the requirements of the approval/licence.

The site visit for the audit is currently scheduled to be conducted the Monday-Wednesday, 9-11 October 2023. It would be appreciated if you could submit your written comments by close of business Friday, 29 September 2023.

All correspondence in relation to the IEA should be directed to Elliot Holland (Senior Environmental Project Manager / Exemplar Global Lead Auditor – EMS) on 0427 863 567 or [elliott.holland@onward.net.au](mailto:elliott.holland@onward.net.au).

Regards,

Elliot Holland

Senior Environmental Project Manager / Exemplar Global Lead Auditor – EMS

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**<image001.png>** **<image002.png>** +61427863567  
**<image003.png>** [elliott.holland@onward.net.au](mailto:elliott.holland@onward.net.au)  
**<image004.png>** Suite 2, Level 1, 28 Donald Street,  
Hamilton NSW 2303  
**<image005.png>** [www.onward.net.au](http://www.onward.net.au)

*Please note my work days are Monday-Thursday. For anything urgent, please contact Mike Gale at [mike.gale@onward.net.au](mailto:mike.gale@onward.net.au). Otherwise, I will respond to your email as soon as possible when I am back in the office.*

*Where you have received this email outside 8.30am to 5.00pm Monday to Friday, I am sending you this message now because it is a good time for me. Please know, I do not expect you to read, respond or action anything in this message outside your regular hours.*

CONFIDENTIALITY NOTICE: This email, including any attachments, is confidential and may be privileged. If you are not the intended recipient please notify the sender immediately, and please delete it; you should not copy it or use it for any purpose or disclose its contents to any other person.

29 September 2023

Contact: Maria Dubikova  
 email: [environmental.assessments@watnsw.com.au](mailto:environmental.assessments@watnsw.com.au)  
 Our ref: D2023/97577

Elliot Holland  
 Senior Environmental Project Manager,  
 Onward Consulting  
 Email: [Elliot.holland@onward.net.au](mailto:Elliot.holland@onward.net.au)

Dear Mr. Holland,

### Dendrobium Mine 2023 – Triennial Independent Environmental Audit (IEA)

WaterNSW appreciates the opportunity to comment on concerns regarding the Dendrobium Mine project from an environmental management perspective.

WaterNSW notes the Independent Environmental Audit (the Audit) is a compliance requirement of Dendrobium Mine development consent Conditions of Approval (CoA). WaterNSW also notes the primary objectives of the Audit and that it covers the last three-year period. During this audit period three longwalls were mined and DPE issued approvals to Subsidence Management Plans (SMP) as summarised in Table 1 below.

Table 1. Dendrobium mining progress and approvals relevant to the 2023 IEA

| Panel           | Mine Area | Start Date       | End Date        | SMP Approval Date |
|-----------------|-----------|------------------|-----------------|-------------------|
| Longwall 17     | Area 3B   | 12 December 2020 | 13 October 2021 | 11 July 2019      |
| Longwall 18     | Area 3B   | 2 December 2021  | 17 May 2022     | 8 August 2020     |
| Longwall 19     | Area 3A   | 18 June 2022     | 29 March 2023   | 11 March 2021     |
| Longwall 21     | Area 3C   | 26 April 2023    | 7 August 2023   | 19 December 2019  |
| Longwalls 22&23 | Area 3C   |                  |                 | 20 December 2022  |
| Longwall 19A    | Area 3A   |                  |                 | 11 August 2023    |

Dendrobium Mine underground mining area is located entirely within the Sydney Drinking Water Catchment (SDWC) and the Metropolitan Special Area. The mine's pit-top and coal processing facilities are located outside the SDWC. WaterNSW has responsibilities for managing the declared SDWC area including Special Areas as required by Water NSW Act 2014. A key function of WaterNSW is to protect and enhance the quality and quantity of water in the catchment. Within Special Areas, WaterNSW has additional role of maintaining ecological integrity. WaterNSW is also the owner of most of the land over the Dendrobium longwalls.

WaterNSW has established a set of four principles that underpin its approach to managing the impacts of coal mining in Sydney drinking water catchment. A copy of the principles can be found at: [https://www.watnsw.com.au/\\_\\_data/assets/pdf\\_file/0009/119889/Mining-Principles.pdf](https://www.watnsw.com.au/__data/assets/pdf_file/0009/119889/Mining-Principles.pdf). The principles relate to protection of water supply infrastructure, water quantity, water quality and ecological integrity in the Special Areas.

WaterNSW is concerned about the subsidence impacts and environmental consequences of the Dendrobium Mine over the Audit period on surface water and groundwater resources, water quality and upland swamps and creek ecosystems. The reasons for our concerns are provided in Attachment 1 and 2.

Please contact Maria Dubikova or Ravi Sundaram if you require any additional information regarding the Audit.

Yours sincerely



**Camilla Edmunds**  
 Manager Environment and Catchment Protection

## Attachment 1 – Environmental Performance and Compliance

WaterNSW is a key stakeholder involved in the Dendrobium Mine project. WaterNSW works with the regulatory planning and environmental authorities to ensure our interests are protected. In particular WaterNSW focusses on ensuring that predictions of adverse environmental impacts are scientifically robust and impacts are within regulatory limits and approval intentions. WaterNSW also reviews the environmental monitoring and impact reports prepared by the company and assesses whether these impacts are compliant with approval conditions, Performance Measures and consistent with predictions in environmental assessment and management plan documents.

In undertaking a review and providing feedback on the Triennial Independent Environmental Audit WaterNSW has focused on the following issues:

Table 2. Dendrobium SMP Approvals and WaterNSW comments

| Condition   | Issue/Comment   |
|---|---|
| Condition 9, Schedule 3, Area 3B, Longwall 18<br>Condition 10, Schedule 3, Area 3A, Longwall 19   | <p><b>Biodiversity Offset Strategy</b></p> <p>Dendrobium Mine has transferred its Maddens Plain's site in 2016 into the National Parks estate as a Strategic Biodiversity Offset for both the Dendrobium Mine and the Bulli Seam Operation Project.</p> <p>This offset is not benefitting the impacted catchment or Special Areas and WaterNSW considers that the continued use of the Offset has resulted in adoption of mine plans, in the SMPs under review in the audit, for maximum extraction under/near upland swamps.</p>   |
| Condition 13, Schedule 3, Area 3B, Longwall 18<br>Condition 8, Schedule 3, Area 3A, Longwall 19<br>Condition 6, Schedule 3, Area 3C, Longwall 21                | <p><b>Performance Measures</b></p> <p>Performance measures (PM) set in SMP approvals are constrained by performance measures set in the Dendrobium Development Consent.</p> <p>There are no performance measures for 1<sup>st</sup> and 2<sup>nd</sup> order streams even though some of them have significant geomorphic features and permanent pools – e.g. WC21</p>  |
| Condition 13, Schedule 3, Area 3A, Longwall 19<br>Condition 7, Schedule 3, Area 3C, Longwall 21   | <p><b>Rehabilitation</b></p> <p>The only rehabilitation attempted is remediation trial of two pools in Wongawilli Creek tributary WC21 during 2021-2022 as per the Donalds Castle Creek and WC21 Rehabilitation plan. Very limited success is reported to date.</p>   |
| Condition 16 & 17, Schedule 3, Area 3B, Longwall 18<br>Condition 14, 15 & 16 Schedule 3, Area 3A, Longwall 19<br>Condition 10, Schedule 3, Area 3C, Longwall 21 | <p><b>Watercourse Impacts Monitoring and Contingency Plan (WIMMCP) and Swamp Impacts Monitoring and Contingency Plan (SIMMCP) and TARPs</b></p> <p>During the audit period there was a breach of PM reported for Wongawilli Creek Waterfall 54 due to rockfall identified in August 2022 and two water quality exceedances for (a) iron staining in Wongawilli Creek in August 2021 and (b) water quality (pH and EC) in the LA4 tributary of Lake Avon in December 2021.</p> <p>WaterNSW considers that TARP triggers for assessment of swamp ecological function implemented in SIMMPCs for Areas 3B and 3C are inadequate.</p> |

|   |  |
|---|--|
|   | <p>There are numerous monitoring sites in surface and shallow groundwater monitoring program where there is lack of adequate baseline monitoring data.</p>   |
| <p>Condition 19, Schedule 3, Area 3B, Longwall 18<br/>Condition 8, Schedule 3, Area 3C, Longwall 21</p> | <p><b>Groundwater Impact Monitoring and Height of Cracking (HoC)</b></p> <p>Despite of extensive post mining drilling investigations and groundwater monitoring implemented over Areas 3A and 3B longwalls, there is still significant uncertainty in estimation of height of connective fracturing.</p> <p>According to peer review there is not enough data available for longwalls with reduced panel widths that could be used to develop an empirical HoC model for Dendrobium.</p>   |
| <p>Condition 20, Schedule 3, Area 3B<br/>Condition 10, Schedule 3, Area 3A, Longwall 19</p>             | <p><b>Swamp Rehabilitation and Research Program (SRRP)</b></p> <p>WaterNSW has raised concerns previously that some projects under the SRRP (e.g., height of fracturing) are not related to swamp research. The audit must report on the projects included in the SRRP are consistent with the objectives of the SRRP.</p> <p>No swamp remediation trials were done as originally proposed as pre-trial investigations indicated remediation of swamps not to be feasible. Focus is now on research into swamp hydrology changes due to mining and South32 agreed to take over and allocate funds from the SRRP for continuation of swamp hydrology investigations initially funded and managed by WaterNSW.</p> |

## Attachment 2 – Adequacy of Approved Strategies, Plans and Programs

In this attachment WaterNSW comments on implementation of management plans and other monitoring results and trends.

### Swamps monitoring and TARPs

WaterNSW considers that TARP triggers for assessment of swamp ecological function implemented in SIMMPCs for Areas 3B and 3C are inadequate. The soil moisture and groundwater levels are not specifically linked to a swamp performance measure, WaterNSW considers that observed decline in soil moisture and groundwater levels are early and reliable indicators of irreversible changes in swamp hydrology on which ecosystem functionality is dependent.

As indicated in the IEAPUM (2021) advice to Longwall 19 SMP approval, adopting a measure of impact based on changes in proportion of species is likely to be time-lagged to hydrological impacts. Identifying with confidence an exceedance based on observed vegetation changes cannot generally be expected within less than decadal time spans.

Further IEPMC (2019) commented that *“by definition, swamps are groundwater-dependent ecosystems. Therefore, a change in piezometric levels should be the primary gauge of impacts on the ecosystem. If maintenance of ecosystem functionality is to be mandated for any swamp, then piezometric variation must be used not only in TARPs but also in performance measures”*.

### Setback distances to swamps

The recent swamp monitoring data suggest that minimum setback distance from swamps determined from the empirical model developed by Watershed Hydrogeo in 2019 and updated in 2020 and 2023 is not reliable and does not account for potential for longer term impacts.

Watershed Hydrogeo (2019, 2021) assessed swamps monitoring data and concluded that the impacts on Swamps within 60 m of a longwall happen quickly and the magnitude of the hydrological change is significant. However, as stated by the Panel advice to Longwall 19 SMP, avoiding mining within 60 m of a Swamp avoids rapid impact but may not avoid more progressive or subtle impacts where vertical permeability changes are smaller and subsurface cracking frequency is much less than within 60 m.

The recent monitoring of shallow groundwater and soil moisture and the updated empirical swamp model (June, 2023) suggest that setback distance from longwalls warrants more rigorous assessment when implemented in future mine design.

WaterNSW is concerned that a performance measure of negligible environment consequences for Swamp 15a, that was set back by 60 m from Longwall 19, will be exceeded.

### Stream flow monitoring and watercourses TARPs

#### Stream flow

Stream flow monitoring sites including DC13S1, DS2, DCU, LA2S1, LA3S1, LA4S1, WC15S1 and WC21S1 have less than 2 years of baseline monitoring.

There are no conditions of consent or performance measures that directly apply to 1st or 2nd order tributaries located in the vicinity of the approved mining areas. WaterNSW is concerned with permanent changes in stream flow dynamics that impacts on ecological integrity of streams within the mine footprint. Fracturing of bedrock and reduction in baseflow may result in partial or complete loss of pool holding capacity resulting in the loss of stream habitat in lower order streams.

The hydrological impacts for the first and second order streams observed during the Audit period are summarised as follows:

- The estimated median flow in headwater streams decreased by 20-80%. Level 3 stream flow TARPs for median flow continue to be triggered in DC13, DCS2, WC21S1, WC15S1 and LA3S1 and LA4.



- Low flow increased by 25 to 57% of time compared to pre-mining at DC13, DCS2, WC15S, WC21S1, LA3S1 and LA4S1 (TARP Level 3).
- Ceased to flow frequency increased by 10-20% of time compared to baseline at DC13, WC15, WC21 (triggered TARP Level 2), and by 35-40% at DCS2, LA3S1 and LA4S1 (TARP Level 3).

### **Water quality**

During the audit period, there have been reported exceedances for iron staining in Wongawilli Creek catchment and water quality trigger exceedances in LA4 tributary of Lake Avon. Based on the most recent event identified by other agency, but not reported by IMC field staff, there is also lack of confidence, that all water quality events have been identified and reported to date.

WaterNSW is concerned with water quality impacts associated with surface fracturing and recovery of shallow groundwater systems over Dendrobium mine.

Groundwater seepages observed in Wongawilli Ck and WC12 tributary in August had dissolved concentration of iron up to 22.4 mg/L and manganese up to 1.77 mg/L. Ecoengineers (2012) reported the ferruginous springs over Dendrobium area may exhibit elevated concentrations of up to 40 mg/L of iron and up to 2 mg/L of manganese.

Water quality impacts are not confined to the surface groundwater interaction within mine footprint as is described in groundwater assessment. For example, the extent of iron staining was reported over 2.9 km distance downstream of iron spring in Wongawilli Creek in August 2021 (HGEO, 2021) and up to the confluence of Wongawilli Creek and Cordeaux River a year later (Longwall 18 End of Panel report, October 2022).

The water quality data collected at WC\_FR6 (90 mg/L of total iron) demonstrate that increases in stream flow velocity and turbulence during high flow events can result in the increased transport of iron floc downstream. The high pollutant loads associated with the initial runoff may impact on water quality at offtake points and increases in iron concentrations in drinking water supplies can lead to higher treatment costs.

### **Over the goaf investigation program**

Despite of extensive post mining drilling investigations and groundwater monitoring implemented over Areas 3A and 3B longwalls, there is still significant uncertainty in estimation of height of connective fracturing.

There is still not enough data to support development of the site-specific empirical model. The expert review (Hebblewhite, 2020) of height of depressurisation investigations (HGEO, 2020) commented that *"lack of significant differential in height of depressurisation with the reduced panel widths (249 m wide panels in Area 3A vs 305 m panels Area 3B) means that the range of the dataset available to assist with developing an improved prediction model remains inconsistent, and insufficient to enable any further model development based on empirical methods"*.

WaterNSW hasn't received any further information or updates on investigations over completed longwalls in Area 3B since 2020.

### **Revised conceptual model of HoF**

The revision of the conceptual model of height of fracturing (HoF) was presented in the EIA for Dendrobium Area 5 Expansion project. According to this, estimates of HoF based on the Tammetta approach were too conservative and not supported with over goaf investigations and recent groundwater monitoring. The revised conceptual model has been applied for groundwater impact assessment for Longwall 19A SMP.

The discontinued fracture zone presented in the updated conceptual model above Area 3B appears to disagree with assessment of the extent of high angle fracturing reported by HGEO (2020). HGEO concluded that mining-induced fracturing, including high angle fracturing, is highly variable but appears to extend to the surface above longwalls of width 249 m in Area 3A and 305 m in Area 3B. The density of fracturing decreases with height above the goaf, with anomalous fracturing within the BHCS and below 120 m above the goaf.

There appear to be disagreement on surface to seam connectivity between experts involved in assessments of Dendrobium groundwater monitoring data and height of fracturing or depressurisation (PSM, 2017; Mackie, 2017; SCT, 2017 and 2018; Hebblewhite, 2020 and 2022).

### **Groundwater model**

The groundwater model is the only tool used to predict impacts on groundwater and surface water or baseflow to streams. It is highly parametrised and complex numerical model and outputs are greatly affected by the selection of parameters and the conceptual and other assumptions used to develop the model.

Each groundwater modelling report released to date has demonstrated that the groundwater model calibration is acceptable and peer review concluded that the model is fit for purpose. This does not mean that the model predictions are accurate. Comparing models predictions reported to date suggest that there has been a significant increase in estimated surface water loses between the 2014 report and the most recent groundwater assessments.

The groundwater model has been updated numerous times to implement requirements of the approval conditions as well as advances in understanding of subsidence and groundwater impacts from most recent investigations and monitoring. Therefore, WaterNSW requested to include tabulated history of the model revisions and modifications in groundwater model reports. There have been further changes in conceptual models as well as in the modelling approach.

The recent Panel advice to Longwall 19A (2023) commented that the long-term groundwater conditions may still not be adequately represented by the modelling outputs. The mine sealing is implemented in the model, but the effect of mine roadways as high transmissivity connections throughout the mined area has not been implemented when assessing the mine closure and groundwater recovery.

## Attachment 3 – Invitation Letter

**From:** Elliot Holland <[elliott.holland@onward.net.au](mailto:elliott.holland@onward.net.au)>

**Sent:** Thursday, September 7, 2023 9:30 AM

**To:** Glen Capararo <[Glen.Capararo@waternsw.com.au](mailto:Glen.Capararo@waternsw.com.au)>; customer.helpdesk <[customer.helpdesk@waternsw.com.au](mailto:customer.helpdesk@waternsw.com.au)>

**Cc:** Mike Gale <[mike.gale@onward.net.au](mailto:mike.gale@onward.net.au)>; Bradbury, Amy <[Amy.Bradbury@south32.net](mailto:Amy.Bradbury@south32.net)>; Schultz, Chris <[Chris.Schultz1@south32.net](mailto:Chris.Schultz1@south32.net)>

**Subject:** [EXTERNAL] IMC-001: Dendrobium Mine 2023 IEA - Agency/stakeholder consultation (WaterNSW)

**Importance:** High

Hi Glen,

South32 Illawarra Metallurgical Coal (South32 IMC) has engaged Onward Consulting to undertake an independent environmental audit (IEA) of their Dendrobium Mine. This audit would be prepared in accordance with Condition 6 of Schedule 8 of the Development Consent (DA 60-03-2001, as modified). The focus of the IEA will be:

- compliance with the conditions of:
  - DA 60-03-2001;
  - EPL 3241;
  - ML 1510;
  - ML 1566;
  - CCL 768; and
- SMP approvals for longwalls 17, 18, 19 and 21.
- evidence of implementation and effectiveness of the site's environmental management plans as part of the conditions of DA 60-03-2001;
- compliance with Schedule 8A of Mining Regulation 2016;
- assessment of environmental risks at the site during a site visit; and
- recommending measures or actions to improve the environmental performance of the project and/or any assessment, plan or program required under the approval.

I am writing to you to invite comment from yourself regarding South32 IMC's operations at Dendrobium Mine (as they relate to DA 60-3-2001) so that we may adequately address any concerns during the audit. I also invite you to comment on South32 IMC's performance with other requirements, as you may deem appropriate.

It would be appreciated if you could provide your comments regarding the performance of South32 IMC's in meeting these obligations under the following headings:

- Compliance with requirements;
- Progress to meeting requirements;
- Details of incidents of non-compliance;
- Adequacy of actions taken; and
- Adequacy of the requirements of the approval/licence.

The site visit for the audit is currently scheduled to be conducted the Monday-Wednesday, 9-11 October 2023. It would be appreciated if you could submit your written comments by close of business Friday, 29 September 2023.

All correspondence in relation to the IEA should be directed to Elliot Holland (Senior Environmental Project Manager / Exemplar Global Lead Auditor – EMS) on 0427 863 567 or [elliott.holland@onward.net.au](mailto:elliott.holland@onward.net.au).

## Elliot Holland

---

**From:** Ron Zwicker <RZwicker@wollongong.nsw.gov.au>  
**Sent:** Wednesday, September 13, 2023 12:07 PM  
**To:** Elliot Holland  
**Subject:** RE: IMC-001: Dendrobium Mine 2023 IEA - Agency/stakeholder consultation (Wollongong City Council)

Hi Elliot,

Thanks for the opportunity to provide comments on the Dendrobium Mine 2023 Independent Environmental Assessment.

It is requested that the IEA address the following matters:

1. The preparation of a full table of compliance of the mine's activities with the Development Consent No. DA 60-03-2001.
2. Specific review of the mine's performance with respect to water management and subsidence related impacts upon the water catchment.
3. Specific review of the mine's impact upon watercourses / creeks within the subject area, including the mine's performance relating to the watercourse impact, monitoring, management and contingency plan.
4. Specific review of the mine's impact performance upon upland swamps against the swamp impact, monitoring, management and contingency plan.
5. Review of air, water and noise monitoring data and how the mine performs against the conditions of the consent and other management plans relating to these issues.

Thank you!

Regards,



**Ron Zwicker | Special Projects and Planning Support Manager**  
**Phone** +61242277639  
**Email** rzwicker@wollongong.nsw.gov.au | [wollongong.nsw.gov.au](http://wollongong.nsw.gov.au)



*We acknowledge the Traditional Custodians of the land on which our city is built, the Aboriginal people of Dharawal Country.*

*We recognise and appreciate their deep connection to this land, waters and the greater community.*



---

**From:** Elliot Holland <elliot.holland@onward.net.au>  
**Sent:** Thursday, 7 September 2023 9:30 AM  
**To:** Ron Zwicker <RZwicker@wollongong.nsw.gov.au>; Records <Records@wollongong.nsw.gov.au>  
**Cc:** Mike Gale <mike.gale@onward.net.au>; Bradbury, Amy <Amy.Bradbury@south32.net>; Schultz, Chris <Chris.Schultz1@south32.net>  
**Subject:** IMC-001: Dendrobium Mine 2023 IEA - Agency/stakeholder consultation (Wollongong City Council)  
**Importance:** High

**[EXTERNAL EMAIL]** This email was sent from outside of Wollongong City Council – be cautious, particularly with links and attachments.

Hi Ron,

South32 Illawarra Metallurgical Coal (South32 IMC) has engaged Onward Consulting to undertake an independent environmental audit (IEA) of their Dendrobium Mine. This audit would be prepared in accordance with Condition 6 of Schedule 8 of the Development Consent (DA 60-03-2001, as modified). The focus of the IEA will be:

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Regards,

Elliot Holland

Senior Environmental Project Manager / Exemplar Global Lead Auditor – EMS



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[elliott.holland@onward.net.au](mailto:elliott.holland@onward.net.au)

Suite 2, Level 1, 28 Donald Street, Hamilton NSW  
2303

[www.onward.net.au](http://www.onward.net.au)

*Please note my work days are Monday-Thursday. For anything urgent, please contact Mike Gale at [mike.gale@onward.net.au](mailto:mike.gale@onward.net.au). Otherwise, I will respond to your email as soon as possible when I am back in the office.*

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## Elliot Holland

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**From:** Elliot Holland  
**Sent:** Thursday, September 7, 2023 9:30 AM  
**To:** heather.middleton@damsafety.nsw.gov.au; info@damsafety.nsw.gov.au  
**Cc:** mike.gale@onward.net.au; Bradbury, Amy; Schultz, Chris  
**Subject:** IMC-001: Dendrobium Mine 2023 IEA - Agency/stakeholder consultation (Dams Safety)

**Importance:** High

Hi Heather,

South32 Illawarra Metallurgical Coal (South32 IMC) has engaged Onward Consulting to undertake an independent environmental audit (IEA) of their Dendrobium Mine. This audit would be prepared in accordance with Condition 6 of Schedule 8 of the Development Consent (DA 60-03-2001, as modified). The focus of the IEA will be:

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- recommending measures or actions to improve the environmental performance of the project and/or any assessment, plan or program required under the approval.

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Regards,

# Elliot Holland


Senior Environmental Project Manager / Exemplar Global Lead Auditor – EMS

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 +61427863567

 [elliot.holland@onward.net.au](mailto:elliot.holland@onward.net.au)

 Suite 2, Level 1, 28 Donald Street, Hamilton NSW  
2303

 [www.onward.net.au](http://www.onward.net.au)

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## Elliot Holland

---

**From:** Elliot Holland  
**Sent:** Thursday, September 7, 2023 9:28 AM  
**To:** rog.illawarra@environment.nsw.gov.au; dana.alderson@environment.nsw.gov.au; marnie.stewart@environment.nsw.gov.au  
**Cc:** mike.gale@onward.net.au; Bradbury, Amy; Alchin, James; Schultz, Chris  
**Subject:** IMC-001: Dendrobium Mine 2023 IEA - Agency/stakeholder consultation (Biodiversity and Conservation)

**Importance:** High

Hi Dana/Marnie,

South32 Illawarra Metallurgical Coal (South32 IMC) has engaged Onward Consulting to undertake an independent environmental audit (IEA) of their Dendrobium Mine. This audit would be prepared in accordance with Condition 6 of Schedule 8 of the Development Consent (DA 60-03-2001, as modified). The focus of the IEA will be:

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Regards,

# Elliot Holland


Senior Environmental Project Manager / Exemplar Global Lead Auditor – EMS

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## Elliot Holland

---

**From:** Elliot Holland  
**Sent:** Thursday, September 7, 2023 9:30 AM  
**To:** info@epa.nsw.gov.au; andrew.couldridge@epa.nsw.gov.au  
**Cc:** mike.gale@onward.net.au; Bradbury, Amy; Schultz, Chris  
**Subject:** IMC-001: Dendrobium Mine 2023 IEA - Agency/stakeholder consultation (EPA)

**Importance:** High

Hi Andrew,

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Regards,


Elliot Holland

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## Elliot Holland

---

**From:** Elliot Holland  
**Sent:** Thursday, September 7, 2023 9:29 AM  
**To:** mail@wsc.nsw.gov.au  
**Cc:** mike.gale@onward.net.au; Bradbury, Amy; Schultz, Chris  
**Subject:** IMC-001: Dendrobium Mine 2023 IEA - Agency/stakeholder consultation (Wingecarribee Shire Council)

**Importance:** High

Hi,

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Regards,

Elliot Holland



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## Elliot Holland

---

**From:** Elliot Holland  
**Sent:** Thursday, September 7, 2023 9:29 AM  
**To:** michael.banasik@wollondilly.nsw.gov.au; David.Henry@wollondilly.nsw.gov.au;  
council@wollondilly.nsw.gov.au  
**Cc:** mike.gale@onward.net.au; Bradbury, Amy; Schultz, Chris  
**Subject:** IMC-001: Dendrobium Mine 2023 IEA - Agency/stakeholder consultation (Wollondilly Shire Council)

**Importance:** High

Hi Michael/David,

South32 Illawarra Metallurgical Coal (South32 IMC) has engaged Onward Consulting to undertake an independent environmental audit (IEA) of their Dendrobium Mine. This audit would be prepared in accordance with Condition 6 of Schedule 8 of the Development Consent (DA 60-03-2001, as modified). The focus of the IEA will be:

- compliance with the conditions of:
  - DA 60-03-2001;
  - EPL 3241;
  - ML 1510;
  - ML 1566;
  - CCL 768; and
  - SMP approvals for longwalls 17, 18, 19 and 21.
- evidence of implementation and effectiveness of the site's environmental management plans as part of the conditions of DA 60-03-2001;
- compliance with Schedule 8A of Mining Regulation 2016;
- assessment of environmental risks at the site during a site visit; and
- recommending measures or actions to improve the environmental performance of the project and/or any assessment, plan or program required under the approval.

I am writing to you to invite comment from yourself regarding South32 IMC's operations at Dendrobium Mine (as they relate to DA 60-3-2001) so that we may adequately address any concerns during the audit. I also invite you to comment on South32 IMC's performance with other requirements, as you may deem appropriate.

It would be appreciated if you could provide your comments regarding the performance of South32 IMC's in meeting these obligations under the following headings:

- Compliance with requirements;
- Progress to meeting requirements;
- Details of incidents of non-compliance;
- Adequacy of actions taken; and
- Adequacy of the requirements of the approval/licence.

The site visit for the audit is currently scheduled to be conducted the Monday-Wednesday, 9-11 October 2023. It would be appreciated if you could submit your written comments by close of business Friday, 29 September 2023.

All correspondence in relation to the IEA should be directed to Elliot Holland (Senior Environmental Project Manager / Exemplar Global Lead Auditor – EMS) on 0427 863 567 or [elliott.holland@onward.net.au](mailto:elliott.holland@onward.net.au).


Regards,

# Elliot Holland


Senior Environmental Project Manager / Exemplar Global Lead Auditor – EMS

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*Please note my work days are Monday-Thursday. For anything urgent, please contact Mike Gale at [mike.gale@onward.net.au](mailto:mike.gale@onward.net.au). Otherwise, I will respond to your email as soon as possible when I am back in the office.*

*Where you have received this email outside 8.30am to 5.00pm Monday to Friday, I am sending you this message now because it is a good time for me. Please know, I do not expect you to read, respond or action anything in this message outside your regular hours.*

CONFIDENTIALITY NOTICE: This email, including any attachments, is confidential and may be privileged. If you are not the intended recipient please notify the sender immediately, and please delete it; you should not copy it or use it for any purpose or disclose its contents to any other person.



## Appendix D

### DA 60-03-2001 (as modified)

| Condition # | Details   | Compliance status   | Relevant evidence   | Commentary  |
|-------------|---|---------------------|---|---|
|             | <b>SCHEDULE 2 – ADMINISTRATIVE CONDITIONS</b>   |                     |   |   |
|             | <b>Obligation to Minimise Harm to the Environment</b>   |                     |   |   |
| 1           | The Applicant must implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the development.  | Non-compliant (Low) | <ul style="list-style-type: none"> <li>Findings of this audit.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>14-day monitoring data reporting as available on the IMC website.</li> <li>Site inspection completed 9, 10 and 11 October 2023.</li> <li>Site interviews completed 9, 10 and 11 October 2023.</li> </ul> | <p><b>2020 IEA Recommendation:</b><br/>The release from the sediment dam is currently under investigation by the regulator.</p> <p><b>2023 IEA Findings:</b><br/><u>Status of 2020 IEA Recommendation:</u><br/>An investigation determined that the cause of the event was the corrosion and subsequent failure of a clean water diversion pipe beneath the sediment pond. This caused a void to form underneath the sediment pond and the subsequent release of water. A clean-up program was implemented to remove the coal fines. An environmental assessment of the creeks in November 2020 observed no ongoing evidence of coal fines.<br/>Measures to reinstate the sediment pond were undertaken, including replacement of the clean water diversion pipe. The sediment pond returned to normal operation in December 2020.<br/>Review of documentation indicates no further direction was given and this recommendation is considered closed.</p> <p><u>2023 IEA Findings</u><br/>The audit determined non-compliances in relation to documentation of subsidence performance measures for Swamp 15a in the SIMMCP for LW 19, which are inconsistent with the requirements of Condition 8 of the SMP Approval for LW 19. This has resulted in these performance measures being incorrectly adopted in EOP reporting for LW 19.<br/>The incorrect documentation of these performance measures as 'minor' and 'no significant change', instead of 'negligible', has resulted in development and implementation (i.e. triggering) of TARPs for LW 19 that are not correctly considering potential impacts and potential exceedance of performance measures for Swamp 15a.<br/>There was no evidence to indicate harm to the environment has occurred due to the incorrect documentation of performance measures, as this was not able to be confirmed during the audit. However, as a consequence of adopting the incorrect performance measures, a non-compliance has been identified in relation to the requirement to implement all reasonable and feasible measures to prevent or minimise harm to the environment due to the incorrect development and implementation (i.e. triggering) of TARPs, and associated reporting.<br/>Further discussion is provided at Schedule 3, Conditions 5 and 6.</p> |
|             | <b>Terms of Consent</b>   |                     |   |   |
| 2           | The Applicant must carry out the development generally in accordance with the:<br>(a) Development Application (DA 60-03-2001), EIS and associated submissions to the Dendrobium Underground Coal Mine Project Commission of Inquiry, and in particular its: <ul style="list-style-type: none"> <li>Primary Submission (the Dendrobium Project, dated 30 July 2001);</li> <li>Submission in Reply (the Dendrobium Project, undated); and</li> <li>Environmental Effects of Subsidence Associated with the Dendrobium Project, prepared by National Environmental Consulting Services and dated August 2001;</li> </ul> (b) Modification Application dated 12 February 2002 and supporting information dated 27 January 2002;<br>(c) Modification Application and supporting information dated 24 May 2002 and additional supporting information dated 14 June 2002;<br>(d) Modification Application and Statement of Environmental Effects for the Dendrobium Coal Sizer, prepared by Olsen Environmental Consulting and dated March 2005;<br>(e) Application for Further Approval of West Cliff Emplacement Area Stage 3, Vol 2 (including Appendices), prepared by Cardno Forbes Rigby and dated July 2007, associated Response to | Compliant           | <ul style="list-style-type: none"> <li>This audit</li> <li>Site inspection completed 9, 10 and 11 October 2023.</li> <li>Site interviews completed 9, 10 and 11 October 2023.</li> </ul>  | Conduct of the 2023 IEA, including review of documentation, site interviews and site audit indicate compliance with the requirements of this condition.   |

| Condition # | Details   | Compliance status   | Relevant evidence   | Commentary  |
|-------------|---|---------------------|---|---|
|             | Submissions dated 1 November 2007 and associated Statement of Commitments dated 28 November 2007 (see Appendix 3);<br>(f) Modification Application – Modification of Area 3 Footprint and Review of Conditions of Consent dated 27 November 2007, EA and associated Statement of Commitments (see Appendix 4); and (g) Modification 7, Modification 8 and Modification 9.   |                     |   |   |
| 2A          | The Applicant must carry out the development in accordance with the conditions of this consent.   | Non-compliant (Low) | <ul style="list-style-type: none"> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Site inspection completed 9, 10 and 11 October 2023.</li> <li>Site interviews completed 9, 10 and 11 October 2023.</li> </ul>  | Non-compliance with this condition is noted in relation to non-compliances with other conditions detailed in this table.  |
| 2B          | The Applicant must carry out the development generally in accordance with the development layout shown in Appendix 2.   | Compliant           | Shapefile of up-to-date disturbance footprint dated September 2023.   | Review of relevant documentation verifies compliance with the requirements of this condition.   |
| 3           | If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.   | Note                | N/A.  | N/A.  |
| 4           | The Applicant must comply with any reasonable and feasible requirement/s of the Secretary arising from the Department's assessment of:<br>(a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with the conditions of this consent;<br>(b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with the conditions of this consent; and<br>(c) the implementation of any actions or measures contained in these documents. | Compliant           | <ul style="list-style-type: none"> <li>Management Plan Review Log spreadsheet tracking edits as recently as August 2023.</li> <li>Environmental Documents spreadsheet tracking current document dates and identifying next review dates.</li> <li>Site interviews completed 9, 10 and 11 October 2023.</li> </ul> | Site interviews discussed revision history for relevant management plans, with the Management Plan review log sighted and noted to document management plan updates, including as required by audits and reviews.   |
|             | <b>Limits on Consent</b>  |                     |   |   |
| 5           | Mining operations may take place in the mining area until 31 December 2030.   | Compliant           | Still within approved period.   | Still within approved period.   |
|             | Note: Under this consent, the Applicant is required to rehabilitate the site in accordance with the conditions of this consent and those imposed on the mining lease(s) associated with the development under the Mining Act 1992. Consequently, this consent will continue to apply in all other respects other than the right to conduct mining operations until the site has been rehabilitated to a satisfactory standard.  | Note                | N/A   | N/A.  |
| 6           | The Applicant must not extract more than 5.2 million tonnes of ROM coal a year from the mining area.  | Compliant           | Annual Reviews for FY21, FY22, and FY23.  | Review of relevant documentation verifies compliance with the requirements of this condition, with extraction of ROM during the reporting period being: <ul style="list-style-type: none"> <li>FY21: 4.58 million tonnes;</li> <li>FY22: 3.43 million tonnes; and</li> <li>FY23: 4.593 million tonnes.</li> </ul> |
| 7           | The Applicant must only transport coal from the surface facilities by rail.   | Compliant           | Annual Reviews for FY21, FY22, and FY23.  | Review of relevant documentation verifies compliance with the requirements of this condition.   |
|             | <b>Staged Submission of Management Plans/Monitoring Programs</b>  |                     |   |   |
| 8           | With the approval of the Secretary, the Applicant may submit any management plan or monitoring program required by this consent on a progressive basis.   | Compliant           | <ul style="list-style-type: none"> <li>Management Plan Review Log spreadsheet tracking edits as recently as August 2023.</li> <li>Environmental Documents spreadsheet tracking current document dates and identifying next review dates.</li> </ul>   | Review of relevant documentation verifies compliance with the requirements of this condition.   |
| 9           | The Applicant must ensure that monitoring programs, management plans and the Environmental Management Strategy, as in existence at the date of modification of consent in November 2008, continue to be implemented (to the satisfaction of the Secretary) until replaced by monitoring programs and management plans approved in accordance with the conditions of this consent.   | Note                | N/A   | Condition considered as part of previous audit and not relevant during the current audit period.  |

| Condition # | Details  | Compliance status | Relevant evidence  | Commentary  |
|-------------|--|-------------------|--|---|
|             | <b>Structural Adequacy</b>   |                   |  |   |
| 10          | The Applicant must ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.   | Compliant         | <ul style="list-style-type: none"> <li>- Annual Reviews for FY21, FY22, and FY23.</li> <li>- Structural Design Certificate (Ref. 220807) for Stairs 1A and 1B. Dated 15/09/2022.</li> <li>- Structural Design Certificate (Ref. 220734) for Modular Buildings – Double Stack Bathhouse. Dated 11/08/2022.</li> </ul> | <p>Review of relevant documentation indicates the following new buildings / structures, and alterations / additions to existing buildings and structures were undertaken during the audit period:</p> <ul style="list-style-type: none"> <li>- FY21: <ul style="list-style-type: none"> <li>- Dendrobium Coal Preparation Plant (DCPP): Structural repairs, re-sheeting, replacement of four tailings presses and conveyor pulldrums.</li> </ul> </li> <li>- FY22: <ul style="list-style-type: none"> <li>- DCPP: Structural repairs, guarding compliance, re-sheeting, handrails and ladder repairs and replacements, electrical circuit earth leakage fixes, conveyor fire protection systems maintenance, conveyor pull cord compliance and lift control system compliance.</li> <li>- female bath house: Replacing the existing arrangement commenced and continued into, and completed in, 2023;</li> <li>- retaining wall replacement: Behind the bulk store, with replacement required due to degradation. Works continued into, and completed in, 2023;</li> <li>- TransGrid 330 kV Transmission Tower assets: Mitigation works at Tower 14. including tower member strengthening and installation of rollers were successfully upgraded in July 2022;</li> <li>- awning installation to provide undercover area for locker storage;</li> <li>- bulk hydrocarbon storage container installation on the Portal Road (self-bunded);</li> <li>- hot water system upgrades for the Men's Bath House;</li> <li>- DCPP: Structural repairs, guarding compliance, re-sheeting, handrails and ladder repairs and replacements, electrical circuit earth leakage fixes, conveyor fire protection systems maintenance, conveyor pull cord compliance and lift control system compliance; and</li> </ul> </li> <li>- FY23: <ul style="list-style-type: none"> <li>- DCPP: Structural repairs, guarding compliance, re-sheeting, handrails and ladder repairs and replacements, electrical circuit earth leakage fixes, conveyor fire protection systems maintenance, conveyor pull cord compliance and lift control system compliance; and</li> </ul> </li> </ul> <p>Review of relevant documentation verifies compliance with the requirements of this condition.</p> |
|             | <p>Notes:</p> <ul style="list-style-type: none"> <li>- Under Part 6 of the EP&amp;A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works.</li> <li>- Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 sets out the requirements for the certification of the development.</li> </ul> | Note              | N/A  | N/A.  |

| Condition # | Details  | Compliance status | Relevant evidence   | Commentary   |
|-------------|--|-------------------|---|--|
|             | <b>Demolition</b>  |                   |   |  |
| 11          | The Applicant must ensure that all demolition work is carried out in accordance with <i>Australian Standard AS 2601-2001: The Demolition of Structures</i> , or its latest version.  | Compliant         | Annual Reviews for FY21, FY22, and FY23.  | <p>Review of relevant documentation indicates the following demolition work was completed during the audit period:</p> <ul style="list-style-type: none"> <li>- FY21: <ul style="list-style-type: none"> <li>- removal of the O'Brien's Gap pumphouse (May 2021). This involved the demolition of the pumphouse building. Contaminated soil identified post demolition was removed from site in FY22;</li> <li>- demolition and rehabilitation of a section of the 6-67 powerline circuit (Wongawilli to Wongawilli Air Shaft) that was within rural residential areas (August 2020). This involved the removal of poles and wires; and</li> <li>- removal of the final power pole associated with the 6-10/15 circuit from BlueScope Steel to Figtree, located in the Australian Rail Track Corporation corridor (June 2021).</li> </ul> </li> <li>- FY22: Removal of existing concrete and forming to facilitate construction of the new retaining wall behind the bulk store.</li> <li>- FY23: There was no demolition during the reporting period.</li> </ul> <p>Review of relevant documentation verifies compliance with the requirements of this condition.</p> |
|             | <b>Operation of Plant and Equipment</b>  |                   |   |  |
| 12          | The Applicant must ensure that all plant and equipment used on site is:<br>(a) maintained in a proper and efficient condition; and<br>(b) operated in a proper and efficient manner. | Compliant         | <ul style="list-style-type: none"> <li>- Site inspection completed 9, 10 and 11 October 2023.</li> <li>- South32 Environmental Skills Matrix, tracking currency of training.</li> <li>- Environmental Awareness Training online course managed on the South32 IMC system.</li> <li>- Tracking of currency of personnel's completion of the Environmental Awareness Training online course.</li> <li>- Environment General Training &amp; Competency training form (IMCTRN0831) sample for environment team member, dated 27 April 2022.</li> <li>- Site Introduction – Electric Welder (DENF0243) form.</li> <li>- Site Introduction of Plant – Diesel Plant (DENF0209) form sample for LHD-1005 dated 2 June 2023.</li> <li>- Site Introduction of Plant – General Equipment (DENF0222) form.</li> </ul> | <p><b>2020 IEA Recommendation:</b><br/>Maintain training records to ensure employees have received appropriate training.</p> <p><b>2023 IEA Findings:</b><br/><u>Status of 2020 IEA Recommendation:</u><br/>Review of relevant documentation indicates R02 has been closed out.</p> <p><u>2023 IEA Findings</u><br/>Review of relevant documentation verifies compliance with the requirements of this condition.</p>  |

| Condition # | Details   | Compliance status | Relevant evidence  | Commentary   |
|-------------|---|-------------------|--|--|
|             | <b>Community Enhancement</b>  |                   |  |  |
| 13          | <p>The Applicant must contribute \$0.03 per tonne of saleable coal production each financial year to fund the provision of significant present and future benefits to local communities directly affected by the development.</p> <p>These funds must be:</p> <p>(a) administered and expended in accordance with procedures which are to the satisfaction of WCC and the Secretary;</p> <p>(b) provided by 30 September each year over the life of the consent;</p> <p>(c) based on saleable coal production in the previous financial year; and</p> <p>(d) indexed in accordance with the CPI, with April 2005 used as the commencement date for indexation calculations.</p> <p>Any dispute over the operation of this fund must be referred to the Secretary for resolution.</p>  | Compliant         | <ul style="list-style-type: none"> <li>- DCEP Calculations spreadsheets for FY21, FY22, and FY23.</li> <li>- Annual Reviews for FY21, FY22, and FY23.</li> </ul> | <p>Review of relevant documentation verifies compliance with the requirements of this condition, with local projects and activities supported during the audit period including:</p> <ul style="list-style-type: none"> <li>- FY21: Ryan Park playground, Mount Kembla; essential fire-fighting equipment, Farmborough Heights Rural Fire Brigade; Life Education Program in local schools; Yesterday Stories Project, Wollongong Heritage Collections; maintenance equipment, Mount Kembla Pathway; water bubbler, Mount Kembla Pathway; and Western Suburbs Pool Shade cover, Unanderra.</li> <li>- FY22: Covid-19 support to various local schools, Covid-19 support to various local charities supporting the disadvantaged, Life Education Program in local schools, Yesterday Stories Project, Wollongong Heritage Collections, maintenance equipment, Mount Kembla Pathway, Figtree AFL Club uniforms, training equipment and mental health program, Mount Kembla Rugby Club uniforms and training equipment, Mount Kembla Church lead light window upgrade, Lindsay Mayne Park facilities, and Various wellness programs at local schools.</li> <li>- FY23: Figtree Australian Football Club, Figtree Anglican Church Soldiers and Miners Memorial Church, Mount Kembla Rugby Club, Unanderra Public School, Figtree Public School, Mount Kembla Public School, Mount Kembla Pathway Group, Figtree Community Carols, Wollongong Motorcycle Club, Nareena Hills Public School, and Wests Illawarra Junior Hockey.</li> </ul> |
|             | <b>Costs of Management Measures</b>   |                   |  |  |
| 14          | <p>The Applicant must be responsible for the costs of all management measures (including measures to minimise, mitigate, offset or remediate impacts of the development which are not recoverable by a third party through the Coal Mine Subsidence Compensation Act 2017 or the Mining Act 1992) including but not limited to remediation of natural features, rehabilitation of ecological systems, the provision of supplementary waters and monitoring of the effectiveness of the works, as determined by the Secretary.</p>   | Note              | N/A.   | N/A.   |
|             | <b>Strategic Biodiversity Offsets</b>   |                   |  |  |
| 15          | <p>If the Applicant is required to provide a biodiversity offset pursuant to this consent (including any biodiversity offset that is required under the conditions of a subordinate approval issued in accordance with this consent), the Secretary, in consultation with BCS, may accept in satisfaction of the requirement for the biodiversity offset, the provision of land that has conservation values which exceed the conservation values required to meet the relevant offsetting requirement.</p> <p>If the Secretary accepts such an offset under this condition, the Secretary must issue a written statement to the Applicant advising:</p> <p>(a) the details of the proposed offset land;</p> <p>(b) the offset requirements that are being met;</p> <p>(c) the conservation values that have been relied upon to meet the offsetting requirements; and</p> <p>(d) that in the opinion of the Secretary:</p> <p>(i) the land has offsetting values in addition to those that have been relied upon to meet the offsetting requirement in condition 15(b); or</p> <p>(ii) if the land has been subject to a previous statement from the Secretary under this condition, confirmation that the land continues to have conservation values in addition to those that have been relied upon to meet the previous offsetting requirement, or that there are no further conservation values available in respect of the land.</p> <p>If the Secretary has issued a statement under this condition, the Applicant can rely on that statement and the residual conservation values that the land subject to the statement may hold, to meet further offsetting requirement(s) that may be required under this consent or the project approval for the Bulli Seam Operations Project (08_0150).</p> <p>The Secretary's statement under this condition can be relied on a number of times in respect of the same land until all of the conservation values of the land the subject of the Secretary's statement have been relied upon to meet offsetting requirements under this consent or the approval for the Bulli Seam Operations Project (08_0150).</p> <p>The Applicant must make suitable arrangements to provide appropriate long-term security for the biodiversity offset area(s) accepted under this condition, within 2 years of the date of the Secretary's statement in respect of that land, unless otherwise agreed with the Secretary.</p> | Not triggered     | N/A.   | N/A – Considered as part of 2017/2020 IEAs.  |

| Condition # | Details   | Compliance status | Relevant evidence   | Commentary   |
|-------------|---|-------------------|---|--|
|             | <b>SCHEDULE 3 - SPECIFIC ENVIRONMENTAL CONDITIONS</b>   |                   |   |  |
|             | <b>Mining Area</b>  |                   |   |  |
|             | <b>SUBSIDENCE</b>   |                   |   |  |
|             | <i>Note: These conditions should be read in conjunction with the Statement of Commitments.</i>  | <i>Note</i>       | <i>N/A</i>  | <i>N/A.</i>  |
|             | <b>Watercourse Impact Management</b>  |                   |   |  |
| 1           | <p>The Applicant must ensure that, as a result of the development:</p> <p>(a) no rock fall occurs at Sandy Creek Waterfall or from its overhang;</p> <p>(b) the structural integrity of the waterfall, its overhang and its pool are not impacted;</p> <p>(c) cracking in Sandy Creek within 30 m of the waterfall is of negligible environmental and hydrological consequence; and</p> <p>(d) negligible diversion of water occurs from the lip of the waterfall to the satisfaction of the Secretary.</p> | Compliant         | <ul style="list-style-type: none"> <li>- Wongawilli Creek and Waterfall 54 Management Strategy (WCWMS) (Rev E, May 2021).</li> <li>- Water Management Plan (WMP) (Rev 8.0, 4 August 2023).</li> <li>- SMPs: <ul style="list-style-type: none"> <li>- LW 16 (Area 3B) (October 2017);</li> <li>- LW 17 (Area 3B) (March 2019);</li> <li>- LW 18 (Area 3B) (November 2020);</li> <li>- LW 19 (Area 3A) (March 2021);</li> <li>- LW 19A (Area 3A) (September 2022);</li> <li>- LW 20 &amp; 21 (Area C) (November 2019); and</li> <li>- LW 22 &amp; 23 (Area 3C) (September 2021).</li> </ul> </li> <li>- Watercourse Impact, Monitoring, Management and Contingency Plans (WIMMCPs): <ul style="list-style-type: none"> <li>- LW 16 (Area 3B) (March 2019);</li> <li>- LW 17 (Area 3B) (February 2020);</li> <li>- LW 18 (Area 3B) (August 2020);</li> <li>- LW 19 (Area 3A) (February 2021);</li> <li>- LW 19A (Area 3A) (September 2022);</li> <li>- LW 21 (Area 3C) (September 2021); and</li> <li>- LW 22 &amp; 23 (Area 3C) (September 2021).</li> </ul> </li> <li>- Sandy Creek Waterfall Management Plan (updated 15.01.21 to manage LW 19 in Area 3A);</li> <li>- Annual Reviews for FY21, FY22, and FY23, including Subsidence Monitoring Program updates, provided as an Appendix to Annual Reviews</li> </ul> | No impact to Sandy Creek or waterfall due to extraction of LW16-18 and LW19 in Area 3A. LW21 in Area 3C had also retreated 645 m away from SC by 30 June 2023. |

| Condition # | Details  | Compliance status | Relevant evidence  | Commentary   |
|-------------|--|-------------------|--|--|
|             |  |                   | <ul style="list-style-type: none"> <li>- Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>- Site inspection completed 9, 10 and 11 October 2023.</li> <li>- Site interviews completed 9, 10 and 11 October 2023.</li> <li>- Subsidence Monitoring Program updates, provided as an Appendix to Annual Reviews.</li> <li>- End of Panel (EOP) reports: <ul style="list-style-type: none"> <li>- LW 16 (Area 3B ) (March 2021);</li> <li>- LW 17 (Area 3B) (April 2022);</li> <li>- LW 18 (Area 3B) (October 2022); and</li> <li>- LW 19 (Area 3A) (July, 2023).</li> </ul> </li> </ul>   |  |
| 2           | <p>The Applicant must ensure that underground mining operations do not cause subsidence impacts at Sandy Creek and Wongawilli Creek other than 'minor impacts' (such as minor fracturing, gas release, iron staining and minor impacts on water flows, water levels and water quality) to the satisfaction of the Secretary.</p> | Compliant         | <ul style="list-style-type: none"> <li>- Annual Reviews for FY21, FY22, and FY23, including Subsidence Monitoring Program updates, provided as an Appendix to Annual Reviews.</li> <li>- Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>- SMPs: <ul style="list-style-type: none"> <li>- LW 16 (Area 3B) (October 2017);</li> <li>- LW 17 (Area 3B) (March 2019);</li> <li>- LW 18 (Area 3B) (November 2020);</li> <li>- LW 19 (Area 3A) (March 2021);</li> <li>- LW 19A (Area 3A) (September 2022);</li> <li>- LW 20 &amp; 21 (Area C) (November 2019); and</li> <li>- LW 22 &amp; 23 (Area 3C) (September 2021).</li> </ul> </li> <li>- WIMMCPs: <ul style="list-style-type: none"> <li>- LW 16 (Area 3B) (March 2019);</li> <li>- LW 17 (Area 3B) (February 2020);</li> <li>- LW 18 (Area 3B) (August 2020);</li> <li>- LW 19 (Area 3A) (February 2021);</li> <li>- LW 19A (Area 3A) (September 2022);</li> </ul> </li> </ul> | <p><b>Water flows and pool levels</b></p> <p>Since the end of panel report for Longwall 15 (in 2020), the assessment of mining effects on surface water flow around Area 3B has been reported in EOP reports using TARP methods which have been agreed through consultation with the various responsible agencies and set out in the Area 3B WIMMCP (Wongawilli Creek), and Area 3A WIMMCP (Sandy Creek). The assessment involves comparison of flow hydrographs between potentially impacted sites and reference sites – focussing on the following:</p> <ul style="list-style-type: none"> <li>- A – General hydrological behaviour - change in flow exceedance behaviour compared to Reference Sites (greater proportion of time with lower flow than expected based on Reference Q%ile)</li> <li>- B – Relative change in the frequency of cease-to-flow days compared to that at Reference Sites (Greater proportion (%) of time that cease-to-flow conditions occur)</li> <li>- C – Relative change in median flow ('Q50') compared to Reference Site flows.</li> <li>- D – Assess whether observed dry pools and 'cease-to-flow' conditions along the 'middle reach' of Wongawilli Creek between WWU and WWL gauging stations are anomalies.</li> </ul> <p>The agreed performance measures for 'minor' impacts are defined as follows:</p> <ul style="list-style-type: none"> <li>- For Wongawilli Creek – Assessment Methods C and D, to be compared against predictions made in contemporary groundwater modelling conducted to the satisfaction of the Secretary to assess whether effects that cannot be explained by natural variability 'exceed prediction'.</li> <li>- For Sandy Creek – Assessment Method C to be compared against predictions made in contemporary groundwater modelling conducted to the satisfaction of the Secretary to assess whether effects that cannot be explained by natural variability 'exceed prediction'.</li> </ul> <p>These measures are reported in the EOP reports, with no exceedances reported in the audit period. No data has been presented since the LW19 EOP, which was issued in July 2023. Subsequent data is not available as reporting for LW21 EOP falls outside the audit period, with the EOP report not due for submission until December 2023.</p> <p>Note that during the audit period, flow TARPs were triggered at a number of locations in Area 3B:</p> <ul style="list-style-type: none"> <li>- towards the end of 2017, the water level in Pool 50 (previously 43a) on Wongawilli Creek fell below baseline levels (impact number DA3B_LW13_015, dated 28/11/2017). The observation triggered a Level 3 TARP because a previously reported fracture (first observed on 18/12/2013) is present in the sandstone forming the pool base. The water level returned to baseline levels during FY19. Pool water levels trended higher during the LW17 extraction period.</li> </ul> |

| Condition # | Details  | Compliance status | Relevant evidence   | Commentary   |
|-------------|--|-------------------|---|--|
|             |  |                   | <ul style="list-style-type: none"> <li>- LW 21 (Area 3C) (September 2021); and</li> <li>- LW 22 &amp; 23 (Area 3C) (September 2021).</li> <li>- WCWMS (Rev E, May 2021).</li> <li>- WMP (Rev 8.0, 4 August 2023).</li> <li>- EOP reports: <ul style="list-style-type: none"> <li>- LW 16 (Area 3B ) (March 2021);</li> <li>- LW 17 (Area 3B) (April 2022);</li> <li>- LW 18 (Area 3B) (October 2022); and</li> <li>- LW 19 (Area 3A) (July, 2023).</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- Sandy Creek and tributaries were assessed formally for the first time in the LW 19 EOP report due to mining moving back to Area 3A. TARP for surface water hydrology were triggered at Sandy Creek (SCL2/GS2122205) due to a minor change in cease to flow frequency beyond natural.</li> </ul> <p><b>Water quality</b></p> <p>Water quality monitoring is carried out surface water sampling sites on an approximately weekly or monthly basis and compared to the triggers in the WIMMCPs.</p> <p>In the Area 3C WIMMCP - exceedance of the water quality performance measures is defined as 'Mining results in two consecutive exceedances or three exceedances of the <math>\pm 3</math> standard deviation level (positive for EC, negative for pH and DO) from the baseline mean within six months'.</p> <p>The performance measure is applied at the FR6 monitoring sites on both Donalds Castle Creek and Wongawilli Creek.</p> <p>Transient increases in elevated EC and metals were recorded in Donalds Castle Creek – with levels declining to baseline following higher rainfall in 2020.</p> <p>At LA4_S1, which is located near Lake Avon on a minor tributary previously impacted by mining of LW12 to LW14, water quality TARPs continued to be triggered for DO, EC and pH during extraction of LW16 through to LW19 and were noted again in the FY23 Annual Review. Given the location – impact is minor and predate the audit period.</p> <p>The FY23 Annual Review notes concentrations of iron, manganese, zinc and sulphate ion were slightly above baseline in Sandy Creek (Rockbar 5). Review of <i>EOP Surface Water and Shallow Groundwater Assessment: Longwall 19 (Area 3A)</i> prepared by HGEO Pty Ltd in 2021 indicates the increase in dissolved metals is related to upstream inputs from tributary SC10C, which was affected by prior mining of LW 7 and 8.</p> <p><b>SMP Approval</b></p> <p>EOP reporting for LW17 indicates an exceedance or greater than 'negligible' impact due to rockfall at Waterfall 54 on Wongawilli Creek (i.e. 4.5 m<sup>3</sup> rockfall – Impact Site No. DA3B_LW17_041). Photographs detected the fall occurred between 6 October 2021 and 28 October 2021. No visual changes to water flow over the waterfall was detected, with Level 1 iron-staining impact noted in the EOP report for LW 18.</p> <p>It is noted that the corner of LW17 encroached within approximately 440 m from Waterfall 54 and valley closure movements were between 17 mm and 25 mm, which were within the predicted closure of less than 27 mm.</p> <p>The fall was not detected until 2 August 2022 and hard to see on photographic evidence. It is considered that as the LW did not cause closure greater than predicted, and the fall has not caused changes to the surface flow path, the impact is only 'minor' (but more than negligible).</p> <p>Therefore, a non-compliance (low risk) with the requirements of Condition 13 of the SMP Approval for LW 17 due to the requirement for 'negligible' impacts on Waterfall 54; however, there is no non-compliance with this condition as the impact was not greater than 'minor'.</p> <p>Corrective Management Actions (CMAs) completed for Waterfall 54 include:</p> <ul style="list-style-type: none"> <li>- impact report submitted to regulation authorities and site visit offered to advise on appropriate CMAs;</li> <li>- investigation into reasons for the exceedance completed by MSEC in 2022;</li> <li>- continuation of monitoring program and review frequency; and</li> <li>- reporting of impact in EOP report for LW 18.</li> </ul> <p>CMAs still proposed for Waterfall 54 include:</p> <ul style="list-style-type: none"> <li>- develop site CMA; and</li> <li>- provide offset if CMA unsuccessful.</li> </ul> |
|             | Note: In this condition, "minor impacts" are those defined as minor triggers in Table 23.2 of the draft SMP submitted by the Applicant for Dendrobium Area 3A. | Note              | N/A.  | N/A.   |



| Condition # | Details  | Compliance status | Relevant evidence  | Commentary  |
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| 3           | The Applicant must ensure the development does not result in reduction (other than negligible reduction) in the quality or quantity of surface water or groundwater inflows to Lake Cordeaux or Lake Avon or surface water inflow to the Cordeaux River at its confluence with Wongawilli Creek, to the satisfaction of the Secretary. | Compliant         | <ul style="list-style-type: none"> <li>- SMPs: <ul style="list-style-type: none"> <li>- LW 16 (Area 3B) (October 2017);</li> <li>- LW 17 (Area 3B) (March 2019);</li> <li>- LW 18 (Area 3B) (November 2020);</li> <li>- LW 19 (Area 3A) (March 2021);</li> <li>- LW 19A (Area 3A) (September 2022);</li> <li>- LW 20 &amp; 21 (Area C) (November 2019); and</li> <li>- LW 22 &amp; 23 (Area 3C) (September 2021).</li> </ul> </li> <li>- WIMMCPs: <ul style="list-style-type: none"> <li>- LW 16 (Area 3B) (March 2019);</li> <li>- LW 17 (Area 3B) (February 2020);</li> <li>- LW 18 (Area 3B) (August 2020);</li> <li>- LW 19 (Area 3A) (February 2021);</li> <li>- LW 19A (Area 3A) (September 2022);</li> <li>- LW 21 (Area 3C) (September 2021); and</li> <li>- LW 22 &amp; 23 (Area 3C) (September 2021).</li> </ul> </li> <li>- Annual Reviews for FY21, FY22, and FY23, including Subsidence Monitoring Program updates, provided as an Appendix to Annual Reviews.</li> <li>- Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>- WCWMS (Rev E, May 2021)</li> <li>- WMP (Rev 8.0, 4 August 2023)</li> <li>- EOP reports: <ul style="list-style-type: none"> <li>- LW 16 (Area 3B) (March 2021);</li> <li>- LW 17 (Area 3B) (April 2022);</li> <li>- LW 18 (Area 3B) (October 2022); and</li> <li>- LW 19 (Area 3A) (July, 2023).</li> </ul> </li> </ul> | <p><b>Water Quality</b></p> <p>Exceedance of the water quality performance measures is defined:</p> <ul style="list-style-type: none"> <li>- For Lake Cordeaux – in the Area 3C WIMMCP at monitoring site LC5_S1: <i>mining results in two consecutive exceedances or three exceedances of the ±3 standard deviation level (positive for EC, negative for pH and DO) from the baseline mean within six months.</i></li> <li>- For Avon Reservoir in the Area 3B WIMMCP monitoring site LA4: <i>mining resulting in exceedance of the ± 3 standard deviation level (positive for EC, negative for pH and DO) from the baseline mean, for a minimum of two consecutive monitoring events.</i></li> </ul> <p>While the EOP reports for LW 16 to 18 note iron staining and elevated Fe concentrations in some affected tributaries, the water quality monitoring at Lake Avon and Lake Cordeaux notes only occasional spikes in dissolved Fe, Mn, Al, Si during dry periods, and the performance measures for the minimal impact on quality of inflows to Lakes Cordeaux and Avon are met.</p> <p>No adverse changes to water quality have been detected to date in Lake Avon and Lake Cordeaux (HGeo, 2022 &amp; 2023).</p> <p><b>Lake inflows</b></p> <p>In 2019 the Independent Expert Scientific Committee (IESC) on Coal Seam Gas and Large Coal Mining Development requested the surface water flow TARPs include the complete post-mining period and not just LW by LW. Measured surface flows into Lake Avon were based on an agreed method in estimating flow losses and included gauged and ungauged sub-catchments.</p> <p>The assessment indicated total losses were 0.166 ML/d or 0.9% of median Lake Avon inflow (Q50), provided by WaterNSW between 2015 to 2020. The losses were assessed to be within prediction given in the approved LW 17 and 18 SMP Applications.</p> <p>The Q50 inflow loss to Lake Cordeaux was 0.19 ML/d or 1.3% between 2015 to April 2023. The losses were assessed to be within prediction given in the approved LW 19, and LW 22 &amp; 23 SMP Applications.</p> <p>The Q50 inflow to the Cordeaux River at its confluence with Wongawilli Creek was unchanged and satisfied the performance measure.</p> <p>The EOP reports for LW 16 to 18 all state that performance measures for the quantity of inflows to Lakes Cordeaux and Avon have been complied with.</p> <p><b>Lake storage losses due to groundwater leakage</b></p> <p>There is no observational data for making reliable estimates of reservoir losses between the lake and groundwater.</p> <p>The <i>WaterNSW Asset Protection Plan (APP) for Longwalls 19A, 22 and 23</i> (August 2023), granting conditional approval by WaterNSW on 22 August 2023, states that Dams Safety NSW imposes a 'Tolerable Loss of Dam Water' of no more than 1 ML/day long-term and 2 ML/day short-term for the Cordeaux Reservoir and a sustained loss of 1 ML/day for Avon Reservoir (Dams Safety Committee, 2014).</p> <p>Lake storage losses cannot be measured directly, so they have been estimated with groundwater models that have been calibrated to measured borehole vibrating wire piezometer and horizontal permeability data for pre and post LW mining effects.</p> <p>The <i>WaterNSW Asset Protection Plan (APP) for Longwalls 19A, 22 and 23</i> outlines the results of peer-reviewed groundwater modelling, which estimates (mean) total leakage from storages, and estimates of surface water losses from streams.</p> <p>Piezometric data at Dendrobium indicates water table drawn-down effects in Hawkesbury Sandstone extend for up to 1.2 km from the three LW extraction areas with horizontal rock mass permeability increasing by 0.1 to 1.5 orders of magnitude up to 300 m from LW goaf (measured post-mining hydraulic conductivity, <math>k_h \sim 0.06</math> m/d). IMC also conducted a detailed hydrogeological drilling investigation across the Elouera fault between Lake Avon and LW18. It was concluded that the fault was unlikely to form a conduit to flow and was confirmed by the absence of anomalous drawdown effects (see below).</p> |

| Condition # | Details  | Compliance status   | Relevant evidence  | Commentary   |
|-------------|--|---------------------|--|--|
|             |  |                     |  | <p>The latest estimated daily water loss estimates from Lake Avon after Area 3B LWs 12-18 range from 0.15 to 0.89 ML/day and are below the approved 'negligible' limit of 1 ML/day. The estimate is supported by low levels of 'new' water (with tritium and 14C) in mine inflow water (HGEO, 2022).</p> <p>Estimated daily water loss estimates from Lake Cordeaux after Areas 1/2/3A/B LWs 1-18 of 0.04 to 0.1 ML/day is also below the approved 'negligible' limit of 1 ML/day (SLR, 2020).</p>   |
| 4           | <p>Prior to carrying out any underground mining operations that could cause subsidence in either Area 3A, Area 3B or Area 3C, the Applicant must prepare a Watercourse Impact Monitoring, Management and Contingency Plan to the satisfaction of the Secretary. Each such Plan must:</p> <p>(a) demonstrate how the subsidence impact limits in conditions 1 - 3 are to be met;</p> <p>(b) include a monitoring program and reporting mechanisms to enable close and ongoing review by the Department and Resources Regulator of the subsidence effects and impacts (individual and cumulative) on Wongawilli Creek, Sandy Creek and Sandy Creek Waterfall;</p> <p>(c) include a general monitoring and reporting program addressing surface water levels, water flows, water quality, surface slope and gradient, erodibility, aquatic flora and fauna (including Macquarie Perch, any other threatened aquatic species and their habitats) and ecosystem function;</p> <p>(d) include a management plan for avoiding, minimising, mitigating and remediating impacts on watercourses, which includes a tabular contingency plan (based on the Trigger Action Response Plan structure) focusing on measures for remediating both predicted and unpredicted impacts;</p> <p>(e) address third and higher order streams individually but address first and second order streams collectively;</p> <p>(f) be prepared in consultation with BCS, WaterNSW and Resources Regulator;</p> <p>(g) incorporate means of updating the plan based on experience gained as mining progresses;</p> <p>(h) be approved prior to the carrying out of any underground mining operations that could cause subsidence impacts on watercourses in the relevant Area; and</p> <p>(i) be implemented to the satisfaction of the Secretary.</p> | Compliant           | <ul style="list-style-type: none"> <li>- WIMMCPs: <ul style="list-style-type: none"> <li>- LW 19 (Area 3A) (February 2021);</li> <li>- LW 19A (Area 3A) (September 2022);</li> <li>- LW 21 (Area 3C) (September 2021); and</li> <li>- LW 22 &amp; 23 (Area 3C) (September 2021).</li> </ul> </li> <li>- Site interviews completed 9, 10 and 11 October 2023.</li> <li>- EOP reports: <ul style="list-style-type: none"> <li>- LW 16 (Area 3B) (March 2021);</li> <li>- LW 17 (Area 3B) (April 2022);</li> <li>- LW 18 (Area 3B) (October 2022); and</li> <li>- LW 19 (Area 3A) (July, 2023).</li> </ul> </li> <li>- Annual Reviews for FY21, FY22, and FY23, including Subsidence Monitoring Program updates, provided as an Appendix to Annual Reviews.</li> <li>- Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> </ul> | <p>LW mining was completed during the audit period as follows:</p> <ul style="list-style-type: none"> <li>- EOP reporting for LW 16 (Area 3B), which was mined during the 2020 IEA period (i.e. 26 October 2020 to 4 November 2020);</li> <li>- LW 17 (Area 3B), mined between 12 December 2020 to 13 October 2021;</li> <li>- LW18 (Area 3B): mined between 2 December 2021 to 17 May 2022;</li> <li>- LW 19 (Area 3A): mined between 20 June 2022 to 29 March 2023; and</li> <li>- LW 21 (Area 3C): mined between 25 April 2023 to 7 August 2023.</li> </ul> <p>Monitoring and management plans prepared in consultation with BCS, Water NSW and Resources Regulator and approved by Secretary before LWs commenced.</p> <p>Details of impact and environmental consequence monitoring results assessed against TARPS and Performance Measures by either IMC or Specialist Consultants in EOP reports for LW 16 to 19.</p> <p>The management plans have been written and implemented in accordance with the consent conditions, with no major findings from the audit pointing to any need to revise these plans as they related to Schedule 2, Condition 4.</p> |
|             | <p>Notes:</p> <ul style="list-style-type: none"> <li>- Should review by the Department of reports by the Applicant under paragraph (b) indicate that subsidence impacts have exceeded or threaten to limits imposed in conditions 1-3, then under condition 4 of Schedule 2 the Secretary may instruct the Applicant to implement reasonable and feasible requirements, which may include to cease mining within the operative longwall, shorten the length of that longwall or shorten the length and/or width of future longwalls.</li> <li>- Requirements under paragraphs (a) and (b) in respect of Sandy Creek and Sandy Creek Waterfall relate only to the Watercourse Impact Monitoring, Management and Contingency Plan for Area 3A.</li> </ul>  | Note                | N/A.   | N/A.   |
|             | <b>Swamp Impact Management</b>   |                     |  |  |
| 5           | The Applicant must ensure that subsidence does not cause erosion of the surface or changes in ecosystem functionality of Swamp 15a and that the structural integrity of its controlling rockbar is maintained or restored, to the satisfaction of the Secretary.   | Non-compliant (Low) | <ul style="list-style-type: none"> <li>- SIMMCPs: <ul style="list-style-type: none"> <li>- LW 16 (Area 3B) (March 2019);</li> <li>- LW 17 (Area 3B) (February 2020);</li> <li>- LW 18 (Area 3B) (August 2020);</li> <li>- LW 19 (Area 3A) (February 2021);</li> </ul> </li> </ul>  | <p>As discussed in Schedule 3, Condition 6, review of the SIMMCP for LW 19 (Area A) indicates performance measures for Swamp 15a (as detailed in Table 6-1 of the SIMMCP), are inconsistent with the requirements of Condition 8 of the SMP Approval for LW 19 as follows:</p> <ul style="list-style-type: none"> <li>- 'minor' change in the size of the swamps, with the performance measure in the SMP Approval for LW 19 being 'negligible';</li> <li>- 'minor' change in the ecosystem functionality of the swamps, with the performance measure in the SMP Approval for LW 19 being 'negligible'; and</li> </ul>   |

| Condition # | Details | Compliance status | Relevant evidence  | Commentary   |
|-------------|---------|-------------------|--|--|
|             |         |                   | <ul style="list-style-type: none"> <li>- LW 19A (Area 3A) (September 2022);</li> <li>- LW 21 (Area 3C) (September 2021); and</li> <li>- LW 21 (Area 3C) (September 2021).</li> <li>- Site interviews completed 9, 10 and 11 October 2023.</li> <li>- EOP reports: <ul style="list-style-type: none"> <li>- LW 16 (Area 3B ) (March 2021);</li> <li>- LW 17 (Area 3B) (April 2022);</li> <li>- LW 18 (Area 3B) (October 2022); and</li> <li>- LW 19 (Area 3A) (July, 2023).</li> </ul> </li> <li>- Annual Reviews for FY21, FY22, and FY23, including Subsidence Monitoring Program updates, provided as an Appendix to Annual Reviews.</li> <li>- Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> </ul> | <ul style="list-style-type: none"> <li>- 'no significant change' to the composition or distribution of species within the swamps, with the performance measure in the SMP Approval for LW 19 being 'negligible'.</li> </ul> <p>Negligible is defined in the SMP Approval for LW 19 as <i>'Small and unimportant, such as to be not worth considering'</i>, while Schedule 3, Condition 5 requires that subsidence <i>'does not cause erosion of the surface or changes in ecosystem functionality at Swamp 15a'</i>.</p> <p>The incorrect documentation of performance measures in the SIMMCP for LW 19 and in EOP reporting for LW 19 has the potential for impacts on Swamp 15a due to mining to go unreported.</p> <p>While the report <i>'Ecological data review: Swamp 15A Stage 2 technical memo'</i> (Niche, 2023) found <i>'overall TSR is primarily being influenced by catchment-scale factors rather than factors at the swamp scale'</i>, given that the shallow groundwater and soil moisture TARPs have been triggered at Swamp 15a, it is considered plausible there may be potentially unreported impacts on ecosystem functionality due to mining activities at Swamp 15a. Furthermore, Attachment H of the LW 19 EOP Report concludes: <i>'Impacts to swamp communities are apparent in the post-mining period. This is anticipated based upon the proximity of these swamps to the longwalls...'</i></p> <p>The incorrect documentation of these performance measures as 'minor' and 'no significant change', instead of 'negligible' (per the SMP Approval for LW 19) and <i>'does not cause erosion of the surface or changes in ecosystem functionality at Swamp 15a'</i> (per Schedule 3, Condition 5), has resulted in development and implementation (i.e. triggering) of TARPs for LW 19 that are not adequately considering compliance with Schedule 3, Condition 5 and Condition 8 of the SMP Approval for LW 19. Given this discrepancy, there is potential for unreported impacts on Swamp 15a.</p> <p>Therefore, a non-compliance (low risk) has been identified in relation to adequate detection of change in ecosystem functionality of Swamp 15a due to mining at LW 19, potentially resulting in:</p> <ul style="list-style-type: none"> <li>- moderate environmental consequences, considered unlikely to occur; or</li> <li>- low environmental consequences, considered likely to occur.</li> </ul> <p>It was noted during the interview process that IMC are undertaking a study into the coincidence/causality of vegetation change (ecosystem function) and groundwater change at Swamp 15a. Therefore, <b>CA01</b> has been identified in relation to undertaking this study. In addition, <b>OFI01</b> has also been identified.</p> <p><b>Corrective action (CA01):</b> <i>Undertake an independent review of the study into the coincidence/causality of vegetation change (ecosystem functionality) and groundwater change at Swamp 15a. The study is to be completed by a suitably qualified expert in coastal upland swamps approved by DPE.</i></p> <p><i>Given rehabilitation of upland swamps has been deemed impractical, if the findings of the study and/or review conclude the causes are likely to be related to mining activities, consider the need for additional strategic offsets for upland swamps in consultation with BCS to ideally be located within the impacted catchment or Metropolitan Special Areas (if required).</i></p> <p>In addition, Section 1.4.1 of Attachment H of the EOP report for LW 19 states:<br/><i>The Dendrobium Area 3A Impact Upland Swamps monitored as a part of the Program include Swamp 15a(1), Swamp 15a(2) and Swamp 15B (Figure 1, Table 1 and Table 9). All three swamps are also included in the LiDAR monitoring.</i></p> <p>However, review of Table 44 of the EOP report for LW 19 lists the LiDAR TARPs as not applicable and notes:<br/><i>The TARPs for Dendrobium Area 3A do not include an assessment of LiDAR.</i></p> <p>As such, it seems that LiDAR has been undertaken for Swamp 15a; however, the TARPs do not use LiDAR analysis as a TARP trigger. Therefore, <b>OFI01</b> has been made.</p> <p><b>OFI01:</b> <i>Ensure future monitoring reports include LiDAR analysis for relevant swamps, consistent with recent updates to Area 3A TARPs.</i></p> |

| Condition # | Details   | Compliance status              | Relevant evidence  | Commentary   |
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| 6           | <p>Prior to carrying out any underground mining operations that could cause subsidence in either Area 3A, Area 3B or Area 3C, the Applicant must prepare a Swamp Impact Monitoring, Management and Contingency Plan to the satisfaction of the Secretary. Each such Plan must:</p> <p>(a) demonstrate how the subsidence impact limits in condition 5 are to be met;</p> <p>(b) include a monitoring program and reporting mechanisms to enable close and ongoing review by the Department and Resources Regulator of the subsidence effects and impacts (individual and cumulative) of each Area 3A longwall on Swamp 15a;</p> <p>(c) include a general monitoring and reporting program addressing surface water levels, near surface groundwater levels, water quality, surface slope and gradient, erodibility, flora and ecosystem function;</p> <p>(d) include a management plan for avoiding, minimising, mitigating and remediating impacts on swamps, which includes a tabular contingency plan (based on the Trigger Action Response Plan structure) focusing on measures for remediating both predicted and unpredicted impacts;</p> <p>(e) address headwater and valley infill swamps separately and address each swamp individually;</p> <p>(f) be prepared in consultation with BCS, WaterNSW and Resources Regulator;</p> <p>(g) incorporate means of updating the plan based on experience gained as mining progresses;</p> <p>(h) be approved prior to the carrying out of any underground mining operations that could cause subsidence impacts on swamps in the relevant Area; and</p> <p>(i) be implemented to the satisfaction of the Secretary.</p> | Non-compliant (Administrative) | <ul style="list-style-type: none"> <li>- Site interviews completed 9, 10 and 11 October 2023.</li> <li>- SIMMCPs: <ul style="list-style-type: none"> <li>- LW 19 (Area 3A) (February 2021);</li> <li>- LW 19A (Area 3A) (September 2022);</li> <li>- LW 21 (Area 3C) (September 2021); and</li> <li>- LW 21 (Area 3C) (September 2021).</li> </ul> </li> <li>- EOP reports: <ul style="list-style-type: none"> <li>- LW 16 (Area 3B ) (March 2021);</li> <li>- LW 17 (Area 3B) (April 2022);</li> <li>- LW 18 (Area 3B) (October 2022); and</li> <li>- LW 19 (Area 3A) (July, 2023).</li> </ul> </li> <li>- Annual Reviews for FY21, FY22, and FY23, including Subsidence Monitoring Program updates, provided as an Appendix to Annual Reviews.</li> <li>- Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> </ul> | <p>Annual Reviews state:<br/> <i>'The Swamp Impact Monitoring, Management and Contingency Plan has been incorporated into the Area 3A and 3B SMP s. The Swamp Impact Monitoring, Management and Contingency Plan and the Watercourse Impact Monitoring, Management and Contingency Plan documents were revised to take into account the SMP Approval Conditions and submissions from regulatory agencies.'</i></p> <p>The SIMMCPs for all Areas (3A, 3B and 3C) in conjunction with the EOP reports provide sections focussing on swamp impacts and the impact of mining induced subsidence on surface and ground water flow. Swamp health is also measured and reported against species composition, total species richness, swamp extents (area), soil moisture and shallow groundwater triggers.</p> <p>Individual swamps are identified within both impact and reference site locations. Adjacent pool water levels and associated streams are monitored for flow conditions. Baseline conditions are assessed prior to mining.</p> <p>Individual SIMMCP's have been developed/revised following review of monitoring data and EOP reporting.</p> <p>Conditions 6(a) and 6(b) are addressed in the SIMMCP for LW 19 (February 2021). LW 19 is the only Area 3A LW mined during the audit period.</p> <p>Review of the SIMMCP for LW 19 (Area A) indicates performance measures for Swamp 15a, detailed in Table 6-1 of the SIMMCP are inconsistent with the requirements of the SMP Approval for LW 19 as follows:</p> <ul style="list-style-type: none"> <li>- 'minor' changes in the size of the swamps, with the performance measure in the SMP Approval for LW 19 being 'negligible';</li> <li>- 'minor' changes in the ecosystem functionality of the swamps, with the performance measure in the SMP Approval for LW 19 being 'negligible'; and</li> <li>- 'no significant change' to the composition or distribution of species within the swamps, with the performance measure in the SMP Approval for LW 19 being 'negligible'.</li> </ul> <p>An ANC has been found with this condition due to Schedule 3, Condition 6(b) requiring the monitoring program and reporting mechanisms to enable close and ongoing review by DPE and the NSW Resources Regulator of the subsidence effects and impacts (individual and cumulative) of each Area 3A longwall on Swamp 15a. The adopting of incorrect performance measures for the SIMMCP for LW 19 did not achieve this requirement.</p> <p>As mining and EOP reporting has been completed for LW 19 and review of the SIMMCP for LW 19A indicates performance measures have been documented correctly, no recommendation is deemed relevant.</p> |
|             | <p>Notes:</p> <ul style="list-style-type: none"> <li>- Should review by the Department of reports by the Applicant under paragraph (b) indicate that subsidence impacts have exceeded or threaten to exceed limits imposed in condition 5, then under condition 4 of Schedule 2 the Secretary may instruct the Applicant to implement reasonable and feasible requirements, which may include to cease mining within the operative longwall, shorten the length of that longwall or shorten the length and/or width of future longwalls.</li> <li>- Requirements under paragraphs (a) and (b) relate only to the Swamp Impact Monitoring, management and Contingency Plan for Area 3A.</li> </ul>   | Note                           | N/A.   | N/A.   |

| Condition # | Details  | Compliance status | Relevant evidence  | Commentary   |
|-------------|--|-------------------|--|--|
|             | <b>Subsidence Management Plans</b>   |                   |  |  |
| 7           | <p>Prior to carrying out any underground mining operations that could cause subsidence in either Area 3A, 3B or 3C, the Applicant must prepare a Subsidence Management Plan (SMP) to the satisfaction of the Secretary and the Resources Regulator. Each such SMP must:</p> <p>(a) integrate ongoing management of Areas 1 and 2;</p> <p>(b) integrate the Watercourse and Swamp Impact Monitoring, Management and Contingency Plans required under conditions 4 and 6;</p> <p>(c) include monitoring of subsidence effects;</p> <p>(d) include a WaterNSW Assets Protection Plan;</p> <p>(e) include monitoring, management, and contingency plans for all other significant natural features and all significant man made features which may be impacted by subsidence, including:</p> <ul style="list-style-type: none"> <li>– landscape (including cliffs and steep slopes);</li> <li>– groundwater (see condition 13);</li> <li>– terrestrial flora and fauna and ecology (including all threatened species assessed as being likely to be significantly affected by the development and their habitats);</li> <li>– Aboriginal and other cultural heritage (see condition 12); and</li> <li>– electrical, communications and other infrastructure;</li> </ul> <p>(f) be prepared in consultation with BCS, WaterNSW and Resources Regulator;</p> <p>(g) be approved prior to the carrying out of any underground mining operations that could cause subsidence in the relevant Area; and</p> <p>(h) be implemented to the satisfaction of the Secretary and the Resources Regulator.</p> | Compliant         | <ul style="list-style-type: none"> <li>– SMPs: <ul style="list-style-type: none"> <li>– LW 18 (Area 3B) (November 2020);</li> <li>– LW 19 (Area 3A) (March 2021);</li> <li>– LW 19A (Area 3A) (September 2022); and</li> <li>– LW 22 &amp; 23 (Area 3C) (September 2021).</li> </ul> </li> <li>– WIMMCPs: <ul style="list-style-type: none"> <li>– LW 19 (Area 3A) (February 2021);</li> <li>– LW 19A (Area 3A) (September 2022);</li> <li>– LW 21 (Area 3C) (September 2021); and</li> <li>– LW 22 &amp; 23 (Area 3C) (September 2021).</li> </ul> </li> <li>– SIMMCPs: <ul style="list-style-type: none"> <li>– LW 19 (Area 3A) (February 2021);</li> <li>– LW 19A (Area 3A) (September 2022);</li> <li>– LW 21 (Area 3C) (September 2021); and</li> <li>– LW 21 (Area 3C) (September 2021).</li> </ul> </li> <li>– EOP reports: <ul style="list-style-type: none"> <li>– LW 16 (Area 3B) (March 2021);</li> <li>– LW 17 (Area 3B) (April 2022);</li> <li>– LW 18 (Area 3B) (October 2022); and</li> <li>– LW 19 (Area 3A) (July, 2023).</li> </ul> </li> <li>– Annual Reviews for FY21, FY22, and FY23, including Subsidence Monitoring Program updates, provided as an Appendix to Annual Reviews.</li> <li>– Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>– Site interviews completed 9, 10 and 11 October 2023.</li> </ul> | <p><b>2020 IEA Recommendation:</b><br/>R04: Update online document portal with SMP for LW 14 – 15, currently not available.</p> <p><b>2023 IEA Findings:</b><br/><u>Status of 2020 IEA Recommendation:</u><br/>Review of the Dendrobium website indicates this recommendation has been closed out.</p> <p><u>2023 IEA Findings</u><br/>SMPs/WIMMCPs/SIMMCPs for each mining area were approved prior to LW extraction commencing.</p> <p>Monitoring and reporting of subsidence impacts on the relevant built and natural features is provided in the End of Panel Reports and summarised in Annual Reviews.</p> <p>The TARPs triggered during the extraction of each LW and CMAs are described together with consultation outcomes between IMC and stakeholders.</p> <p>The grout rehabilitation works plan for restoring low flows and pools along WC21 commenced in 2021.</p> <p>SMPs available on South32 website.</p> |
|             | <p>Notes:</p> <ul style="list-style-type: none"> <li>– The WaterNSW Assets Protection Plan required under this condition must also be prepared and implemented to the satisfaction of the WaterNSW.</li> <li>– The contingency plans required under paragraph (e) must address remediation (as appropriate) and be based on a TARP structure.</li> </ul>   | Note              | N/A.   | N/A.   |

| Condition # | Details  | Compliance status              | Relevant evidence   | Commentary  |
|-------------|--|--------------------------------|---|---|
| 8           | <p>The SMPs prepared under condition 7 for Areas 3B and 3C must:</p> <p>(a) include a mine plan for the relevant Area;</p> <p>(b) include a detailed subsidence impact assessment, clearly setting out all predicted subsidence effects, subsidence impacts and environmental consequences;</p> <p>(c) include a minimum of 2 years of baseline data, collected at appropriate frequency and scale, for all significant natural features;</p> <p>(d) identify and assess the significance of all natural features located within 600 m of the edge of secondary extraction;</p> <p>(e) distinguish between, clearly describe and adequately quantify all subsidence effects, subsidence impacts and environmental consequences;</p> <p>(f) propose limits on subsidence impacts and environmental consequences to be applied within the relevant Area;</p> <p>(g) be otherwise prepared in accordance with any guidelines for SMPs developed by the Department and/or Resources Regulator;</p> <p>(h) be approved prior to the carrying out of any underground mining operations that could cause subsidence in the relevant Area; and</p> <p>(i) be implemented to the satisfaction of the Secretary and the Resources Regulator.</p> | Compliant                      | <ul style="list-style-type: none"> <li>- SMPs: <ul style="list-style-type: none"> <li>- LW 18 (Area 3B) (November 2020);</li> <li>- LW 19 (Area 3A) (March 2021);</li> <li>- LW 19A (Area 3A) (September 2022); and</li> <li>- LW 22 &amp; 23 (Area 3C) (September 2021).</li> </ul> </li> <li>- Annual Reviews for FY21, FY22, and FY23, including Subsidence Monitoring Program updates, provided as an Appendix to Annual Reviews.</li> <li>- Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>- Site interviews completed 9, 10 and 11 October 2023.</li> </ul> | <p>Mine plans and subsidence impact assessments for relevant surface and subsurface features are provided in SMP/WIMMCP/SIMMCP Reports, together with TARPs for assessing against performance measures.</p> <p>Conditions imposed on SMP Approvals are addressed in updated management plans and described in End of Panel Reports, together with specialist consultant reviews of impacts, TARPs and PMs.</p>  |
|             | <i>Note: In approving an SMP, the Secretary may impose conditions containing subsidence impact limits (similar to conditions 1- 3 &amp; 5), subsidence management mechanisms (similar to conditions 4 &amp; 6) or other conditions.</i>  | Note                           | N/A.  | N/A.  |
|             | <b>End of Panel Reporting</b>  |                                |   |   |
| 9           | <p>Within 4 months of the completion of each longwall panel, or as otherwise permitted by the Secretary, the Applicant must:</p> <p>(a) prepare an end-of-panel report:</p> <ul style="list-style-type: none"> <li>- reporting all subsidence effects (both individual and cumulative) for the panel and comparing subsidence effects with predictions;</li> <li>- describing in detail all subsidence impacts (both individual and cumulative) for the panel;</li> <li>- discussing the environmental consequences for watercourses, swamps, water yield, water quality, aquatic ecology, terrestrial ecology, groundwater, cliffs and steep slopes; and</li> <li>- comparing subsidence impacts and environmental consequences with predictions; and</li> </ul> <p>(b) submit the report to the Department, Resources Regulator, WaterNSW, BCS, DPE Water and any other relevant agency to the satisfaction of the Secretary.</p>  | Non-compliant (Administrative) | <ul style="list-style-type: none"> <li>- EOP reports: <ul style="list-style-type: none"> <li>- LW 16 (Area 3B ) (March 2021);</li> <li>- LW 17 (Area 3B) (April 2022);</li> <li>- LW 18 (Area 3B) (October 2022); and</li> <li>- LW 19 (Area 3A) (July, 2023).</li> </ul> </li> </ul>   | EOP reporting has been submitted in accordance with the timing of this condition and includes all reporting requirements. However, an ANC has been identified in relation to the issues discussed in Schedule 3, Conditions 5 and 6.  |
| 10          | <p>The Applicant must include a comprehensive summary, analysis and discussion of the results of monitoring of subsidence effects, subsidence impacts and environmental consequences in each Annual Review.</p>  | Compliant                      | Annual Reviews for FY21, FY22, and FY23, including Subsidence Monitoring Program updates, provided as an Appendix to Annual Reviews.  | <p>Comprehensive summary, analysis and discussion of subsidence effects, subsidence impacts and environmental consequences included in each Annual Review.</p> <p>Subsidence impacts and environmental consequences are summarised with TARP Level in a Table attachment at the end of each Annual review. Details of impact assessments are provided in EOP reports with specialist consultant reports attached.</p> <p>All relevant information is included; however, there is a lack of depth and quantitative summary for some sections (e.g. Section 6.6 Weeds lacks any quantitative reporting, making review of environmental consequences difficult). Therefore, <b>OF102</b> has been identified.</p> <p><b>OF102: Ensure additional detail and quantitative analysis is provided in Section 6.6 (Weeds) of each Annual Review, including:</b></p> <ul style="list-style-type: none"> <li>- weed management activities;</li> <li>- success of weed control (i.e. % cover);</li> <li>- whether desired outcomes are being achieved;</li> <li>- whether weed criteria are being met; and</li> <li>- whether the weed control program has been: <ul style="list-style-type: none"> <li>- adequately implemented; and</li> <li>- reviewed as required by the RMP.</li> </ul> </li> <li>- weed management activities planned in next Annual Review period.</li> </ul> |

| Condition # | Details   | Compliance status | Relevant evidence   | Commentary   |
|-------------|---|-------------------|---|--|
|             | <i>Note: Conditions 9 and 10 apply to Area 2, as well as to Areas 3A, 3B and 3C.</i>  | <i>Note</i>       | <i>N/A.</i>   | <i>N/A.</i>  |
| 11          | The Applicant must pay the reasonable costs of the Department in engaging independent experts to advise it when it assesses SMPs prepared under condition 7 for Areas 3B and 3C.  | Not triggered     | Site interviews completed 9, 10 and 11 October 2023.  | Conduct of interviews and review of relevant documentation indicates this condition has not been triggered during the audit period.  |
|             | <b>ABORIGINAL HERITAGE</b>  |                   |   |  |
| 12          | <p>The SMPs prepared under condition 7 must include an Aboriginal Heritage Plan, which must include a:</p> <p>(a) description of known Aboriginal heritage sites;</p> <p>(b) protocol for the ongoing consultation and involvement of the Aboriginal community in the conservation and management of Aboriginal heritage;</p> <p>(c) description of the measures that would be implemented to protect Aboriginal sites generally, including measures that would be implemented to secure, analyse and record sites at risk of subsidence;</p> <p>(d) description of the measures that would be implemented to protect Aboriginal site 52-2-1646, including:</p> <ul style="list-style-type: none"> <li>– a full recording and assessment of the site’s rock art;</li> <li>– a more detailed subsidence assessment for the site;</li> <li>– measures which seek to avoid any significant impact on the site and any necessary contingency plans to protect the site against collapse or substantial impact on its rock art; and</li> </ul> <p>(e) description of the measures that would be implemented if any new Aboriginal objects or skeletal remains are discovered during the development.</p> | Compliant         | <ul style="list-style-type: none"> <li>– Area 3A: Aboriginal Cultural Heritage Management Plan (ACHMP) (Biosis, 2009).</li> <li>– Dendrobium Area 3B SMP (PDM-001-9.6.1D, Rev. B).</li> <li>– Area 3B: Aboriginal Cultural Heritage Management Plan (ACHMP) Dendrobium Colliery LW 18 (Niche, 9 February 2021, Rev. F1).</li> <li>– ACHMP Dendrobium Colliery Area 3C LWs 21, 22 and 23 (Niche, 10 November 21, Rev. F2).</li> </ul>  | <p>Review of relevant documentation verifies compliance with the requirements of this condition, with the following plans relevant to the audit period including:</p> <ul style="list-style-type: none"> <li>– 2020/2021: included <i>Dendrobium Area 3B SMP</i> (PDM-001-9.6.1D, Rev. B) for Area 3B mining at LW 17.</li> <li>– FY22: including: <ul style="list-style-type: none"> <li>– Area 3A: <i>ACHMP</i> (Biosis, 2009) for Area 3A mining at LW 19; and</li> <li>– Area 3B: <i>ACHMP Dendrobium Colliery LW 18</i> (Niche, 9/02/21, Rev. F1) and <i>Dendrobium Area 3B SMP</i> (PDM-001-9.6.1D, Rev. B) for Area 3B mining at LW 17 and LW 18.</li> </ul> </li> <li>– FY23: including mining in: <ul style="list-style-type: none"> <li>– Area 3A: <i>ACHMP</i> (Biosis, 2009) for Area 3A mining at LW 19; and</li> <li>– being <i>ACHMP Dendrobium Colliery Area 3C LWs 21, 22 and 23</i> (Niche, 10/11/21, Rev. F2) for Area 3C mining at LW 21.</li> </ul> </li> </ul> <p>Thirteen Cultural Heritage sites have been identified and recorded in SMPs. They include rock shelters with or without Art and Deposits, grinding grooves and Isolated Artefacts.</p> <p>Estimates of subsidence effects and potential impacts were provided for each site in SMPs.</p> <p>Site 52-2-1646 is a Rock Shelter with Art (High Cultural Significance) located within RMZ of LW6 &amp; 19 (Area 3A). No impacts have been recorded after LW mining (Niche 2023).</p> <p>Site DM21 (Rock Shelter with Art &amp; Deposit Site) was impacted (diagonal &amp; vertical cracking through north of shelter but away from Art) after LW15 with no further impacts after LW16 noted. The shelter was permitted to be impacted under Section 90 of NPW Act 1974.</p> |
|             | <b>GROUNDWATER MONITORING PROGRAM</b>   |                   |   |  |
| 13          | <p>The SMPs prepared under condition 7 must include a Groundwater Monitoring Program, which must include:</p> <p>(a) proposals to develop a detailed regional and local groundwater model, with special reference to flows to and from nearby water storages;</p> <p>(b) detailed baseline data to benchmark the natural variation in groundwater levels, yield and quality;</p> <p>(c) groundwater impact assessment criteria;</p> <p>(d) a program to monitor the impact of the development on:</p> <ul style="list-style-type: none"> <li>– groundwater levels, yield and quality (particularly any potential loss of flow to, or flow from, WaterNSW water storages);</li> <li>– coal seam aquifers and overlying aquifers; and</li> <li>– groundwater springs and seeps; and</li> </ul> <p>(e) consideration of the requirements of the latest version (or subsequent replacement) of WaterNSW’ <i>The Design of a Hydrological and Hydrogeological Monitoring Program to Access the Impacts of Longwall Mining in SCA Catchment.</i></p>  | Compliant         | <ul style="list-style-type: none"> <li>– Site interviews completed 9, 10 and 11 October 2023.</li> <li>– SMPs: <ul style="list-style-type: none"> <li>– LW 18 (Area 3B) (November 2020);</li> <li>– LW 19 (Area 3A) (March 2021);</li> <li>– LW 19A (Area 3A) (September 2022); and</li> <li>– LW 22 &amp; 23 (Area 3C) (September 2021).</li> </ul> </li> <li>– EOP reports: <ul style="list-style-type: none"> <li>– LW 16 (Area 3B ) (March 2021);</li> <li>– LW 17 (Area 3B) (April 2022);</li> <li>– LW 18 (Area 3B) (October 2022); and</li> <li>– LW 19 (Area 3A) (July, 2023).</li> </ul> </li> </ul> | <p>Subsurface fracture height models, horizontal and vertical permeability enhancement estimates and borehole VWP data have been reviewed against mine inflows and rainfall data for audit period. Calibrated groundwater flow models conservatively predict water table draw down v. measured.</p> <p>Research including height of fracture zone measurements above LW9 and potential seepage rates from Lake Avon, including the influence of the Elouera Fault have been completed by HGEO &amp; Parsons Brinkerhoff (now WSP) in Area 3B. Independent review of height of Depressurisation estimates were prepared for DPI by Hebblewhite, B. and for WaterNSW by IEPM.</p>  |

| Condition #                      | Details  | Compliance status                  | Relevant evidence  | Commentary  |                         |   |    |    |    |    |    |    |    |    |    |     |    |    |    |    |                  |    |    |    |    |                     |    |    |    |    |      |                     |  |  |
|----------------------------------|--|------------------------------------|--|---|-------------------------|---|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|------------------|----|----|----|----|---------------------|----|----|----|----|------|---------------------|--|--|
|                                  | <b>ENVIRONMENTAL OFFSETS</b>   |                                    |  |   |                         |   |    |    |    |    |    |    |    |    |    |     |    |    |    |    |                  |    |    |    |    |                     |    |    |    |    |      |                     |  |  |
| 14                               | <p>The Applicant must provide suitable offsets for loss of water quality or loss of water flows to WaterNSW storages, clearing and other ground disturbance (including cliff falls) caused by its mining operations and/or surface activities within the mining area, unless otherwise addressed by the conditions of this consent, to the satisfaction of the Secretary. These offsets must:</p> <p>(a) be submitted to the Secretary for approval by 30 April 2009;</p> <p>(b) be prepared in consultation with WaterNSW;</p> <p>(c) provide measures that result in a beneficial effect on water quality, water quantity, aquatic ecosystems and/or ecological integrity of WaterNSW's special areas or water catchments.</p>   | Not triggered                      | <ul style="list-style-type: none"> <li>EOP reports: <ul style="list-style-type: none"> <li>LW 16 (Area 3B) (March 2021);</li> <li>LW 17 (Area 3B) (April 2022);</li> <li>LW 18 (Area 3B) (October 2022); and</li> <li>LW 19 (Area 3A) (July, 2023).</li> </ul> </li> <li>Annual Reviews for FY21, FY22, and FY23, including Subsidence Monitoring Program updates, provided as an Appendix to Annual Reviews.</li> </ul> | A parcel of land was provided to WaterNSW in 2009 and no change to this has occurred during the audit period. |                         |   |    |    |    |    |    |    |    |    |    |     |    |    |    |    |                  |    |    |    |    |                     |    |    |    |    |      |                     |  |  |
|                                  | <b>SCHEDULE 4 - SPECIFIC ENVIRONMENTAL CONDITIONS</b>  |                                    |  |   |                         |   |    |    |    |    |    |    |    |    |    |     |    |    |    |    |                  |    |    |    |    |                     |    |    |    |    |      |                     |  |  |
|                                  | <b>SURFACE FACILITIES</b>  |                                    |  |   |                         |   |    |    |    |    |    |    |    |    |    |     |    |    |    |    |                  |    |    |    |    |                     |    |    |    |    |      |                     |  |  |
|                                  | <b>NOISE</b>   |                                    |  |   |                         |   |    |    |    |    |    |    |    |    |    |     |    |    |    |    |                  |    |    |    |    |                     |    |    |    |    |      |                     |  |  |
|                                  | <b>Noise Impact Assessment Criteria</b>  |                                    |  |   |                         |   |    |    |    |    |    |    |    |    |    |     |    |    |    |    |                  |    |    |    |    |                     |    |    |    |    |      |                     |  |  |
| 1                                | <p>The Applicant must ensure that the noise generated at the surface facilities does not exceed the noise impact assessment criteria in Table 1 at any residence on privately-owned land, or on more than 25% of any privately-owned land. The applicable criteria for any residence not listed in Table 1 shall be the criteria applying at the nearest listed residence.</p> <p><i>Table 1: Noise impact assessment criteria dB(A)</i></p> <table border="1"> <thead> <tr> <th>Day<br/>L<sub>Aeq</sub>(15 min)</th> <th>Evening<br/>L<sub>Aeq</sub>(15 min)</th> <th>Night<br/>L<sub>Aeq</sub>(15 min)</th> <th>LA<sub>1</sub>(1 min)</th> <th>Residence<br/>(as shown in the Noise Monitoring Program)</th> </tr> </thead> <tbody> <tr> <td>42</td> <td>42</td> <td>38</td> <td>48</td> <td>R2</td> </tr> <tr> <td>41</td> <td>41</td> <td>40</td> <td>50</td> <td>R22</td> </tr> <tr> <td>40</td> <td>40</td> <td>39</td> <td>49</td> <td>R1<br/>R9<br/>R15a</td> </tr> <tr> <td>40</td> <td>40</td> <td>37</td> <td>47</td> <td>R3a<br/>R5a<br/>R6a&amp;b</td> </tr> <tr> <td>37</td> <td>35</td> <td>35</td> <td>45</td> <td>R39a</td> </tr> </tbody> </table> | Day<br>L <sub>Aeq</sub> (15 min)   | Evening<br>L <sub>Aeq</sub> (15 min)   | Night<br>L <sub>Aeq</sub> (15 min)  | LA <sub>1</sub> (1 min) | Residence<br>(as shown in the Noise Monitoring Program) | 42 | 42 | 38 | 48 | R2 | 41 | 41 | 40 | 50 | R22 | 40 | 40 | 39 | 49 | R1<br>R9<br>R15a | 40 | 40 | 37 | 47 | R3a<br>R5a<br>R6a&b | 37 | 35 | 35 | 45 | R39a | Non-compliant (Low) | <ul style="list-style-type: none"> <li>14-day monitoring data reporting as available on the IMC website.</li> <li>Quarterly attended noise monitoring reports</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Site interviews completed 9, 10 and 11 October 2023.</li> <li>Letter from DPE dated 5 June 2023.</li> </ul> | <p><b>2020 IEA Recommendation:</b><br/>Continue to implement all reasonable and feasible noise mitigation measures.</p> <p><b>2023 IEA Findings:</b><br/><i>Status of 2020 IEA Recommendation:</i><br/>Noise monitoring identified a number of exceedances of noise criteria during the audit period, resulting in a non-compliance (low risk).<br/>However, review of Schedule 4, Condition 4(b) determined reasonable and feasible best practice noise mitigation measures have been implemented during the audit period.<br/>It is also noted, noise exceedance events often occurred at the time of temperature inversion and/or source-to-receiver wind directions. Due to the use of the Port Kembla Bureau of Meteorology station (ID 068253), which is unlikely to experience noise enhancing conditions (due to its coastal location), there is potential some of the exceedances are occurring when there would be noise enhancing conditions occurring at the KVCLF and/or Dendrobium Pit Top. The result being that IMC are potentially reporting noise exceedances that are not true exceedances.<br/>This recommendation is considered closed.</p> <p><i>2023 IEA Findings</i><br/><i>Noise criteria non-compliance</i><br/>Noise monitoring identified several exceedances of noise criteria during the audit period, including:</p> <ul style="list-style-type: none"> <li>8 February 2021 exceedance of day period LAeq(15min) criterion at R39a – not deemed to be a non-compliance in accordance with INP (&lt;2dBA exceedance);</li> <li>30 July 2021 exceedance of day period, evening period and night period LAeq(15min) criteria, and exceedance of LA1(1min) criterion at R39a – deemed to be a non-compliance. Corrective actions implemented including removal of locomotive from service and signage erected to remind personnel to close door to compressor room;</li> <li>9 February 2022 exceedance of evening period LAeq(15min) criterion at R39a – deemed to be a non-compliance. Warning letter issued by DPE. Investigation indicated that noise from rail – NMP updated to differentiate rail noise from surface operations;</li> <li>2 June 2022 exceedance of evening period and night period LAeq(15min) criteria at R39a – not deemed to be a non-compliance in accordance with INP (&lt;2dBA exceedance). Temperature inversions and drainage flow noted;</li> </ul> |
| Day<br>L <sub>Aeq</sub> (15 min) | Evening<br>L <sub>Aeq</sub> (15 min)   | Night<br>L <sub>Aeq</sub> (15 min) | LA <sub>1</sub> (1 min)  | Residence<br>(as shown in the Noise Monitoring Program)   |                         |   |    |    |    |    |    |    |    |    |    |     |    |    |    |    |                  |    |    |    |    |                     |    |    |    |    |      |                     |  |  |
| 42                               | 42   | 38                                 | 48   | R2  |                         |   |    |    |    |    |    |    |    |    |    |     |    |    |    |    |                  |    |    |    |    |                     |    |    |    |    |      |                     |  |  |
| 41                               | 41   | 40                                 | 50   | R22   |                         |   |    |    |    |    |    |    |    |    |    |     |    |    |    |    |                  |    |    |    |    |                     |    |    |    |    |      |                     |  |  |
| 40                               | 40   | 39                                 | 49   | R1<br>R9<br>R15a  |                         |   |    |    |    |    |    |    |    |    |    |     |    |    |    |    |                  |    |    |    |    |                     |    |    |    |    |      |                     |  |  |
| 40                               | 40   | 37                                 | 47   | R3a<br>R5a<br>R6a&b   |                         |   |    |    |    |    |    |    |    |    |    |     |    |    |    |    |                  |    |    |    |    |                     |    |    |    |    |      |                     |  |  |
| 37                               | 35   | 35                                 | 45   | R39a  |                         |   |    |    |    |    |    |    |    |    |    |     |    |    |    |    |                  |    |    |    |    |                     |    |    |    |    |      |                     |  |  |



| Condition # | Details  | Compliance status | Relevant evidence | Commentary  |
|-------------|--|-------------------|-------------------|---|
|             |  |                   |                   | <ul style="list-style-type: none"> <li>– 3 June 2022 exceedance of LA1(1min) criterion at R6a – not deemed to be a non-compliance in accordance with INP (&lt;2dBA exceedance). Temperature inversions and drainage flow noted;</li> <li>– 10 August 2022 exceedance of evening period and night period LAeq(15min) criteria at R39a – not deemed to be a non-compliance in accordance with INP (&lt;2dBA exceedance). Source to receiver winds noted;</li> <li>– 10 August 2022 exceedance of LA1(1min) criterion at R6a – not deemed to be a non-compliance in accordance with INP (&lt;2dBA exceedance);</li> <li>– 15 February 2023 exceedance of night period LAeq(15min) criterion at R39a – not deemed to be a non-compliance in accordance with INP (&lt;2dBA exceedance). Source to receiver winds noted; and</li> <li>– 13 May 2023 exceedance of night period LAeq(15min) criterion at R39a – not deemed to be a non-compliance in accordance with INP (&lt;2dBA exceedance). Temperature inversion noted.</li> </ul> <p>Only one of these exceedances of noise criteria during the audit period (13 May 2023) was a non-compliance (low-risk). As this was an unrepeated event, a CA has not been deemed necessary.</p> <p>Exceedances of noise criteria in Schedule 4 Condition 1 by 2 dBA or less were assessed in accordance with the former NSW Industrial Noise Policy (INP) during the audit period, with the INP stating that a 2 dBA exceedance does not constitute a non-compliance with noise impact assessment criteria. However, in a warning letter issued on 5 June 2023 (for the exceedance notification provided on 30 May 2023), DPE advised exceedances of criteria in Schedule 4, Condition 1 of DA 60-03-2001 are considered non-compliances (due to the former INP not being referenced in Schedule 4, Condition 1 of DA 60-03-2001) and should be reported as such in Annual Reviews.</p> <p>Review of relevant notes for Schedule 4, Condition 1 of DA 60-03-2001 during conduct of the audit identified reference to the INP. Therefore, the audit has concluded application of the INP is appropriate and in accordance with Schedule 4, Condition 1 of DA 60-03-2001.</p> <p>It is also noted, noise exceedance events often occurred at the time of temperature inversion and/or source-to-receiver wind directions. Due to the use of the Port Kembla Bureau of Meteorology station (ID 068253), which is unlikely to experience noise enhancing conditions (due to its coastal location), there is potential some of the exceedances are occurring when there would be noise enhancing conditions occurring at the KVCLF and/or Dendrobium Pit Top. The result being that IMC are potentially reporting noise exceedances that are not true exceedances.</p> <p><i>Noise monitoring</i></p> <p>In addition, during the audit period it was identified that noise monitoring at R39a was not being undertaken at the correct location (i.e. as documented in the NMP), with an investigation undertaken to determine variance between monitoring locations.</p> <p>Assessment of monitoring locations completed by Spoke Acoustics (dated 29 October 2021) was sighted, including subsequent response by DPE on 4 November 2021.</p> <p>The NMP has since been updated (Version 10.0 and subsequent versions) to include alternative monitoring location for R39a, with all monitoring locations reviewed against approved NMP.</p> |
|             | <p>Notes:</p> <ul style="list-style-type: none"> <li>– To determine compliance with the LAeq(15 minute) limit, noise from the development is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the development is impractical, EPA may accept alternative means of determining compliance.</li> <li>– To determine compliance with the L A1(1 minute) limit, noise from the development is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the development is impractical, EPA may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).</li> <li>– The noise emission limits identified in the above table apply under meteorological conditions of: <ul style="list-style-type: none"> <li>– wind speeds of up to 3 m/s at 10 metres above ground level; or</li> </ul> </li> </ul> | Note              | N/A.              | N/A.  |

| Condition #   | Details   | Compliance status   | Relevant evidence                                       | Commentary                          |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
|---|---|---|---|-------------------------------------|--|-----------------------------|----------|---|-----------------------------|------------------------|------------------------|--|---|-----------|--|--|----|--|--|--|----|--|--|--|------|----|----|----|-----|--|--|--|-----|--|--|--|-------|----|----|----|------|---------------|---|--|
|   | <ul style="list-style-type: none"> <li>– up to 3 C/100 m temperature inversion strength for all receivers, plus a 2 m/s source-to-receiver component drainage flow wind at 10 metres above ground level for those receivers where applicable.</li> <li>– These limits do not apply if the Applicant has an agreement with the relevant owner/s of these residences to generate higher noise levels, and the Applicant has advised the Department and EPA in writing of the terms of this agreement.</li> </ul>  |   |   |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
|   | <b>Land Acquisition Criteria</b>  |   |   |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
| 2   | <p>If the noise generated at the surface facilities exceeds the relevant criteria in Table 2 at any residence on privately-owned land or on more than 25% of any privately-owned land, the Applicant must, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 8 - 10 of schedule 4. The applicable criteria for any residence not listed in Table 2 shall be the criteria applying at the nearest listed residence.</p> <p><i>Table 2: Noise acquisition criteria dB(A)</i></p> <table border="1"> <thead> <tr> <th>Day<br/>L<sub>Aeq</sub>(15 min)</th> <th>Evening<br/>L<sub>Aeq</sub>(15 min)</th> <th>Night<br/>L<sub>Aeq</sub>(15 min)</th> <th>Residence<br/>(as shown in the Noise Monitoring Program)</th> </tr> </thead> <tbody> <tr> <td>47</td> <td>47</td> <td>43</td> <td>R2</td> </tr> <tr> <td>46</td> <td>46</td> <td>45</td> <td>R22</td> </tr> <tr> <td>45</td> <td>45</td> <td>44</td> <td>R1</td> </tr> <tr> <td></td> <td></td> <td></td> <td>R9</td> </tr> <tr> <td></td> <td></td> <td></td> <td>R15a</td> </tr> <tr> <td>45</td> <td>45</td> <td>42</td> <td>R3a</td> </tr> <tr> <td></td> <td></td> <td></td> <td>R5a</td> </tr> <tr> <td></td> <td></td> <td></td> <td>R6a&amp;b</td> </tr> <tr> <td>42</td> <td>40</td> <td>40</td> <td>R39a</td> </tr> </tbody> </table> | Day<br>L <sub>Aeq</sub> (15 min)  | Evening<br>L <sub>Aeq</sub> (15 min)                    | Night<br>L <sub>Aeq</sub> (15 min)  | Residence<br>(as shown in the Noise Monitoring Program)  | 47                          | 47       | 43  | R2                          | 46                     | 46                     | 45   | R22   | 45        | 45   | 44   | R1 |  |  |  | R9 |  |  |  | R15a | 45 | 45 | 42 | R3a |  |  |  | R5a |  |  |  | R6a&b | 42 | 40 | 40 | R39a | Not triggered | <ul style="list-style-type: none"> <li>– Quarterly attended noise monitoring reports.</li> <li>– Annual Reviews for FY21, FY22, and FY23.</li> <li>– Site interviews completed 9 October 2023.</li> <li>– Assessment of R39a Monitoring Locations (Spoke Acoustics; 29 October 2021).</li> <li>– Letter from DPIE (Dated 4 November 2021).</li> </ul> | Review of relevant documentation and conduct of interviews indicates this condition was not triggered during the audit period, with no written requests for acquisition. |
| Day<br>L <sub>Aeq</sub> (15 min)  | Evening<br>L <sub>Aeq</sub> (15 min)  | Night<br>L <sub>Aeq</sub> (15 min)  | Residence<br>(as shown in the Noise Monitoring Program) |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
| 47  | 47  | 43  | R2  |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
| 46  | 46  | 45  | R22   |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
| 45  | 45  | 44  | R1  |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
|   |   |   | R9  |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
|   |   |   | R15a  |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
| 45  | 45  | 42  | R3a   |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
|   |   |   | R5a   |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
|   |   |   | R6a&b   |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
| 42  | 40  | 40  | R39a  |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
|   | <i>Note: Noise generated by the development is to be measured in accordance with the notes to Table 1.</i>  | Note  | N/A.  | N/A.                                |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
|   | <b>Rail Haulage Impact Assessment Criteria</b>  |   |   |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
| 3   | The Applicant must ensure that noise generated by locomotives using the Kemira Valley rail line does not exceed the rail noise impact assessment criteria in Table 3.   |   |   |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
|   | <table border="1"> <thead> <tr> <th>Operating Condition</th> <th>Measurement Conditions</th> <th>Criteria<br/>L<sub>A1</sub>(1 min)</th> </tr> </thead> <tbody> <tr> <td>Locomotive at idle, with compressor radiator fans and air conditioning operating at maximum load</td> <td>Stationary 15 metre contour</td> <td>70 dB(A)</td> </tr> <tr> <td>All other throttle settings under self-load, with compressor radiator fans and air conditioning operating at maximum load</td> <td>Stationary 15 metre contour</td> <td>87 dB(A)<br/>95 dB(Lin)</td> </tr> <tr> <td>All service conditions</td> <td>Up to 50 kilometres per hour,<br/>15 metres from centreline of rail track</td> <td>87 dB(A)<br/>95 dB(Lin)<br/>Must be non-tonal<br/>Linear noise levels must not exceed A-weighted noise levels by more than 15 dB</td> </tr> </tbody> </table>   | Operating Condition   | Measurement Conditions                                  | Criteria<br>L <sub>A1</sub> (1 min) | Locomotive at idle, with compressor radiator fans and air conditioning operating at maximum load | Stationary 15 metre contour | 70 dB(A) | All other throttle settings under self-load, with compressor radiator fans and air conditioning operating at maximum load | Stationary 15 metre contour | 87 dB(A)<br>95 dB(Lin) | All service conditions | Up to 50 kilometres per hour,<br>15 metres from centreline of rail track | 87 dB(A)<br>95 dB(Lin)<br>Must be non-tonal<br>Linear noise levels must not exceed A-weighted noise levels by more than 15 dB | Compliant | <ul style="list-style-type: none"> <li>– Site interviews completed 9, 10 and 11 October 2023.</li> <li>– Annual Reviews for FY21, FY22, and FY23.</li> <li>– Annual Rail Haulage Assessment for FY21, FY22, and FY23.</li> </ul> | Review of Annual Rail Haulage Assessment for 2020, 2021 and 2022 identified that rail noise levels complied with LA1(1min) criteria during each assessment period. |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
| Operating Condition   | Measurement Conditions  | Criteria<br>L <sub>A1</sub> (1 min)   |   |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
| Locomotive at idle, with compressor radiator fans and air conditioning operating at maximum load                          | Stationary 15 metre contour   | 70 dB(A)  |   |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
| All other throttle settings under self-load, with compressor radiator fans and air conditioning operating at maximum load | Stationary 15 metre contour   | 87 dB(A)<br>95 dB(Lin)  |   |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
| All service conditions  | Up to 50 kilometres per hour,<br>15 metres from centreline of rail track  | 87 dB(A)<br>95 dB(Lin)<br>Must be non-tonal<br>Linear noise levels must not exceed A-weighted noise levels by more than 15 dB |   |                                     |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |
|   | <i>Note: All measured noise levels must be assessed for tonality in accordance with the NSW Industrial Noise Policy, unless otherwise specified</i>   | Note  | N/A.  | N/A.                                |  |                             |          |   |                             |                        |                        |  |   |           |  |  |    |  |  |  |    |  |  |  |      |    |    |    |     |  |  |  |     |  |  |  |       |    |    |    |      |               |   |  |

| Condition # | Details  | Compliance status              | Relevant evidence  | Commentary  |
|-------------|--|--------------------------------|--|---|
|             | <b>Continuous Improvement</b>  |                                |  |   |
| 4           | The Applicant must:<br>(a) continue to investigate ways to reduce the noise generated by the development (including off-site road noise, noise and vibration impacts from the operation of the Kemira Valley rail line and maximum noise levels which may result in sleep disturbance);<br>(b) continue to implement all reasonable and feasible best practice noise mitigation measures; and<br>(c) report on these investigations and the implementation and effectiveness of these measures in the Annual Review,<br>to the satisfaction of the Secretary.  | Compliant                      | <ul style="list-style-type: none"> <li>Site interviews completed 9 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Complaints records.</li> <li>2022 Dendrobium Rail Haulage – Supplementary Assessment.</li> <li>Sound Power Level Investigation (Spoke Acoustics, 2023).</li> </ul> | Review of relevant documentation and conduct of interviews indicates compliance with the requirements of this condition as follows: <ol style="list-style-type: none"> <li>Discussed with IMC, mitigation and management measures to reduce noise generation, including investigation into locomotive tonal noise (sighted 2022 Dendrobium Rail Haulage Supplementary Assessment), shielding and barriers to equipment (e.g. compressors), noise audit to identify noisy plant and equipment (sighted Sound Power Level Investigation (Spoke Acoustics, August 2023)), design of site to minimise reversing, implementation of real-time monitoring system and night curfews.</li> <li>Section 5 of the NMP describes the noise management and mitigation measures that are undertaken at the site. Discussed measures with IMC.</li> <li>Section 6 of the Annual Reviews describes management measures that have been implemented and the monitoring program to assess the effectiveness of the measures.</li> </ol> |
| 5           | The Applicant must use its best endeavours to minimise wheel squeal, brake squeal and locomotive wheel slippage arising from rail haulage on the Kemira Valley rail line.  | Compliant                      | <ul style="list-style-type: none"> <li>Site interviews completed 9 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Complaints records.</li> </ul>   | Confirmed with IMC, measures to minimise wheel and brake squeal from rail line, including replacement of brake shoes, track inspections and three monthly meetings (Rail Noise Working Group) to address maintenance activities and develop control actions.  |
|             | <b>Additional Noise Mitigation Measures</b>  |                                |  |   |
| 6           | Upon receiving a written request from the owner of any residence where subsequent noise monitoring shows the noise generated by the development is 3 dB(A) greater than the noise impact assessment criteria in Table 1 (except where a negotiated noise agreement is in place) the Applicant must implement reasonable and feasible noise mitigation measures (such as double glazing, insulation and/or air conditioning) at any residence on the land in consultation with the landowner.<br>If within 3 months of receiving this request from the landowner, the Applicant and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution. | Not Triggered                  | <ul style="list-style-type: none"> <li>Site interviews completed 9 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> </ul>  | Review of Annual Reviews for 2020/21, 2021/22 and 2022/23 identified that noise levels did not exceed the criteria for the implementation of additional noise mitigation measures during the audit period.<br>There were no written requests received from the owner of any residence during the audit period.  |
|             | <b>Monitoring</b>  |                                |  |   |
| 7           | The Applicant must prepare a Noise Monitoring Program for the development to the satisfaction of the Secretary. This program must:<br>(a) be submitted to the Secretary for approval by 30 April 2009;<br>(b) be prepared in consultation with EPA;<br>(c) provide for quarterly attended noise monitoring and real-time noise monitoring (where appropriate) to monitor the performance of the development, especially in residential areas close to the surface facilities; and<br>(d) include a noise monitoring protocol for evaluating compliance with the noise impact and land acquisition criteria in this consent.<br>The Applicant must implement the Noise Monitoring Program as approved by the Secretary.   | Non-compliant (Administrative) | Noise Management Plan (NMP) (August 2022).   | On 15 May 2021, it was identified that noise monitoring at R39a was not being undertaken at the location as specified in the NMP, which is identified as a non-compliance with Schedule 4, Condition 7. Noise monitoring has been undertaken at the current location for an extended period.<br>The NMP was revised in May 2021 to indicate the current monitoring location.<br>An ANC has been identified and no recommendation is deemed relevant.  |
|             | <i>Note: This program must expressly monitor the modifying factors referred to in the NSW Industrial Noise Policy (such as intermittency, tonality and low frequency)</i>  | Note                           | N/A.   | N/A.  |

| Condition #                                    | Details   | Compliance status                        | Relevant evidence  | Commentary   |  |        |                      |  |        |                      |           |                  |           |  |         |                      |           |                  |  |                                    |                |        |                           |                           |           |  |  |
|--|---|--|--|--|--|--------|----------------------|--|--------|----------------------|-----------|------------------|-----------|--|---------|----------------------|-----------|------------------|--|------------------------------------|----------------|--------|---------------------------|---------------------------|-----------|--|--|
|  | <b>BLASTING AND VIBRATION</b>   |  |  |  |  |        |                      |  |        |                      |           |                  |           |  |         |                      |           |                  |  |                                    |                |        |                           |                           |           |  |  |
| 8  | The Applicant is not permitted to undertake blasting operations at the surface facilities except with the prior written approval of EPA and subject to any conditions which EPA may impose  | Compliant                                | <ul style="list-style-type: none"> <li>Site interviews completed 9, 10 and 11 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> </ul> | Review of relevant documentation and conduct of interviews indicates compliance with the requirements of this condition. |  |        |                      |  |        |                      |           |                  |           |  |         |                      |           |                  |  |                                    |                |        |                           |                           |           |  |  |
|  | <b>AIR QUALITY</b>  |  |  |  |  |        |                      |  |        |                      |           |                  |           |  |         |                      |           |                  |  |                                    |                |        |                           |                           |           |  |  |
|  | <b>Impact Assessment Criteria</b>   |  |  |  |  |        |                      |  |        |                      |           |                  |           |  |         |                      |           |                  |  |                                    |                |        |                           |                           |           |  |  |
| 9  | <p>The Applicant must ensure that dust generated by the development does not cause additional exceedances of the criteria listed in Tables 4 to 6 at any residence on privately-owned land, or on more than 25 percent of any privately-owned land.</p> <p><i>Table 4: Long term impact assessment criteria for particulate matter</i></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Criterion</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td>90 µg/m<sup>3</sup></td> </tr> <tr> <td>Particulate matter &lt; 10 µm (PM<sub>10</sub>)</td> <td>Annual</td> <td>30 µg/m<sup>3</sup></td> </tr> </tbody> </table> <p><i>Table 5: Short term impact assessment criteria for particulate matter</i></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Criterion</th> </tr> </thead> <tbody> <tr> <td>Particulate matter &lt; 10 µm (PM<sub>10</sub>)</td> <td>24 hour</td> <td>50 µg/m<sup>3</sup></td> </tr> </tbody> </table> <p><i>Table 6: Long term impact assessment criteria for deposited dust</i></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Maximum increase in deposited dust level</th> <th>Maximum total deposited dust level</th> </tr> </thead> <tbody> <tr> <td>Deposited dust</td> <td>Annual</td> <td>2 g/m<sup>2</sup>/month</td> <td>4 g/m<sup>2</sup>/month</td> </tr> </tbody> </table> | Pollutant                                | Averaging period   | Criterion  | Total suspended particulate (TSP) matter | Annual | 90 µg/m <sup>3</sup> | Particulate matter < 10 µm (PM <sub>10</sub> ) | Annual | 30 µg/m <sup>3</sup> | Pollutant | Averaging period | Criterion | Particulate matter < 10 µm (PM <sub>10</sub> ) | 24 hour | 50 µg/m <sup>3</sup> | Pollutant | Averaging period | Maximum increase in deposited dust level | Maximum total deposited dust level | Deposited dust | Annual | 2 g/m <sup>2</sup> /month | 4 g/m <sup>2</sup> /month | Compliant | <ul style="list-style-type: none"> <li>Data collected from IMC air quality monitors.</li> <li>Site interviews completed 9 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Air Quality and Greenhouse Gas Management Plan (AQGGMP) (August 2023).</li> </ul> | <p><b>2020 IEA Recommendation:</b><br/>R04: Await further direction from EPA and implement any actions required.</p> <p><b>2023 IEA Findings:</b><br/><u>Status of 2020 IEA Recommendation:</u><br/>The dust spray was repaired. Additional water trucks were on call and operational over the period that the dust sprays were off-line continue to be implemented where adverse weather conditions are predicted.<br/>Review of documentation indicates no further direction was given and this recommendation is considered closed.</p> <p><u>2023 IEA Findings</u><br/>IMC monitors air quality in accordance with the approved AQGGMP (IMC, 2021). Air quality monitoring has historically included high volume air samplers (HVAS) and deposited dust gauges however the technology was upgraded to real-time monitors in July 2021. The AQGGMP has provision for monitoring using deposited dust gauges and HVASs if required.<br/>Concentrations of PM<sub>10</sub> are measured directly, in real-time, at two locations using photometers. TSP concentrations and deposited dust levels are estimated from the PM<sub>10</sub> concentrations. The monitoring carried out in the audit period (16 Oct 2020 to 16 Oct 2023) has shown:</p> <ul style="list-style-type: none"> <li>annual average TSP concentrations have not exceeded 90 µg/m<sup>3</sup>, based on monitoring and estimates from PM<sub>10</sub> levels;</li> <li>annual average PM<sub>10</sub> concentrations have not exceeded 30 µg/m<sup>3</sup>;</li> <li>24-hour average PM<sub>10</sub> concentrations exceeded 50 µg/m<sup>3</sup> on one day (13 Sep 2023). The result was investigated, and the cause was identified as a regional event. Measured PM<sub>10</sub> concentrations at the DPE's Kembla Grange monitor also exceeded 50 µg/m<sup>3</sup> around this time; and</li> <li>annual average deposited dust levels have not exceeded 4 g/m<sup>2</sup>/month, based on monitoring and estimates from PM<sub>10</sub> levels.</li> </ul> <p>The monitoring has shown that operations at Dendrobium Mine have not caused additional exceedances of the criteria listed in Tables 4 to 6 at locations representative of sensitive places. However, <b>OFI03</b> has been identified to ensure commentary on compliance with TSP and deposited dust criteria in DA 60-03-2001 is provided.</p> <p><b>OFI03: Ensure commentary on compliance against the TSP and deposited dust criteria in DA 60-03-2001 is provided in each Annual Review.</b></p> |
| Pollutant                                      | Averaging period  | Criterion                                |  |  |  |        |                      |  |        |                      |           |                  |           |  |         |                      |           |                  |  |                                    |                |        |                           |                           |           |  |  |
| Total suspended particulate (TSP) matter       | Annual  | 90 µg/m <sup>3</sup>                     |  |  |  |        |                      |  |        |                      |           |                  |           |  |         |                      |           |                  |  |                                    |                |        |                           |                           |           |  |  |
| Particulate matter < 10 µm (PM <sub>10</sub> ) | Annual  | 30 µg/m <sup>3</sup>                     |  |  |  |        |                      |  |        |                      |           |                  |           |  |         |                      |           |                  |  |                                    |                |        |                           |                           |           |  |  |
| Pollutant                                      | Averaging period  | Criterion                                |  |  |  |        |                      |  |        |                      |           |                  |           |  |         |                      |           |                  |  |                                    |                |        |                           |                           |           |  |  |
| Particulate matter < 10 µm (PM <sub>10</sub> ) | 24 hour   | 50 µg/m <sup>3</sup>                     |  |  |  |        |                      |  |        |                      |           |                  |           |  |         |                      |           |                  |  |                                    |                |        |                           |                           |           |  |  |
| Pollutant                                      | Averaging period  | Maximum increase in deposited dust level | Maximum total deposited dust level   |  |  |        |                      |  |        |                      |           |                  |           |  |         |                      |           |                  |  |                                    |                |        |                           |                           |           |  |  |
| Deposited dust                                 | Annual  | 2 g/m <sup>2</sup> /month                | 4 g/m <sup>2</sup> /month  |  |  |        |                      |  |        |                      |           |                  |           |  |         |                      |           |                  |  |                                    |                |        |                           |                           |           |  |  |
|  | <i>Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS/NZS 3580.10.1-2003 Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter – Gravimetric Method.</i>  | Note                                     | N/A.   | N/A.   |  |        |                      |  |        |                      |           |                  |           |  |         |                      |           |                  |  |                                    |                |        |                           |                           |           |  |  |

| Condition # | Details   | Compliance status | Relevant evidence  | Commentary   |
|-------------|---|-------------------|--|--|
|             | <b>Monitoring</b>   |                   |  |  |
| 10          | <p>The Applicant must prepare an Air Quality Monitoring Program for the surface facilities (excepting those surface facilities within the mining area) to the satisfaction of the Secretary. This program must:</p> <p>(a) be submitted to the Secretary for approval by 30 April 2009;</p> <p>(b) be prepared in consultation with EPA;</p> <p>(c) use a combination of high volume samplers and dust deposition gauges to monitor the performance of the development; and</p> <p>(d) include an air quality monitoring protocol for evaluating compliance with the air quality impact assessment criteria in this consent.</p> <p>The Applicant must implement the Air Quality Monitoring Program as approved by the Secretary.</p> | Compliant         | <ul style="list-style-type: none"> <li>– Air Quality and Greenhouse Gas Management Plan (AQGHGMP) (Rev 9, August 2023).</li> <li>– Annual Reviews for FY21, FY22, and FY23.</li> <li>– Site interviews completed 9 October 2023.</li> <li>– Air quality review for Dendrobium Mine issued to the EPA (9 June 2020).</li> </ul> | <p>The AQGGMP (Rev 9, August 2023) is available on the IMC website. This plan includes a description of the Air Quality Monitoring Program (Section 6). The plan was approved by DPE on 9 August 2023 as per Appendix 4 of the AQGGMP. EPA consultation notes are included in Appendix 3 of the AQGGMP.</p> <p>Air quality monitoring has historically included high volume air samplers and deposited dust gauges however the technology was upgraded to real-time monitors in July 2021. This upgrade was carried out in consultation with the EPA, and approved by the DPE as per the AQGGMP approval (8 June 2021).</p> <p>The AQGGMP includes a protocol for evaluating compliance with the air quality impact assessment criteria. This protocol is based on results from the monitoring program as well as from regional monitoring by the DPE.</p> <p>Monitoring equipment was inspected on 9 October 2023. Data from the monitoring were reviewed. The inspections and reviews showed that IMC is carrying out the monitoring as per the Air Quality Monitoring Program in the AQGGMP.</p>  |
|             | <b>METEOROLOGICAL MONITORING</b>  |                   |  |  |
| 11          | <p>During the development, the Applicant must ensure that it has a suitable meteorological station in the vicinity of the site that is generally in accordance with the requirements in the guideline Approved Methods for Sampling of Air Pollutants in New South Wales.</p>   | Compliant         | <ul style="list-style-type: none"> <li>– Site interviews completed 9 October 2023.</li> <li>– Review of SCADA system.</li> </ul>   | <p>The meteorological stations were inspected on 9 October 2023 and a sample of meteorological data (August to October 2023) was reviewed. This showed:</p> <ul style="list-style-type: none"> <li>– meteorological stations are not strictly located in accordance with the Approved Methods for the Sampling and Analysis of Air Pollutants in NSW but have been positioned as best as possible given the site constraints, surrounding infrastructure, terrain and vegetation. The Dendrobium Pit Top meteorological station is situated on the top of buildings, approximately 6 to 7 m above ground, with the site inspection completed on 9 October 2023 indicated the meteorological station is potentially not of sufficient height to avoid influence of the building in measuring local winds; and</li> <li>– the meteorological stations collect relevant data to assist with evaluating air quality monitoring results. The data include wind speed, wind direction, temperature, rainfall and barometric pressure, collected at 10-minute intervals.</li> </ul> <p>IMC operates a suitable meteorological station in the vicinity of the site which is generally in accordance with the requirements of the Approved Methods for the Sampling and Analysis of Air Pollutants in NSW; however, <b>OF104</b> has been made to identify opportunities to improve the exposure of the meteorological station.</p> <p><b>OF104:</b> Assess opportunities to improve the exposure of the meteorological station (e.g. using taller masts to get to approximately 10 m).</p> |
|             | <b>WATER MANAGEMENT</b>   |                   |  |  |
|             | <b>Discharges</b>   |                   |  |  |

| Condition #                         | Details   | Compliance status   | Relevant evidence   | Commentary   |
|-------------------------------------|---|---------------------|---|--|
| 12                                  | <p>The Applicant must ensure all surface water discharges from the surface facilities:</p> <p>(a) meet the relevant ANZECC water quality objectives for the protection of aquatic ecosystems and water quality of existing receiving waters; and</p> <p>(b) comply with the discharge limits (both volume and quality) set for the development in any EPL.</p>  | Non-compliant (Low) | <ul style="list-style-type: none"> <li>– WMP (Rev 8.0, 4 August 2023).</li> <li>– Annual Reviews for FY21, FY22, and FY23.</li> <li>– Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>– 14-day monitoring data reporting as available on the IMC website.</li> <li>– Incident reports, as relevant.</li> <li>– Site interviews completed 9, 10 and 11 October 2023.</li> </ul> | <p><b>2020 IEA Recommendation:</b></p> <p>The release from the sediment dam is currently under investigation by the regulator.</p> <p><b>2023 IEA Findings:</b></p> <p><u>Status of 2020 IEA Recommendation:</u></p> <p>An investigation determined that the cause of the event was the corrosion and subsequent failure of a clean water diversion pipe beneath the sediment pond. This caused a void to form underneath the sediment pond and the subsequent release of water. A clean-up program was implemented to remove the coal fines. An environmental assessment of the creeks in November 2020 observed no ongoing evidence of coal fines.</p> <p>Measures to reinstate the sediment pond were undertaken, including replacement of the clean water diversion pipe. The sediment pond returned to normal operation in December 2020.</p> <p>Review of documentation indicates no further direction was given and this recommendation is considered closed.</p> <p><u>2023 IEA Findings</u></p> <p>A minor non-compliance (low risk) was identified regarding discharge water quality limits, in relation to an exceedance of the water quality concentration limit for Zinc (of 0.4 mg/L) was detected during investigations at licence discharge point (LDP) 5 on 13 October 2021. A concentration of 0.6 mg/L was recorded during the discharge of brine from the Appin North water treatment plant, likely due to inadequate mixing with Dendrobium Mine water.</p> <p>Therefore, as this was an unrepeated event, a CA is not deemed relevant. Furthermore, it is understood from audit interviews that IMC are developing a protocol around limiting brine discharge from Appin North water treatment plant when the Dendrobium Mine is not actively discharge or discharging minimal quantities.</p> |
| <b>Water Management Plan</b>        |   |                     |   |  |
| 13                                  | <p>The Applicant must prepare a Water Management Plan for the surface facilities to the satisfaction of the Secretary. This plan must:</p> <p>(a) be submitted to the Secretary for approval by 30 April 2009;</p> <p>(b) be prepared in consultation with EPA, WaterNSW and DPE Water by suitably qualified expert/s whose appointment/s have been approved by the Secretary; and</p> <p>(c) include a:</p> <ul style="list-style-type: none"> <li>– Site Water Balance;</li> <li>– Erosion and Sediment Control Plan;</li> <li>– Surface Water Monitoring Program; and</li> <li>– Surface and Ground Water Response Plan.</li> </ul> <p>The Applicant must implement the Water Management Plan as approved by the Secretary</p> | Compliant           | Water Management Plan (WMP) (Rev 8.0, 4 August 2023).   | <p>a) The Dendrobium Mine WMP was updated in August 2023. Appendix 4 includes a letter of approval from DPE dated 9 August 2023.</p> <p>b) Appendix 2 of the WMP includes Agency comments from EPA/Water NNSW/DPIE/NRAR – and indicates how these comments have been addressed.</p> <p>c) Appendix 3 includes a letter of endorsement of the suitably qualified experts by DPE.</p> <p>d) The WMP includes:</p> <ul style="list-style-type: none"> <li>– Site Water Balance;</li> <li>– Erosion and Sediment Control Plan;</li> <li>– Surface Water Monitoring Program; and</li> <li>– Surface and Ground Water Response Plan.</li> </ul>  |
| <b>Site Water Balance</b>           |   |                     |   |  |
| 14                                  | <p>The Site Water Balance must:</p> <p>(a) include details of:</p> <ul style="list-style-type: none"> <li>– sources and security of water supply;</li> <li>– water use on site;</li> <li>– water intercepted by mining operations;</li> <li>– water management on site;</li> <li>– off-site water transfers and water stored or disposed of underground;</li> <li>– reporting procedures; and</li> </ul> <p>(b) describe measures to minimise water use by the development.</p>   | Compliant           | <ul style="list-style-type: none"> <li>– WMP (Rev 8.0, 4 August 2023).</li> <li>– Annual Reviews for FY21, FY22, and FY23.</li> </ul>   | <p>The Site Water Balance has been included in the Water Management Plan as Section 4 – the current version of the WMP includes volumes for FY23</p> <p>Sources include – rainfall and runoff, Sydney water pipeline, groundwater, industrial water, coal moisture</p> <p>Section 4.3.5 states that the water balance at Dendrobium mine is reviewed on a daily basis and is reported through to site management, Dams Safety NSW, WaterNSW and DPE on a monthly basis.</p> <p>The water balance is also reported on a monthly basis in the internal sustainability data collation app. Any significant variations in water consumption or discharge identified are investigated to determine the cause of the variation.</p> <p>Section 4.4 Outlines further reporting of particular details to DPE, EPA, WaterNSW, DS NSW, DCCC, WSC, WCC, CCC, BCS, DCCEEW, NSW Resources Regulator.</p> <p>Section 4.3 outlines water use minimisation strategies.</p>   |
| <b>Erosion and Sediment Control</b> |   |                     |   |  |

| Condition # | Details   | Compliance status | Relevant evidence  | Commentary  |
|-------------|---|-------------------|--|---|
| 15          | The Erosion and Sediment Control Plan must:<br>(a) be consistent with the requirements of the Managing Urban Stormwater: Soils and Construction Manual (Landcom 2004, or its latest version);<br>(b) identify activities that could cause soil erosion and generate sediment;<br>(c) describe measures to minimise soil erosion and the potential for transport of sediment to downstream waters;<br>(d) describe the location, function, and capacity of erosion and sediment control structures; and<br>(e) describe what measures would be implemented to monitor and maintain the structures over time. | Compliant         | <ul style="list-style-type: none"> <li>WMP (Rev 8.0, 4 August 2023).</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> </ul>  | <p>a) The Erosion and Sediment Control Plan has been included in the Water Management Plan as Section 5.</p> <p>b) The WMP identifies potential works that can lead to erosion events - including vegetation clearing, weed maintenance and construction activities.</p> <p>c) The following erosion and sediment minimisation measures are identified:</p> <ul style="list-style-type: none"> <li>clean water runoff from off site is diverted around the site;</li> <li>the VS1 site has been revegetated to reduce runoff and erosion potential; and</li> <li>sediment traps and pits are installed in the site runoff water drainage system.</li> </ul> <p>d) Locations of structures are shown in the plans in section 13 of the WMP.</p> <p>e) Maintenance Activities are provided in section 5.2.</p>  |
|             | <b>Surface Water Monitoring Program</b>   |                   |  |   |
| 16          | The Surface Water Monitoring Plan must include:<br>(a) baseline data on surface water flows and quality in streams and other waterbodies that have been or could be affected by the surface facilities;<br>(b) surface water quality and stream health assessment criteria, including trigger levels for investigating any potentially adverse surface water impacts;<br>(c) a program to monitor the impact of the surface facilities on surface water flows and quality, stream health and channel stability; and<br>(d) procedures for reporting the results of this monitoring.                         | Compliant         | <ul style="list-style-type: none"> <li>WMP (Rev 8.0, 4 August 2023).</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> </ul>  | The Surface Water Monitoring Plan addressing these issues has been included in the Water Management Plan as Section 6.  |
|             | <b>Surface and Ground Water Response Plan</b>   |                   |  |   |
| 17          | The Surface and Ground Water Response Plan must describe what measures and/or procedures would be implemented to:<br>(a) respond to any exceedances of the surface water, stream health, and groundwater assessment criteria; and<br>(b) mitigate and/or offset any adverse impacts on groundwater dependent ecosystems, aquatic ecosystems or riparian vegetation.   | Compliant         | <ul style="list-style-type: none"> <li>WMP (Rev 8.0, 4 August 2023).</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> </ul>  | The Surface and Ground Water Response Plan has been included in the Water Management as Section 7.  |
|             | <b>LANDSCAPE MANAGEMENT</b>   |                   |  |   |
|             | <b>Rehabilitation</b>   |                   |  |   |
| 18          | For rehabilitation works within the Metropolitan Special Area, the Applicant must ensure that these works are carried out to the satisfaction of WaterNSW.  | Compliant         | <ul style="list-style-type: none"> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Dendrobium Colliery Annual Rehabilitation Report Friday 1 July 2022 to Friday 30 June 2023.</li> <li>WC21 and Donalds Castle Creek Rehabilitation Plan (Rev 4, 31 January 2023).</li> <li>DPE approval of WC21 and Donalds Castle Creek Rehabilitation Plan (Rev 4, 31 January 2023), dated 24 May 2023.</li> <li>Site interviews completed 9, 10 and 11 October 2023.</li> <li>Site inspection completed 9, 10 and 11 October 2023.</li> </ul> | <p>During conduct of the 2023 IEA, WaterNSW was consulted and identified the following in relation to rehabilitation:</p> <p><i>The only rehabilitation attempted is remediation trial of two pools in Wongawilli Creek tributary WC21 during 2021-2022 as per the Donalds Castle Creek and WC21 Rehabilitation plan. Very limited success is reported to date.</i></p> <p>The WC21 and Donalds Castle Creek Rehabilitation Plan is required by Condition 15 of the SMP Approvals for LW 17 and LW 18.</p> <p>Review of documentation during completion of the 2023 IEA indicates rehabilitation trials as part of the WC21 and Donalds Castle Creek Rehabilitation Plan were approved during the FY22 Annual Review period, with the trial rehabilitation program commencing November 2021 in relation to drilling and grouting of the two pools in WC21 (i.e. Pool 24 and Pool 25). However, these works were paused in December 2021 due to restricted access to WaterNSW Special Area during wet weather.</p> <p>Ongoing La Nina conditions restricted access to the Metropolitan Special Areas until September 2022 and lead to track damage requiring repair prior to recommencement of works. Following track repairs the grouting trial resumed and was completed in November/December 2022.</p> <p>The post remediation verification works were undertaken in December 2022 and January 2023 and involved drilling of two post verification holes using a small track mounted drill rig. Geotechnical logging, geophysical logging and packer testing was also undertaken on the post grouting verification holes.</p> <p>An update of the WC21 and Donalds Castle Creek Rehabilitation Plan (Rev 4, 31 January 2023) was completed to report on progress of rehabilitation trials undertaken at Pool 24 and Pool 25, with approval provided 24 May 2023. With completion of these works, post-grouting monitoring of pool water levels commenced and was required to be undertaken for a period of six (6) months prior to undertaking an assessment of the</p> |

| Condition # | Details | Compliance status | Relevant evidence | Commentary  |
|-------------|---------|-------------------|-------------------|---|
|             |         |                   |                   | <p>outcome of the trial. This assessment required consideration of the post remediation verification hole logging, piezometer data (S2337/S2338) and pool water level data collected during the monitoring period.</p> <p>Correspondence from DPE approving the revised <i>WC21 and Donalds Castle Creek Rehabilitation Plan</i> (Rev 4, 31 January 2023) noted:</p> <ul style="list-style-type: none"> <li>– a revision to the <i>WC21 and Donalds Castle Creek Rehabilitation Plan</i> is required to report on the results of the trial and needed to be submitted to DPE by 31 August 2023; and</li> <li>– the BCS advice on the broader rehabilitation plan needing to be considered and responded to during revision to the <i>WC21 and Donalds Castle Creek Rehabilitation Plan</i>.</li> </ul> <p>The revised <i>WC21 and Donalds Castle Creek Rehabilitation Plan</i> (Rev 5, 31 August 2023) was submitted on 31 August 2023, with the following noted:</p> <ul style="list-style-type: none"> <li>– evidence of receipt by DPE provided on 31 August 2023; and</li> <li>– response from WaterNSW provided 27 September 2023.</li> </ul> <p>The results of post-grouting monitoring of pool water levels at Pool 24 and Pool 25 reported in the <i>WC21 and Donalds Castle Creek Rehabilitation Plan</i> (Rev 5, 31 August 2023) indicate the grouting has potentially not been successful. However, the <i>WC21 and Donalds Castle Creek Rehabilitation Plan</i> (Rev 5, 31 August 2023) proposes continuation of monitoring until sufficient rainfall occurs, with South32 IMC committing to review rainfall data every 6 months to determine if sufficient rainfall (i.e. average, or above average rainfall during the period) has occurred to repeat the assessment. The assessment would then be repeated, and the <i>WC21 and Donalds Castle Creek Rehabilitation Plan</i> (Rev 5, 31 August 2023) would be updated with the results. In addition, results from the trial will be included in relevant EOP reports and the 2023/2024 Annual Review.</p> <p>Correspondence from WaterNSW provided on 27 September 2023 indicates support for the above.</p> <p>Average or above average rainfall is an undefined period and likely to be affected by current El Nino conditions. In addition, the auditor considers it likely a sufficient rainfall event is unlikely to result in significantly different monitoring results to those currently reported <i>WC21 and Donalds Castle Creek Rehabilitation Plan</i> (Rev 5, 31 August 2023). There is uncertainty as to when average or above average rainfall would be received. In addition, the auditor considers average or above average rainfall is potentially unlikely to result in significantly different monitoring results to those currently reported in the <i>WC21 and Donalds Castle Creek Rehabilitation Plan</i> (Rev 5, 31 August 2023). Therefore, <b>OFI05</b> and <b>OFI06</b> have been identified, with <b>OFI05</b> including consideration to commencement of rehabilitation trials at Donalds Castle Creek (i.e. due to potential for different watercourses to respond differently to remediation attempts). These OFIs have been made with consideration to the requirements of Schedule 4, Condition 18A of DA 60-03-2001, which requires IMC to remediate physical damage to watercourses subject to subsidence impacts as soon as reasonably practicable.</p> <p><b>OFI05:</b> <i>To ensure compliance with the requirement to remediate physical damage to watercourses subject to subsidence impacts as soon as reasonably practicable, commence specific engagement with WaterNSW, BCS and DPE during the period in which continuation of monitoring is being undertaken until 3-6 months of average or above average rainfall occurs (as proposed in WC21 and Donalds Castle Creek Rehabilitation Plan [Rev 5, 31 August 2023 – currently waiting for DPE approval]).</i></p> <p>The specific engagement would focus on:</p> <ul style="list-style-type: none"> <li>– confirming agreement regarding the appropriate path forward should 3-6 months of average or above average rainfall not result in significantly different monitoring results, to establish whether: <ul style="list-style-type: none"> <li>– more grouting is required; or</li> <li>– modification to grouting/remediation techniques is required.</li> </ul> </li> </ul> |



| Condition #  | Details  | Compliance status | Relevant evidence | Commentary   |  |  |  |                |   |                          |  |                          |  |           |   |  |
|--|--|-------------------|-------------------|--|--|--|--|----------------|---|--------------------------|--|--------------------------|--|-----------|---|--|
|  |  |                   |                   | <ul style="list-style-type: none"> <li>– whether any remediation is likely to be successful at WC21;</li> <li>– whether separate remediation trials should also commence at Donalds Castle Creek, rather than focusing efforts at WC21 only;</li> <li>– whether the environmental impacts of remediation (e.g. associated with the existing or any modified remediation technique required at WC21 and Donalds Castle Creek) would exceed the environmental benefits; and</li> </ul> <p>whether alternative measures and/or programs required to be implemented in the catchment to offset the impacts to WC21 and Donalds Castle Creek, and at what point the need to offset impacts would be determined necessary.</p> <p><b>OFI06:</b> To ensure compliance with the requirement to remediate physical damage to watercourses subject to subsidence impacts 'as soon as reasonably practicable', a detailed program for completion of remediation to WC21 and Donalds Castle Creek is to be included in a future revision to the WC21 and Donalds Castle Creek Rehabilitation Plan.</p> |  |  |  |                |   |                          |  |                          |  |           |   |  |
|  | <b>Rehabilitation Objectives</b>   |                   |                   |  |  |  |  |                |   |                          |  |                          |  |           |   |  |
| 18A  | <p>The Applicant must rehabilitate the site in accordance with the conditions imposed on the mining lease(s) associated with the development under the Mining Act 1992. This rehabilitation must be generally consistent with the proposed rehabilitation strategy described in the documents listed in condition 2 of Schedule 2, and comply with the objectives in Table 7.</p> <p><i>Table 7: Rehabilitation Objectives</i></p> <table border="1"> <thead> <tr> <th>Feature</th> <th>Objective</th> </tr> </thead> <tbody> <tr> <td>All areas of the site affected by the development</td> <td> <ul style="list-style-type: none"> <li>• Safe, stable and non-polluting</li> <li>• Fit for the intended post-mining land use/s</li> <li>• Establish the final landform and post-mining land use/s as soon as practicable after cessation of mining operations</li> <li>• Minimise post-mining environmental impacts</li> </ul> </td> </tr> <tr> <td>Areas proposed for native ecosystem re-establishment</td> <td> <ul style="list-style-type: none"> <li>• Establish/restore self-sustaining native woodland ecosystems</li> <li>• Establish local plant community types</li> <li>• Establish:               <ul style="list-style-type: none"> <li>– riparian habitat within any diverted and/or re-established creek lines and retained water features;</li> <li>– habitat, feed and foraging resources for threatened fauna species; and</li> <li>– vegetation connectivity and wildlife corridors, as far as is reasonable and feasible</li> </ul> </li> </ul> </td> </tr> <tr> <td>Final Landform</td> <td> <ul style="list-style-type: none"> <li>• Stable and sustainable for the intended post-mining land use/s</li> <li>• Integrated with surrounding natural landforms and other mine rehabilitated landforms, to the greatest extent practicable</li> <li>• Incorporate micro-relief and drainage features that mimic natural topography and mitigate erosion, to the greatest extent practicable</li> </ul> </td> </tr> <tr> <td>Rehabilitation materials</td> <td> <ul style="list-style-type: none"> <li>• Soil and vegetative materials from areas disturbed under this consent (including topsoils, substrates and seeds) are recovered, managed and used as rehabilitation resources</li> </ul> </td> </tr> <tr> <td>Surface facilities sites</td> <td> <ul style="list-style-type: none"> <li>• To be decommissioned and removed, unless the Resources Regulator agrees otherwise</li> <li>• All surface facilities sites are to be revegetated with suitable local native plant species to a landform consistent with the surrounding environment</li> </ul> </td> </tr> </tbody> </table> | Feature           | Objective         | All areas of the site affected by the development  | <ul style="list-style-type: none"> <li>• Safe, stable and non-polluting</li> <li>• Fit for the intended post-mining land use/s</li> <li>• Establish the final landform and post-mining land use/s as soon as practicable after cessation of mining operations</li> <li>• Minimise post-mining environmental impacts</li> </ul> | Areas proposed for native ecosystem re-establishment | <ul style="list-style-type: none"> <li>• Establish/restore self-sustaining native woodland ecosystems</li> <li>• Establish local plant community types</li> <li>• Establish:               <ul style="list-style-type: none"> <li>– riparian habitat within any diverted and/or re-established creek lines and retained water features;</li> <li>– habitat, feed and foraging resources for threatened fauna species; 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However, the following is noted in relation to rehabilitation:           <ul style="list-style-type: none"> <li>– Rehabilitation cost estimate (RCE): The RCE for the Dendrobium operations was reviewed during the reporting period. This RCE was provided as Appendix B to the FY21 Annual Review.</li> <li>– Progressive rehabilitation: Legacy sites rehabilitated were either not within the CCL 768 boundary or had a very small footprint (i.e. Summit Park Switchyard, Mt Keira [approximately 150 m<sup>2</sup> hand-seeded with grass seed], O'Brien's Gap Switchyard [approximately 300 m<sup>2</sup> hand-seeded with grass seed], Greenhills Substation [approximately 2,000 m<sup>2</sup> hydro-mulched]).</li> <li>– Completion of rehabilitation: Completed rehabilitation areas increased by 0.12 hectares (ha), with 7.97 ha in financial year (FY) and 8.09 ha in FY21.</li> </ul> </li> <li>– <b>FY22:</b> Review of documentation indicates compliance with the requirements of this condition during FY22 is not relevant due to the introduction of Schedule 4, Condition 18A occurring after the FY21 reporting period. However, the following is noted in relation to rehabilitation:           <ul style="list-style-type: none"> <li>– RCE: The RCE for the Dendrobium operations was reviewed during the reporting period. This RCE was provided as Appendix B to the FY22 Annual Review.</li> <li>– Progressive rehabilitation: Investigations and studies were conducted into the removal of redundant infrastructure associated with O'Brien's Drift, particularly at the KVCLF.</li> <li>– Completion of rehabilitation: Completed rehabilitation areas increased by 32.91 hectares (ha), from 8.09 ha in FY21 to 41 ha in FY22, with completion of a rehabilitation campaign to demolish and rehabilitate redundant powerline circuits that traverse urban and rural residential areas generally located to the East of the Illawarra Escarpment State Conservation Area. To conclude this phase of rehabilitation work, a part lease relinquishment application for CCL 768, which was lodged with the NSW Resources Regulator. The report was accepted in July 2022.</li> </ul> </li> <li>– <b>FY23:</b> Review of documentation indicates compliance with the requirements of this condition during FY23, with the following noted:           <ul style="list-style-type: none"> <li>– Progressive rehabilitation: Vegetation removal and topsoil stripping occurred at the Ventilation No. 2 and 3 Shafts in preparation of gas management and ancillary infrastructure. This rehabilitation was sighted during the site inspection completed for the audit.</li> </ul> </li> </ul> <p>Land preparation works were undertaken for a land slip that occurred on the western boundary of the Dendrobium Pit Top; including soil nails, shotcrete and</p> |
| Feature  | Objective  |                   |                   |  |  |  |  |                |   |                          |  |                          |  |           |   |  |
| All areas of the site affected by the development    | <ul style="list-style-type: none"> <li>• Safe, stable and non-polluting</li> <li>• Fit for the intended post-mining land use/s</li> <li>• Establish the final landform and post-mining land use/s as soon as practicable after cessation of mining operations</li> <li>• Minimise post-mining environmental impacts</li> </ul>   |                   |                   |  |  |  |  |                |   |                          |  |                          |  |           |   |  |
| Areas proposed for native ecosystem re-establishment | <ul style="list-style-type: none"> <li>• Establish/restore self-sustaining native woodland ecosystems</li> <li>• Establish local plant community types</li> <li>• Establish:               <ul style="list-style-type: none"> <li>– riparian habitat within any diverted and/or re-established creek lines and retained water features;</li> <li>– habitat, feed and foraging resources for threatened fauna species; and</li> <li>– vegetation connectivity and wildlife corridors, as far as is reasonable and feasible</li> </ul> </li> </ul>   |                   |                   |  |  |  |  |                |   |                          |  |                          |  |           |   |  |
| Final Landform                                       | <ul style="list-style-type: none"> <li>• Stable and sustainable for the intended post-mining land use/s</li> <li>• Integrated with surrounding natural landforms and other mine rehabilitated landforms, to the greatest extent practicable</li> <li>• Incorporate micro-relief and drainage features that mimic natural topography and mitigate erosion, to the greatest extent practicable</li> </ul>  |                   |                   |  |  |  |  |                |   |                          |  |                          |  |           |   |  |
| Rehabilitation materials                             | <ul style="list-style-type: none"> <li>• Soil and vegetative materials from areas disturbed under this consent (including topsoils, substrates and seeds) are recovered, managed and used as rehabilitation resources</li> </ul>   |                   |                   |  |  |  |  |                |   |                          |  |                          |  |           |   |  |
| Surface facilities sites                             | <ul style="list-style-type: none"> <li>• To be decommissioned and removed, unless the Resources Regulator agrees otherwise</li> <li>• All surface facilities sites are to be revegetated with suitable local native plant species to a landform consistent with the surrounding environment</li> </ul>   |                   |                   |  |  |  |  |                |   |                          |  |                          |  |           |   |  |

| Condition #  | Details   | Compliance status | Relevant evidence   | Commentary   |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
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Works commenced in FY23 and were completed in FY24.</p> <p>Investigations and studies continued into the removal of redundant infrastructure associated with O'Brien's Drift. These included a Hazardous Building Materials Survey, engineering for belt removal and design work associated with the Endeavour Energy powerline relocation.</p> <p>A Hazardous Building Materials Survey was undertaken for the Corrimal No. 3 site and Cordeaux Pit Top redundant coal bins, which are planned to be removed in FY24/FY25.</p> <ul style="list-style-type: none"> <li>Rehabilitation monitoring: No rehabilitation monitoring was undertaken in the reporting period at surface facilities, with no recent rehabilitation has been undertaken.</li> <li>Completion of rehabilitation: Completion of progressive rehabilitation in relation to exploration drilling within CCL 768 focussing on sites drilling in FY22 and FY23, with rehabilitation completed at the cessation of drilling and/or monitoring. Rehabilitated areas are monitored for success over several years.</li> </ul> <p>With consideration to the above and the requirements of DA 60-03-2001 (i.e. Schedule 4, Condition 18A), which requires IMC to remediate physical damage to watercourses subject to subsidence impacts as soon as reasonably practicable, <b>OFI05</b> and <b>OFI06</b> have been identified.</p> |
| Feature  | Objective   |                   |   |  |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
|  | or the intended post mining land use(s)   |                   |   |  |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
| Portals and vent shafts of the development                       | <ul style="list-style-type: none"> <li>To be decommissioned and made safe and stable</li> <li>Retain habitat for threatened species (e.g. bats), where practicable</li> </ul>   |                   |   |  |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
| Watercourses subject to approved mine water discharges           | <ul style="list-style-type: none"> <li>Hydraulically and geomorphologically stable</li> <li>Aquatic ecology and riparian vegetation that is the same or better than prior to grant of this consent</li> </ul>   |                   |   |  |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
| Mine water discharges following mine closure (from any location) | <ul style="list-style-type: none"> <li>Negligible environmental consequence</li> </ul>  |                   |   |  |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
| Watercourses subject to subsidence impacts                       | <ul style="list-style-type: none"> <li>Remediate physical damage as soon as reasonably practicable, unless the environmental impacts of remediation exceed the environmental benefits</li> </ul>  |                   |   |  |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
| Water quality  | <ul style="list-style-type: none"> <li>Water retained on the site is fit for the intended post-mining land use/s</li> <li>Water management is consistent with the regional catchment management strategy</li> </ul>   |                   |   |  |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
| Built features damaged by mining operations                      | <ul style="list-style-type: none"> <li>Repair to pre-mining condition or equivalent unless the: <ul style="list-style-type: none"> <li>owner agrees otherwise; or</li> <li>damage is fully restored, repaired or compensated for under the <i>Coal Mine Subsidence Compensation Act 2017</i></li> </ul> </li> </ul>   |                   |   |  |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
| Cliffs, minor cliffs, rock face features and steep slopes        | <ul style="list-style-type: none"> <li>No additional risk to public safety compared to prior to mining</li> </ul>   |                   |   |  |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
| Community  | <ul style="list-style-type: none"> <li>Ensure public safety</li> <li>Minimise adverse socio-economic effects associated with mine closure</li> </ul>  |                   |   |  |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
|  | <b>Progressive Rehabilitation</b>   |                   |   |  |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
| 18B  | The Applicant must carry out the rehabilitation of the site progressively, that is, as soon as reasonably practicable following disturbance.  | Compliant         | <ul style="list-style-type: none"> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Dendrobium Colliery Annual Rehabilitation Report Friday 1 July 2022 to Friday 30 June 2023.</li> <li>Site interviews completed 9, 10 and 11 October 2023.</li> <li>Site inspection completed 9, 10 and 11 October 2023.</li> </ul> | <p>Review of relevant documentation indicates this condition was introduced due to Modification 9 to DA 60-3-2001, approved on 8 July 2022.</p> <p>Discussion in relation to progressive rehabilitation during the audit period is provided at Schedule 4, Condition 18A.</p> <p>Review of documentation indicates compliance with the requirements of this condition during FY23.</p>   |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
|  | <b>Landscape Management Plan</b>  |                   |   |  |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
| 19   | Deleted.  | N/A               | N/A   | N/A.   |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
|  | <b>Rehabilitation Management Plan</b>   |                   |   |  |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
| 20   | The Applicant must prepare a Rehabilitation Management Plan for the development, in accordance with the conditions imposed on the mining lease(s) associated with the development under the <i>Mining Act 1992</i> .  | Compliant         | <ul style="list-style-type: none"> <li>Rehabilitation Management Plan (RMP) (Rev 1.2, 30 June 2023).</li> <li>Forward Program Friday 1 July 2023 to Monday 30 June 2026.</li> </ul>   | <p>Review of documentation indicates compliance with the requirements of this condition, with the following noted:</p> <ul style="list-style-type: none"> <li>An RMP, including draft rehabilitation objectives and criteria, was submitted to the NSW Resources Regulator on 30 June 2022, in accordance with legislative rehabilitation reforms under the <i>Mining Act 1992</i>, through the Mining Amendment Regulation (Standard Conditions for Mining Leases – Rehabilitation) Regulation 2021.</li> <li>The RMP was revised 10 October 2022 to include requirements from, and remove reference to, the Landscape Management Plan. A further update was submitted on 30 June 2023 in relation to updates to rehabilitation objectives and final land-use rehabilitation plans following feedback from the NSW Resources Regulator. The objectives in Table 7 have been adopted into the RMP.</li> <li>A Forward Program from 1 July 2023 to Monday 30 June 2026 was sighted during the audit.</li> </ul> |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
|  | <b>Mine Closure Plan</b>  |                   |   |  |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |
| 21   | The Applicant must prepare a Mine Closure Plan to the satisfaction of the Secretary. The plan must: <p>(a) be prepared:</p> <p>(i) by a suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary;</p>   | Not triggered     | N/A.  | <p>Cessation of mining operations will not occur until 31 December 2030, with review of Schedule 4, Condition 21(b) indicating a Mine Closure Plan is not required to be submitted until at least 2 years prior to the planned cessation of mining.</p> <p>Therefore, this condition has not been triggered during the audit period.</p>   |   |  |   |  |   |  |  |  |  |               |   |   |   |   |   |           |  |  |  |  |

| Condition # | Details  | Compliance status | Relevant evidence   | Commentary  |
|-------------|--|-------------------|---|---|
|             | <p>(ii) in consultation with the Department, WaterNSW, DPE Water, Resources Regulator, WCC and (if requested by the Secretary) the Mining Panel;</p> <p>(iii) in accordance with any relevant Resources Regulator Guideline; and</p> <p>(b) be subject to peer review and submitted for approval at a date agreed by the Secretary, provided that this date is at least 2 years prior to the planned cessation of mining at the site;</p> <p>(c) include detailed consideration of best practice measures and emerging technologies to mitigate post mining greenhouse gas emissions from the mine, including consideration of how such measures will be integrated into the mine closure strategy;</p> <p>(d) include a stakeholder engagement plan to guide mine closure planning processes and outcomes;</p> <p>(e) investigate ways to minimise adverse socio-economic effects associated with mine closure;</p> <p>(f) contain a detailed mine closure strategy, which includes:</p> <p>(i) detailed consideration of all issues associated with sealing or not sealing mine entrances, with particular reference to groundwater re-pressurisation, developing hydraulic pressure heads within main headings and long-term emergence of mine waters within the Metropolitan Special Area and/or the Illawarra Escarpment;</p> <p>(ii) consideration of other underground mines hydraulically connected to Dendrobium Mine (including options regarding isolating those other mines);</p> <p>(iii) include details of any measures necessary to ensure that mine workings do not impact on stored waters or dams;</p> <p>(iv) consideration of the most up-to-date groundwater and surface water inflow modelling for Dendrobium Mine, including improved modelling of points of anticipated groundwater outflow;</p> <p>(v) a robust risk assessment that fully and objectively identifies the potential hazards associated with mine closure, the likelihood and consequences associated with these hazards materialising, the extent to which consequences can be controlled should the hazards materialise, and the residual risks after control measures have been put in place; and</p> <p>(vi) options for managing residual risks, such as ongoing mine water discharges and surface leakages of contaminated mine water, should the Dendrobium Mine not be able to be effectively sealed, and any requirement for water treatment prior to discharge; and</p> <p>(g) be fully reviewed and revised every three years following approval, unless the Secretary agrees otherwise.</p> <p>The Applicant must implement the Mine Closure Plan as approved by the Secretary.</p> <p>Notes:</p> <ul style="list-style-type: none"> <li>– The Mine Closure Plan should address all land impacted by the development.</li> </ul> <p>The Rehabilitation Plan and Mine Closure Plan require substantial integration to achieve all objectives for the rehabilitated site.</p> |                   |   | However, it is noted a Conceptual Site Closure Plan has been developed that generally meets these requirements and all requirements will be met closer to mine closure.   |
|             | <b>Bushfire Management Plan</b>  |                   |   |   |
| 22          | The Applicant must prepare and implement a Bushfire Management Plan for the site, with particular reference to the mining area, in consultation with WaterNSW and to the satisfaction of the Rural Fire Service.   | Compliant         | <ul style="list-style-type: none"> <li>– Bushfire Management Plan (Rev 7.1, 18 August 2021).</li> <li>– Site interviews completed 9, 10 and 11 October 2023.</li> </ul> | Review of relevant documentation verifies compliance with the requirements of this condition, with the following noted to have been undertaken in accordance with the Bushfire Management Plan during the audit period: <ul style="list-style-type: none"> <li>– Asset Protection Zone maintenance at surface facilities;</li> <li>– fire trail maintenance; and</li> <li>– installation of bushfire suppression sprays at the Dendrobium Pit Top.</li> </ul> |
|             | <b>Photographic Archival Recording</b>   |                   |   |   |
| 22A         | The Applicant must undertake photographic archival recording of significant built and landscape elements affected by Modification 8 prior to the commencement, during the works and after the completion of works, in accordance with the NSW Heritage Division publications 'How to prepare archival records of heritage items and Photographic Recording of Heritage Items using Film or Digital Capture'. A copy of these archival recordings must be provided to the Heritage Council of NSW and WCC.  | Not triggered     | N/A.  | Completed prior to the audit period. Archival recording was undertaken prior to, during and after the completion of works. The report dated 30 March 2020 was submitted to the WCC and Heritage NSW.  |
|             | <b>Unexpected Historical Archaeological Relics</b>   |                   |   |   |
| 22B         | In the event that unexpected archaeological artefacts are uncovered during ground disturbing works, the Applicant must ensure work ceases in the subject area and a suitably trained archaeologist should attend the site to inspect the find. Should archaeological material be identified as having heritage significance, the Applicant must obtain any necessary further approvals before works can proceed.   | Not triggered     | <ul style="list-style-type: none"> <li>– Annual Reviews for FY21, FY22, and FY23.</li> <li>– Site interviews completed 9, 10 and 11 October 2023.</li> </ul>            | Review of relevant documentation and conduct of site interviews indicates no unexpected archaeological artefacts were identified during ground disturbing works.  |

| Condition # | Details   | Compliance status | Relevant evidence   | Commentary   |
|-------------|---|-------------------|---|--|
|             | <b>TRANSPORT</b>  |                   |   |  |
|             | <b>Rail Transport of Coal</b>   |                   |   |  |
| 23          | The Applicant must ensure that trains do not travel on the Kemira Valley rail line:<br>(a) between 12 midnight and 6 am, until 29 April 2010; and<br>(b) between 11 pm and 6 am, from 30 April 2010<br>unless written approval is obtained from EPA for emergency use of the rail line.   | Compliant         | <ul style="list-style-type: none"> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Training running reports.</li> </ul>   | Review of relevant documentation and conduct of site interviews indicates no emergency use of the rail line has occurred during the audit period, with the rail curfew times adhered to.   |
| 24          | The Applicant must record the:<br>(a) date and time of each train movement on the Kemira Valley rail line; and<br>(b) amount of coal transported from the KVCLF each year and include a comprehensive summary and discussion of the results of this monitoring in each Annual Review.   | Compliant         | <ul style="list-style-type: none"> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Training running reports.</li> </ul>   | Review of relevant documentation indicates this data is recorded via the Logistics KPI Report and also on Pacific National Run Sheets, with a sample of this data sighted during conduct of the audit.<br>Review of documentation verifies compliance with the requirements of this condition.   |
|             | <b>Road Transport</b>   |                   |   |  |
| 25          | The Applicant must prepare a Traffic Management Plan for the development to the satisfaction of the Secretary. This plan must:<br>(a) be submitted to the Secretary for approval by 30 April 2009;<br>(b) be prepared in consultation with the WCC, Mt Kembla Primary School and the CCC;<br>(c) include traffic control measures for truck movements through residential areas, including Stones Road and its intersection with Cordeaux Road;<br>(d) provide that mine shift changeover times and deliveries by heavy vehicle to the pit top facilities and KVCLF do not conflict with pick-up and drop-off times for Mt Kembla Primary School students;<br>(e) provide heavy vehicle speed limits;<br>(f) include a Driver's Code of Conduct to be applied to the Applicant's employees and contractors working at the development and measures for the enforcement of this code; and<br>(g) include procedures for regular monitoring of compliance with this plan.<br>The Applicant must implement the Traffic Management Plan as approved by the Secretary. | Compliant         | <ul style="list-style-type: none"> <li>Traffic Management Plan (TMP) (Rev 6.0, April 2021)</li> <li>DPE approval of revised TMP, dated 29/05/21.</li> <li>Consultation with Wollongong City Council (received 29/04/21), Mt Kembla Public School (received 19/04/21), and the CCC (received 28/04/21).</li> <li>Notifications to residents dated 10 March 2023 and 10 August 2023.</li> <li>Driver's Code of Conduct.</li> <li>Complaints records.</li> </ul> | Review of relevant documentation verifies compliance with the requirements of this condition, with the most current version of the TMP, which was revised during the audit period in consultation with relevant stakeholders identified in Schedule 4, Condition 25(b) and approved by DPE on 29 April 2021.   |
|             | <b>Road Maintenance</b>   |                   |   |  |
| 26          | The Applicant must enter into an agreement with WaterNSW, to the satisfaction of the Secretary, to share the reasonable costs of maintenance of all access roads, bridges and creek crossings located on land controlled by WaterNSW and used by the Applicant.   | Not triggered     | N/A.  | This condition was verified as part of the previous audits and conditions have not changed during this audit period.   |
| 27          | The Applicant must establish an agreement with WCC to share the reasonable costs of maintenance of Stones Road for the life of the development. Prior to decommissioning of the mine, Stones Road must be inspected, to the satisfaction of WCC, and the road restored by the Applicant to a standard not less than its condition prior to the development's approval. If roadworks are not carried out by the Applicant within one month of being informed by WCC that these works are required under the maintenance agreement, WCC shall be entitled to carry out such maintenance work at the Applicant's cost. Any dispute over implementation of this condition is to be referred to the Secretary for resolution.  | Compliant         | <ul style="list-style-type: none"> <li>Executed deed with WCC dated 28 August 2019.</li> <li>Site interviews completed 9, 10 and 11 October 2023.</li> </ul>  | Review of relevant documentation verifies compliance with the requirements of this condition, with interviews with IMC indicating maintenance of Stones Road funded and undertaken by IMC. The term of executed deed is until 28 August 2026.  |
|             | <b>VISUAL</b>   |                   |   |  |
|             | <b>Visual Amenity</b>   |                   |   |  |
| 28          | The Applicant must minimise the visual impacts of the surface facilities to the satisfaction of the Secretary.  | Compliant         | <ul style="list-style-type: none"> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Lighting and Visual Amenity Management Plan (LVAMP) (Rev 8.1, 15 May 2023).</li> <li>Complaints records.</li> </ul>  | Review of documentation indicates compliance with the requirements of this condition, with:<br><ul style="list-style-type: none"> <li>a vegetative screen has been established and is maintained around IMC operations;</li> <li>lighting at Dendrobium Mine managed in accordance with the LVAMP, (with the most recent version dated 15 May 2023), with the vegetative screen limit stray lighting impacts;</li> <li>lighting at the KVCLF site is generally managed by natural topography of the valley, with lighting also turned off during the night-time period where work is not being carried out;</li> <li>completion of a lighting survey conducted in FY22 at Dendrobium Mine and the KVCLF site, which concluded lighting meets the requirements for Australian Standard AS 4282:2019 – Control of Obtrusive Effects and Outdoor Lighting; and</li> </ul> |

| Condition # | Details   | Compliance status | Relevant evidence   | Commentary  |
|-------------|---|-------------------|---|---|
|             |   |                   |   | <ul style="list-style-type: none"> <li>only one complaint received during FY22 in relation to visual amenity / lighting issues.</li> </ul>  |
|             | <b>Lighting Emissions</b>   |                   |   |   |
| 29          | <p>The Applicant must:</p> <ul style="list-style-type: none"> <li>(a) ensure that all external lighting associated with the surface facilities complies with Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting;</li> <li>(b) take all practicable measures to mitigate off-site lighting impacts from the surface facilities;</li> <li>(c) ensure that light emitted from headlights of locomotives operating on the Kemira Valley rail line are screened from residences; and</li> <li>(d) report on the effectiveness of lighting emission controls in the Annual Review, to the satisfaction of the Secretary.</li> </ul> | Compliant         | <ul style="list-style-type: none"> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>LVAMP (Rev 8.1, 15 May 2023).</li> <li>Complaints records.</li> </ul>  | Review of documentation indicates compliance with the requirements of this condition, with discussion provided at Schedule 4, Condition 28.   |
|             | <b>WASTE</b>  |                   |   |   |
| 30          | <p>The Applicant must:</p> <ul style="list-style-type: none"> <li>(a) monitor the amount of waste generated by the development;</li> <li>(b) investigate ways to reuse, recycle, or minimise this waste;</li> <li>(c) implement reasonable and feasible measures to minimise this waste; and</li> <li>(d) report on waste management and minimisation in the Annual Review, to the satisfaction of the Secretary.</li> </ul>  | Compliant         | <ul style="list-style-type: none"> <li>Waste Management Plan (Rev 7.0, July 2023).</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>Site inspection completed 9, 10 and 11 October 2023.</li> <li>Complaints records.</li> <li>South32 Monthly Waste Figures spreadsheet.</li> </ul> | <p>Review of documentation indicates compliance with the requirements of this condition, with the following identified:</p> <ul style="list-style-type: none"> <li>oil sumps and traps are in place and are periodically inspected by site personnel and emptied as required by a licensed contractor at Dendrobium Mine;</li> <li>hydraulic oil is separated from oily water volumes via a licensed contractor;</li> <li>FY21: <ul style="list-style-type: none"> <li>695.8 tonnes of general waste was produced, of which approximately 85% (594.3 tonnes) was diverted for recycling at a Cleanaway and ResourceCo joint venture Resource Recovery Facility;</li> <li>approximately 65% total waste was recycled off-site during the reporting period;</li> <li>IMC diverted approximately 0.858 Mt of coal wash from the DCPD for beneficial uses (i.e. as an engineered fill in housing developments and Roads and Maritime Services (RMS) road infrastructure projects, for the development of arterial and agricultural roads, and under an Operational Purpose Deduction [OPD] to improve a stockpile design at WCCPP); and</li> <li>Finalisation of the IMC Coal Wash Road Base Project was finalised in FY21, which utilises coal wash with other recycled materials such as fly ash to produce a material suitable for a variety of applications. IMC aligned with three universities (University of Wollongong, University of Sydney and University of Newcastle) and two other industry partners (RMS and Douglas Partners) and was successful in securing an Australian Research Council Linkage Project grant of \$590k to conduct research into the long-term performance of this material in roads and railways.</li> </ul> </li> <li>FY22: <ul style="list-style-type: none"> <li>880.92 tonnes of general waste was produced, of which approximately 87% (781.03 tonnes) was diverted for recycling at a Cleanaway and ResourceCo joint venture Resource Recovery Facility;</li> <li>approximately 69% of total waste was recycled off-site during the reporting period;</li> <li>IMC diverted approximately 0.28 Mt of coal wash from the DCPD for beneficial uses (i.e. as an engineered fill in housing developments and for the development of arterial and agricultural roads, and a further 0.258 Mt under OPDs for engineering works development; and</li> <li>approximately 233 kt of coal wash was exported to India as a low-grade thermal coal. The product is used for power generation and the production of cement after blending with high calorific value thermal coal.</li> </ul> </li> <li>FY23: <ul style="list-style-type: none"> <li>951.9 tonnes of general waste was produced, of which approximately 70% (666.5 tonnes) was diverted for recycling at a Cleanaway and ResourceCo joint venture Resource Recovery Facility;</li> <li>approximately 77% of total waste was recycled off-site during the reporting period;</li> </ul> </li> </ul> |

| Condition #  | Details  | Compliance status | Relevant evidence  | Commentary   |  |  |    |                        |  |                             |    |                           |    |           |  |   |
|--|--|-------------------|--|--|--|--|----|------------------------|--|-----------------------------|----|---------------------------|----|-----------|--|---|
|  |  |                   |  | <ul style="list-style-type: none"> <li>– IMC diverted approximately 0.42 Mt of coal wash from the DCPD for beneficial uses (i.e. as an engineered fill in housing developments and for the development of arterial and agricultural roads, and a further 0.08 Mt under OPDs for engineering works development), with over 7.5 Mt diverted since 2009;</li> <li>– approximately 225 kt of reprocessed coal wash was transported to PKCT for export as a low-grade thermal coal. The product is used for power generation and the production of cement after blending with high calorific value thermal coal; and</li> <li>– IMC supported the Australian Coal Industry Research Program Research Project C29016 Southern Coalfield Coal Washery Reject Characterisation and Classification, including management strategies for applications in Civil Engineering;</li> </ul> |  |  |    |                        |  |                             |    |                           |    |           |  |   |
|  | <b>BIODIVERSITY</b>  |                   |  |  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
|  | <b>Biodiversity Credit Requirements</b>  |                   |  |  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
| 31   | <p>Unless otherwise agreed by the Secretary, the Applicant must retire the biodiversity credits specified in Table 8, prior to commencing vegetation clearing associated with Modification 9. The retirement of credits must be carried out in consultation with BCS and in accordance with the Biodiversity Offsets Scheme of the BC Act.</p> <p><i>Table 8: Biodiversity Credit Requirements</i></p> <table border="1"> <thead> <tr> <th>Credit Type</th> <th>Credits Require</th> </tr> </thead> <tbody> <tr> <td><b>Ecosystem Credits</b></td> <td></td> </tr> <tr> <td>PCT 1083 - Red Bloodwood -scribbly gum heathy woodland on sandstone plateaux of the Sydney Basin Bioregion</td> <td>17</td> </tr> <tr> <td><b>Species Credits</b></td> <td></td> </tr> <tr> <td><i>Caladenia tessellata</i></td> <td>33</td> </tr> <tr> <td><i>Genoplesium baueri</i></td> <td>33</td> </tr> </tbody> </table> | Credit Type       | Credits Require  | <b>Ecosystem Credits</b>   |  | PCT 1083 - Red Bloodwood -scribbly gum heathy woodland on sandstone plateaux of the Sydney Basin Bioregion | 17 | <b>Species Credits</b> |  | <i>Caladenia tessellata</i> | 33 | <i>Genoplesium baueri</i> | 33 | Compliant | <ul style="list-style-type: none"> <li>– Statement confirming payment into the Biodiversity Conservation Fund for an offset obligation dated 20 September 2022.</li> <li>– Letter to BCS dated 20 January 2022.</li> </ul> | Evidence of payment into Biodiversity Conservation Fund and consultation with BCS observed as satisfactory. |
| Credit Type  | Credits Require  |                   |  |  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
| <b>Ecosystem Credits</b>   |  |                   |  |  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
| PCT 1083 - Red Bloodwood -scribbly gum heathy woodland on sandstone plateaux of the Sydney Basin Bioregion | 17   |                   |  |  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
| <b>Species Credits</b>   |  |                   |  |  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
| <i>Caladenia tessellata</i>  | 33   |                   |  |  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
| <i>Genoplesium baueri</i>  | 33   |                   |  |  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
|  | <b>SCHEDULE 5 SPECIFIC ENVIRONMENTAL CONDITIONS</b>  |                   |  |  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
|  | <b>OTHER SITE COMPONENTS</b>   |                   |  |  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
|  | <b>COAL WASHERY</b>  |                   |  |  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
|  | <b>Hot Gas Exhaust Stack Discharges</b>  |                   |  |  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
| 1  | <p>The Applicant must:</p> <p>(a) ensure that the concentration of pollutants discharged from the coal dryer hot gas exhaust complies with discharge limits set for the development in any EPL;</p> <p>(b) regularly monitor the concentration of pollutants discharged from the coal dryer hot gas exhaust; and</p> <p>(c) report on waste management and minimisation in the Annual Review, to the satisfaction of the Secretary.</p>  | Not triggered     | <ul style="list-style-type: none"> <li>– Site interviews completed 9, 10 and 11 October 2023.</li> <li>– Site inspection completed 9, 10 and 11 October 2023.</li> <li>– Annual Reviews for FY21, FY22, and FY23.</li> <li>– Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>– 14-day monitoring data reporting as available on the IMC website.</li> </ul> | Annual Reviews indicate that the coal dryer was not operating during the audit period.   |  |  |    |                        |  |                             |    |                           |    |           |  |   |
|  | <b>Fuel Source</b>   |                   |  |  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
| 2  | The Applicant must ensure the coal drying plant only uses blast furnace offgas or natural gas as fuel for the drier.   | Not triggered     | N/A.   | The coal dryer has not been commissioned during the audit period therefore this condition is not triggered.  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
|  | <b>WEST CLIFF COAL WASH EMPLACEMENT</b>  |                   |  |  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
|  | <b>Coal Washery Reject</b>   |                   |  |  |  |  |    |                        |  |                             |    |                           |    |           |  |   |
| 3  | <p>The Applicant must:</p> <p>(a) monitor the amount of coal washery reject emplaced in the West Cliff Coal Wash Emplacement;</p> <p>(b) investigate ways to reduce emplacement of coal washery reject at West Cliff, including beneficial use or improved disposal options; and</p>   | Note              | <ul style="list-style-type: none"> <li>– Bulli Seam Operations Conditions of Project Approval (PA) 08_0150.</li> </ul>   | PA 08_0150 for the Bulli Seam Operations Project has been granted and as such takes precedence, with the West Cliff Coal Wash Emplacement regulated under the Bulli Seam Operations' Approval (specifically Schedule 5, Condition 8 of PA 08_0150) and reported in the Appin Mine Annual Reviews.  |  |  |    |                        |  |                             |    |                           |    |           |  |   |

| Condition # | Details   | Compliance status | Relevant evidence   | Commentary   |
|-------------|---|-------------------|---|--|
|             | (c) report on these matters in the West Cliff AEMR, to the satisfaction of the Secretary.   |                   | – Annual Reviews for FY21, FY22, and FY23.  | Per Schedule 5, Condition 8 of this consent, Conditions 3 to 7 of Schedule 5 have ceased to have force.  |
|             | <b>Pollution Reduction Program</b>  |                   |   |  |
| 4           | The Applicant must develop with EPA a new Pollution Reduction Program (PRP) to be incorporated into the West Cliff Colliery's EPL. Subject to the satisfaction of EPA, the PRP must:<br>(a) include investigation, trial and implementation of appropriate strategies, technologies or works to achieve agreed water quality discharge criteria for licensed discharges from the West Cliff Colliery site with particular reference to salinity; and<br>(b) cover a period of not less than five years.   | Note              | – Bulli Seam Operations Conditions of PA 08_0150.<br>– Annual Reviews for FY21, FY22, and FY23. | PA 08_0150 for the Bulli Seam Operations Project has been granted and as such takes precedence, with the West Cliff Coal Wash Emplacement regulated under the Bulli Seam Operations' Approval (specifically Schedule 5, Condition 8 of PA 08_0150) and reported in the Appin Mine Annual Reviews.<br>Per Schedule 5, Condition 8 of this consent, Conditions 3 to 7 of Schedule 5 have ceased to have force.   |
|             | <b>Water Quality Monitoring Program</b>   |                   |   |  |
| 5           | The Applicant must review its water quality monitoring program for the West Cliff Mine in consultation with EPA and DPE Water and to the satisfaction of the Secretary.   | Note              | – Bulli Seam Operations Conditions of PA 08_0150.<br>– Annual Reviews for FY21, FY22, and FY23. | PA 08_0150 for the Bulli Seam Operations Project has been granted and as such takes precedence, with the West Cliff Coal Wash Emplacement regulated under the Bulli Seam Operations' Approval (specifically Schedule 5, Condition 8 of PA 08_0150) and reported in the Appin Mine Annual Reviews.<br>Per Schedule 5, Condition 8 of this consent, Conditions 3 to 7 of Schedule 5 have ceased to have force.   |
|             | <b>Brennans Creek Diversion Bypass Rehabilitation Plan</b>  |                   |   |  |
| 6           | The Applicant must, by 30 June 2009, develop a Brennans Creek Diversion Bypass Rehabilitation Plan in consultation with BCS, DPE Water and Resources Regulator and to the satisfaction of the Secretary.  | Note              | – Bulli Seam Operations Conditions of PA 08_0150.<br>– Annual Reviews for FY21, FY22, and FY23. | PA 08_0150 for the Bulli Seam Operations Project has been granted and as such takes precedence, with the West Cliff Coal Wash Emplacement regulated under the Bulli Seam Operations' Approval (specifically Schedule 5, Condition 8 of PA 08_0150) and reported in the Appin Mine Annual Reviews.<br>Per Schedule 5, Condition 8 of this consent, Conditions 3 to 7 of Schedule 5 have ceased to have force.   |
|             | <b>General Management of the Emplacement</b>  |                   |   |  |
| 7           | Subject to condition 2 of schedule 2 and conditions 3- 6 above, the Applicant must monitor and manage the West Cliff Coal Wash Emplacement as part of the Environmental Management Plan for the West Cliff Mine. Monitoring and management of the Emplacement must be reported within the West Cliff AEMR, rather than the Annual Review for this development.  | Note              | – Bulli Seam Operations Conditions of PA 08_0150.<br>– Annual Reviews for FY21, FY22, and FY23. | PA 08_0150 for the Bulli Seam Operations Project has been granted and as such takes precedence, with the West Cliff Coal Wash Emplacement regulated under the Bulli Seam Operations' Approval (specifically Schedule 5, Condition 8 of PA 08_0150) and reported in the Appin Mine Annual Reviews.<br>Per Schedule 5, Condition 8 of this consent, Conditions 3 to 7 of Schedule 5 have ceased to have force.   |
| 8           | All references in this consent (including conditions 3 – 7 of this schedule and Appendix 3) that have direct application to the West Cliff Coal Wash Emplacement shall cease to have force and effect subsequent to the grant of any project approval under Part 3A of the Environmental Planning & Assessment Act 1979 which includes the West Cliff Colliery and the West Cliff Coal Wash Emplacement Area.   | Note              | – Bulli Seam Operations Conditions of PA 08_0150.<br>– Annual Reviews for FY21, FY22, and FY23. | PA 08_0150 for the Bulli Seam Operations Project has been granted and as such takes precedence, with the West Cliff Coal Wash Emplacement regulated under the Bulli Seam Operations' Approval (specifically Schedule 5, Condition 8 of PA 08_0150) and reported in the Appin Mine Annual Reviews.<br>Per Schedule 5, Condition 8 of this consent, Conditions 3 to 7 of Schedule 5 have ceased to have force.   |
|             | <b>SCHEDULE 6 SPECIFIC ENVIRONMENTAL CONDITIONS</b>   |                   |   |  |
|             | <b>GREENHOUSE GASES &amp; ENERGY EFFICIENCY</b>   |                   |   |  |
| 1           | The Applicant must prepare a Greenhouse and Energy Efficiency Plan for the development. This plan must:<br>(a) be prepared in consultation with EPA and generally in accordance with the Guidelines for Energy Savings Action Plans (DEUS 2005, or its latest version);<br>(b) be submitted to the Secretary by 30 April 2009 for approval;<br>(c) include a program to monitor greenhouse gas emissions and energy use generated by the development;<br>(d) include a framework for investigating and implementing measures to reduce greenhouse gas emissions and energy use at the development;<br>(e) include a research program to inform the continuous improvement of the greenhouse gas minimisation measures at the development;<br>(f) describe how the performance of these measures would be monitored over time; and<br>(g) report on the development's greenhouse gas emissions and minimisation measures in the Annual Review, to the satisfaction of the Secretary. | Compliant         | – AQGHGMP (Rev 9, August 2023).<br>– Annual Reviews for FY21, FY22, and FY23.                   | The Greenhouse and Energy Efficiency Plan is contained with the approved AQGHGMP (Rev 9, August 2023). The AQGHGMP was developed in accordance with this condition. Greenhouse gas emission and minimisation measures are reported in the Annual Reviews.<br>Greenhouse gas emissions are monitored and reported as part of the NGRS. The main sources being monitored include electricity, diesel, and fugitive methane emissions.<br>A Decarbonisation Strategy for IMC is in place and is being progressively implemented and reviewed. |

| Condition #  | Details   | Compliance status | Relevant evidence  | Commentary  |
|--|---|-------------------|--|---|
|  | The Applicant must implement the Greenhouse and Energy Efficiency Plan as approved by the Secretary.  |                   |  |   |
|  | Note: The Applicant may consider the Dendrobium Mine's greenhouse gas minimisation measures within its overall greenhouse gas minimisation measures across its Southern Coalfield mines and related operations.   | Note              | N/A.   | N/A.  |
| 2  | The Applicant must implement all reasonable and feasible measures to minimise the greenhouse gas emissions from the development to the satisfaction of the Secretary.   | Compliant         | <ul style="list-style-type: none"> <li>AQGHGMP (Rev 9, August 2023).</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> </ul>  | Opportunities to upgrade equipment to improve performance and efficiency are considered by IMC as part of an item's design lifecycle and maintenance cycle. Energy efficiency and cost effectiveness are evaluated as part of the Project reviews and Project justification processes, where opportunities arise.   |
| <b>SCHEDULE 7 - ADDITIONAL PROCEDURES FOR AIR QUALITY AND NOISE MANAGEMENT</b> |   |                   |  |   |
| <b>NOTIFICATION OF LANDOWNERS</b>  |   |                   |  |   |
| 1  | If the results of monitoring required in Schedule 4 identify that the impacts generated by the development are greater than the relevant impact assessment criteria in Schedule 4, except where this is predicted in the documents listed in condition 2 of schedule 2 or where a negotiated agreement has been entered into in relation to that impact, then the Applicant must notify the Secretary and the affected landowners and/or existing or future tenants (including tenants of mine-owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the criteria in Schedule 4.   | Compliant         | <ul style="list-style-type: none"> <li>Site interviews completed 9 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Email correspondence dated 1 July 2022, indicating notification had been provided on 21 June 2022 for noise exceedances, with feedback from one receiver.</li> </ul> | <p><b>2020 IEA Recommendation:</b><br/>Provide monitoring results proactively to the resident prior to release to the website.</p> <p><b>2023 IEA Findings:</b><br/><u>Status of 2020 IEA Recommendation:</u><br/>Review of relevant evidence indicates this condition has not been triggered during the audit period, and need to provide monitoring results proactively to the resident prior to release to the website has not been required.</p> <p><u>2023 IEA Findings</u><br/>Review of relevant evidence indicates this condition has not been triggered during the audit period.</p> |
| <b>INDEPENDENT REVIEW</b>  |   |                   |  |   |
| 2  | If a landowner considers the development to be exceeding the impact assessment criteria in schedule 4, except where this is predicted in the EA, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land.<br><br>If the Secretary is satisfied that an independent review is warranted, the Applicant must within 2 months of the Secretary's decision:<br><br>(a) consult with the landowner to determine his/her concerns;<br>(b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to conduct monitoring on the land, to:<br><ul style="list-style-type: none"> <li>determine whether the development is complying with the relevant impact assessment criteria in schedule 4; and</li> <li>identify the source(s) and scale of any impact on the land, and the development's contribution to this impact; and</li> </ul> (c) give the Secretary and landowner a copy of the independent review. | Not triggered     | <ul style="list-style-type: none"> <li>Site interviews completed 9 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> </ul>  | Review of relevant evidence indicates this condition has not been triggered during the audit period.  |
| 3  | If the independent review determines that the development is complying with the relevant impact assessment criteria in schedule 4, then the Applicant may discontinue the independent review with the approval of the Secretary. If the landowner disputes the results of the independent review then either the Applicant or the landowner may refer the matter to the Secretary for resolution.   | Not triggered     | <ul style="list-style-type: none"> <li>Site interviews completed 9 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> </ul>  | Review of relevant evidence indicates this condition has not been triggered during the audit period.  |
| 4  | If the independent review determines that the development is not complying with the relevant impact assessment criteria in Schedule 4, and that the development is primarily responsible for this noncompliance, then the Applicant must:<br><br>(a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the development complies with the relevant criteria and conduct further monitoring to determine whether these measures ensure compliance; or<br>(b) secure a written agreement with the landowner to allow exceedances of the relevant criteria; or<br>(c) offer to acquire all or part of the landowner's land in accordance with the procedures in conditions 6-8 below to the satisfaction of the Secretary.  | Not triggered     | <ul style="list-style-type: none"> <li>Site interviews completed 9 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> </ul>  | Review of relevant evidence indicates this condition has not been triggered during the audit period.  |
| 5  | If further monitoring under condition 4(a) determines that the development is complying with the relevant impact assessment criteria, then the Applicant may discontinue the independent review with the approval of the Secretary.<br><br>If further monitoring under condition 4(a) determines that measures implemented under that condition have not achieved compliance with the impact assessment criteria in schedule 4, and the Applicant   | Not triggered     | <ul style="list-style-type: none"> <li>Site interviews completed 9 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> </ul>  | Review of relevant evidence indicates this condition has not been triggered during the audit period.  |



| Condition # | Details  | Compliance status | Relevant evidence   | Commentary   |
|-------------|--|-------------------|---|--|
|             | cannot secure a written agreement with the landowner under condition 4(b) to allow these exceedances, then the Applicant must, upon receiving a written request from the landowner, acquire all or part of the landowner's land in accordance with the procedures in conditions 6-8 below.   |                   |   |  |
|             | <b>LAND ACQUISITION</b>  |                   |   |  |
| 6           | <p>Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant must make a binding written offer to the landowner based on:</p> <p>(a) the current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the development the subject of the development application, having regard to the:</p> <ul style="list-style-type: none"> <li>existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and</li> <li>presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the 'additional noise mitigation measures' in condition 6 of schedule 4;</li> </ul> <p>(b) the reasonable costs associated with:</p> <ul style="list-style-type: none"> <li>relocating within the local government areas of the affected Councils, or to any other local government area determined by the Secretary;</li> <li>obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and</li> </ul> <p>(c) reasonable compensation for any disturbance caused by the land acquisition process.</p> <p>If, within 28 days of the Applicant making this offer, the Applicant and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution.</p> <p>Upon receiving such a referral, the Secretary must request the President of the NSW Division of the Australian Property Institute (the API) to appoint a qualified independent valuer to:</p> <ul style="list-style-type: none"> <li>consider submissions from both parties;</li> <li>establish a fair market valuation for the land and determine reasonable costs and compensation for the acquisition, in accordance with paragraphs (a)-(c) above and any guidance or guidelines that the Secretary may prepare relating to this condition; and</li> <li>propose any appropriate fair and reasonable terms of acquisition.</li> </ul> <p>The appointed valuer is to provide a full report and explanation of their valuation, determinations and proposed terms of acquisition to the Secretary, the Applicant and the landowner. The Secretary must consider the report and decide whether the valuation, determinations and any proposed terms of acquisition are fair and reasonable and advise the parties accordingly.</p> <p>Within 14 days of receiving the Secretary's decision that the independent valuer's report is fair and reasonable, the Applicant must make a written offer to purchase the land at a price and according to terms not less than set out in the independent valuer's report.</p> <p>If the Secretary is of the opinion that the valuation and/or determination is not fair and/or reasonable, they must give notice to the parties that a further independent valuation and determination will be undertaken in accordance with this condition and duly request a further appointment by the API.</p> <p>If the landowner refuses to accept within 6 months a written offer duly made by the Applicant under this condition, then the Applicant's obligations to acquire the land shall cease, unless otherwise agreed by the Secretary.</p> | Not triggered     | <ul style="list-style-type: none"> <li>Site interviews completed 9 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> </ul> | Review of relevant evidence indicates this condition has not been triggered during the audit period. |
| 7           | The Applicant must bear the full costs of any independent valuer's valuation, determination, and report.   | Not triggered     | <ul style="list-style-type: none"> <li>Site interviews completed 9 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> </ul> | Review of relevant evidence indicates this condition has not been triggered during the audit period. |
| 8           | If the Applicant and landowner agree that only part of the land shall be acquired, then the Applicant must pay all reasonable costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of the plan at the Office of the Registrar-General.   | Not triggered     | <ul style="list-style-type: none"> <li>Site interviews completed 9 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> </ul> | Review of relevant evidence indicates this condition has not been triggered during the audit period. |

| Condition # | Details   | Compliance status | Relevant evidence   | Commentary  |
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|             | <b>SCHEDULE 8 - ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING</b>  |                   |   |   |
|             | <b>ENVIRONMENTAL MANAGEMENT STRATEGY</b>  |                   |   |   |
| 1           | <p>The Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must be submitted to the Secretary for approval by 30 April 2009, and:</p> <p>(a) provide the strategic framework for environmental management of the development;</p> <p>(b) identify the statutory requirements that apply to the development;</p> <p>(c) describe in general how the environmental performance of the development would be monitored and managed for the:</p> <ul style="list-style-type: none"> <li>- mining area;</li> <li>- surface facilities;</li> <li>- other site components; and</li> <li>- extended site;</li> </ul> <p>(d) describe the procedures that would be implemented to:</p> <ul style="list-style-type: none"> <li>- keep the local community and relevant agencies informed about the operation and environmental performance of the development;</li> <li>- receive, handle, respond to, and record complaints;</li> <li>- resolve any disputes that may arise during the course of the development;</li> <li>- respond to any non-compliance;</li> <li>- manage cumulative impacts; and</li> <li>- respond to emergencies;</li> </ul> <p>(e) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development; and</p> <p>(f) include:</p> <ul style="list-style-type: none"> <li>- references to any strategies, plans and programs approved under the conditions of this consent; and</li> <li>- a clear plan depicting all the monitoring to be carried out under the conditions of this consent.</li> </ul> <p>The Environmental Management Strategy approved by the Secretary must be implemented.</p> | Compliant         | <ul style="list-style-type: none"> <li>- Environmental Management Strategy (EMS) (Rev 6.0, July 2021).</li> <li>- DPE approval of revised EMS dated 1 August 2023.</li> </ul>   | <p>Review of documentation indicates compliance with the requirements of this condition, with the requirements addressed in the EMS as follows:</p> <ul style="list-style-type: none"> <li>- Schedule 8, Condition 1(a) – Figure 1 (Environmental Management Framework);</li> <li>- Schedule 8, Condition 1(b) – Section 3 (Legislation and Planning);</li> <li>- Schedule 8, Condition 1(c) – Section 4 (Environmental Management);</li> <li>- Schedule 8, Condition 1(d) – Sections 5 (Communications), 6 (Complaints, Non-Compliance and Risk Management), and 7 (Emergency Response);</li> <li>- Schedule 8, Condition 1(e) – Section 2 (Roles and Responsibilities); and</li> <li>- Schedule 8, Condition 1(f) – Figure 1 (Environmental Management Framework); Section 11 (References), and Section 12 (Plans), including Plans 2 (Dendrobium Surface Monitoring Locations), 3 (Cordeaux Colliery Surface Monitoring Locations), and 4 (Dendrobium Mining Areas Monitoring Locations).</li> </ul>   |
|             | <b>Management Plan Requirements</b>   |                   |   |   |
| 2           | <p>Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:</p> <p>(a) a summary of relevant background or baseline data;</p> <p>(b) details of:</p> <p>(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);</p> <p>(ii) any relevant limits or performance measures and criteria; and</p> <p>(iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;</p> <p>(c) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;</p> <p>(d) a program to monitor and report on the:</p> <p>(i) impacts and environmental performance of the development; and</p> <p>(ii) effectiveness of the management measures set out pursuant to condition 2(c);</p> <p>(e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;</p> <p>(f) a program to investigate and implement ways to improve the environmental performance of the development over time;</p> <p>(g) a protocol for managing and reporting any:</p> <p>(i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria);</p> <p>(ii) complaint;</p>   | Compliant         | <ul style="list-style-type: none"> <li>- Management plan Review Log spreadsheet tracking edits as recently as August 2023.</li> <li>- Environmental Documents spreadsheet tracking current document dates and identifying next review dates.</li> <li>- WCWMS (Rev E, May 2021).</li> <li>- WMP (Rev 8.0, 4 August 2023).</li> <li>- WIMMCPs: <ul style="list-style-type: none"> <li>- LW 19 (Area 3A) (February 2021);</li> <li>- LW 19A (Area 3A) (September 2022);</li> <li>- LW 21 (Area 3C) (September 2021); and</li> <li>- LW 22 &amp; 23 (Area 3C) (September 2021).</li> </ul> </li> <li>- SIMMCPs: <ul style="list-style-type: none"> <li>- LW 19 (Area 3A) (February 2021);</li> </ul> </li> </ul> | <p><b>2020 IEA Recommendation:</b><br/>R06: Include a contingency plan in the Air Quality Management Plan</p> <p><b>2023 IEA Findings:</b><br/><u>Status of 2020 IEA Recommendation:</u><br/>The AQGHGMP was reviewed, updated and approved by DPE 8 June 2021, and included a section (7.2.2) on adaptive management.</p> <p><u>2023 IEA Findings</u><br/>Review of relevant documentation verifies compliance with the requirements of this condition.</p> <ul style="list-style-type: none"> <li>- TMP addresses (a), (b), (c), (d), (e), (f) and (g);</li> <li>- WMP addresses (a), (b), (c), (d), (e), (f) and (g);</li> <li>- ACHMPs address (a), (b), (c), (d), (e), (f) and (g);</li> <li>- Waste Management Plan addresses (a), (b), (c), (d), (e), (f) and (g);</li> <li>- Bushfire Management Plan addresses (a), (b), (c), (d), (e), (f) and (g);</li> <li>- LVAMP addresses (a), (b), (c), (d), (e), (f) and (g);</li> <li>- AQGHGMP addresses (a), (b), (c), (d), (e), (f) and (g);</li> <li>- NMP addresses (a), (b), (c), (d), (e), (f) and (g).</li> </ul> <p>This notwithstanding, the <b>OFI07</b> has been identified:</p> <p><b>OFI07: Amend the NMP as follows:</b></p> <ul style="list-style-type: none"> <li>- Section 3.5 Guidelines and Standards to include reference to Approved Methods for the Measurement and Analysis of Environmental Noise in NSW (EPA, 2022); and</li> </ul> |

| Condition # | Details   | Compliance status | Relevant evidence  | Commentary  |
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|             | (iii) failure to comply with statutory requirements; and<br>(h) a protocol for periodic review of the plan. |                   | <ul style="list-style-type: none"> <li>- LW 19A (Area 3A) (September 2022);</li> <li>- LW 21 (Area 3C) (September 2021); and</li> <li>- LW 21 (Area 3C) (September 2021).</li> <li>- SMPs: <ul style="list-style-type: none"> <li>- LW 18 (Area 3B) (November 2020);</li> <li>- LW 19 (Area 3A) (March 2021);</li> <li>- LW 19A (Area 3A) (September 2022); and</li> <li>- LW 22 &amp; 23 (Area 3C) (September 2021).</li> </ul> </li> <li>- NMP (August 2022).</li> <li>- AQGHGMP (August 2023).</li> <li>- Bushfire Management Plan (Rev 7.1, 18 August 2021).</li> <li>- Traffic Management Plan (Rev 6.0, April 2021).</li> <li>- LVAMP (Rev 8.1, 15 May 2023).</li> <li>- Waste Management Plan (Rev 7.0, July 2023).</li> <li>- ACHMP Dendrobium Colliery LW 18 (Niche, 9 February 2021).</li> <li>- ACHMP Dendrobium Colliery Area 3C LWs 21, 22 and 23 (Niche, 10 November 2021).</li> <li>- WC21 and Donalds Castle Creek Rehabilitation Plan (Rev 3.0, 28 July 2021).</li> </ul> | <ul style="list-style-type: none"> <li>- Section 7.2.1, Point 3 from 'Residential Background Level (RBL)' to 'Rating Background Level (RBL)'.<br/>SIMMCPs:<br/>It is the opinion of the audit team technical specialist for Upland Swamps and Biodiversity (i.e. Land Eco) that improvements are required to SIMMCPs to ensure they are adequate to meet the requirements of Schedule 8, Condition 2(b)(iii), (d)(ii), and (g)(i).<br/>The audit has identified several issues in relation to the effectiveness of monitoring and management measures including TARPs, including associated measures for measuring exceedance of predictions and subsidence performance criteria in relevant SMP Approvals. While the triggering of TARPs is generally reported in a satisfactory manner and adequately identify whether any minor impacts have occurred (irrespective of causality), the effectiveness of management measures and the adequacy of the TARPs themselves in preventing ongoing and cumulative impacts due to mining are considered by Land Eco to potentially require improvement as described below.<br/>In 2022, eight of the ten impact monitoring swamps recorded at least one TARP trigger. Of particular concern, the Composition TARP has been exceeding predictions for eight years at Swamp 1B. CMAs have included conducting ongoing research, trials, establishing offsets, and providing research funding. It is uncertain whether any of these CMAs are reducing the potential for continued triggering of TARPs. Specifically, where links to impacts from mining activities are considered likely, focus of CMAs is on research and offsets rather than avoiding and minimising. Rather than waiting for an exceedance to occur, Land Eco recommends consultation with regulatory agencies consider how CMAs may focus on pro-actively avoiding and minimising mining impacts. Therefore, <b>OF108</b> has been made. However, it is acknowledged: <ul style="list-style-type: none"> <li>- causality of impacts cannot be quickly determined, making avoiding and minimising impacts difficult for upland swamps; and</li> <li>- rehabilitation of Upland Swamps is not generally considered feasible.</li> </ul> </li> </ul> <p>In this regard, pre-emptive offsetting of the upland swamps via the Strategic Biodiversity Offset is a suitable amelioratory action already undertaken by IMC. Where research undertaken through the SRRP or by any other research institute in NSW identifies methods for the feasible rehabilitation of upland swamps, these must be implemented.</p> <p>In addition, in 2022, TARP levels have been triggered at seven of the fourteen impact transects monitored as part of the Littlejohn's Tree Frog Monitoring Program. Attachment H of the EOP report for LW 19 reports that it is possible some of these impacts pre-date mining. However, Appendix H also reports that despite increased rainfall, a number of impact monitoring transects are indicating reduced habitat conditions or reduced frog detection in the post-mining period. It is Land Eco's view that given the subsidence impacts being experienced across the catchment due to mining activities, there is potential this population of Littlejohn's Tree Frog (<i>Litoria littlejohni</i>) is being impacted by mining activities. Furthermore, the effectiveness of actions being undertaken under the SIMMCPs to avoid and minimise further impacts to this species is unclear. CMAs appear to be predominantly focused on monitoring the decline, rather than employing intervention measures.</p> <p>It is noted, a revised SRRP dated May 2023 has been submitted to DPE and is currently awaiting determination. The May 2023 SRRP includes details of the restoration of Littlejohn's Tree Frog populations within the Dendrobium mine-lease area, which includes seven studies that contribute to and support mitigation and conservation actions tailored to the Littlejohn's Tree Frog. These studies are understood to have commenced and are being undertaken by the University of Newcastle. Therefore, <b>OF109</b> has been made.</p> <p>Potential issues with the current structure of ecosystem functionality TARPs for SIMMCPs are noted in relation to the need for consecutive monitoring periods of trending decline to proceed through the three trigger levels before an exceedance of performance criteria is determined. As an example, the current structure of the TARPs could result in a Level 3 TARP after four consecutive monitoring periods of trending decline, followed by a fifth monitoring period without trending decline. Potential issues with this are:</p> |

| Condition # | Details   | Compliance status | Relevant evidence | Commentary   |
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|             |   |                   |                   | <ul style="list-style-type: none"> <li>– there does not appear to be a consideration to external factors (e.g. seasonal/climatic) that may have influenced a lack of trending decline in the fifth monitoring period; and</li> <li>– if, a trending decline was observed during sixth and seventh monitoring periods, subsequent to the fifth monitoring period, this would only trigger a Level 1 TARP without consideration to four of the last five monitoring periods showing a trending decline.</li> </ul> <p>In this scenario, CMAs required would revert to those required for a Level 1 TARP despite actual impacts being in the order of a Level 3 TARP or greater, potentially resulting in greater cumulative impact. Further rounds of consultation with relevant stakeholders are recommended to consider how TARPs may be redesigned to address the above concerns, perhaps requiring consecutive monitoring periods without trending decline to step back down the TARP levels rather than simply resetting to baseline. Therefore, <b>OF10</b> has been identified.</p> <p><b>OF108:</b> Investigate alternative measures to offsetting impacts on upland swamps, focussing on the avoidance and minimisation of further impacts to upland swamps from mining activities and ensuring timely implementation before more significant impacts eventuate.</p> <p><b>OF109:</b> If studies indicated that an existing population of Littlejohn’s Tree Frog does not, or cannot be confirmed to, exist at the Maddens Plain offset site, investigate additional management actions to ameliorate impacts due to mining on Littlejohn’s Tree Frog. This may include obtaining additional offsets (e.g. retiring like-for-like species credits under the NSW Biodiversity Offset Scheme).</p> <p><b>OF110:</b> Commence specific engagement with relevant agencies including DPE, BCS and WaterNSW in relation to the TARPs for SIMMCPs. The specific engagement would focus on whether:</p> <ul style="list-style-type: none"> <li>– consecutive monitoring periods of trending decline is an appropriate measure to escalate through the three trigger levels before an exceedance of performance measures is determined; and</li> <li>– consecutive monitoring periods without trending decline should be required to deescalate through the TARP levels (i.e. rather than deactivating the TARP following one period without trending decline). As an example: <ul style="list-style-type: none"> <li>– Level 3 TARP: three consecutive periods to move down to Level 2;</li> <li>– Level 2 TARP: four consecutive periods to move down to Level 1; and</li> <li>– Level 1 TARP: five consecutive periods for TARP to no longer be triggered.</li> </ul> </li> </ul> |
|             | <p>Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.</p> | Note              | N/A               | N/A.   |

| Condition # | Details  | Compliance status | Relevant evidence   | Commentary   |
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|             | <b>REVISION OF STRATEGIES, PLANS AND PROGRAMS</b>  |                   |   |  |
| 2A          | <p>Within three months of the:</p> <p>(a) submission of an incident report under condition 4 of Schedule 8;</p> <p>(b) submission of an Annual Review under condition 5 of Schedule 8;</p> <p>(c) submission of an Independent Environmental Audit under condition 6 of Schedule 8; or</p> <p>(d) approval of any modification of the conditions of this consent,</p> <p>the suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant.</p> <p>If necessary, to either improve the environmental performance of the development or cater for a modification, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Secretary and submitted to the Secretary for approval within six weeks of the review.</p> | Compliant         | <ul style="list-style-type: none"> <li>Management plan Review Log spreadsheet tracking edits as recently as August 2023.</li> <li>Environmental Documents spreadsheet tracking current document dates and identifying next review dates.</li> </ul> | <p><b>General environmental management:</b></p> <p>Sighted the Management Plan Review Log documenting amendments to TMP, ACHMPs, Bushfire Management Plan, LVAMP, Waste Management Plan, and EMS.</p> <p><b>Noise:</b></p> <p>Sighted the Management Plan Review Log documenting amendments to NMP. Log identifies the source of the update (i.e. Annual Review, audit, non-compliance event or complaint etc.).</p> <p><b>Air quality:</b></p> <p>Sighted the Management Plan Review Log documenting amendments to AQGHGMP. Log identifies the source of the update (i.e. Annual Review, audit, non-compliance event or complaint etc.).</p> <p><b>Upland Swamps and Biodiversity:</b></p> <p>Sighted the Management Plan Review Log documenting amendments to SIMMCPs. Log identifies the source of the update (i.e. Annual Review, audit, non-compliance event or complaint etc.).</p> <p><b>Subsidence Impacts and Remediation</b></p> <p>No recommendations pertaining to subsidence impact TARPS have been noted in Annual Reviews.</p> <p>Updates to environmental monitoring equipment/methods for surface flow measurement have been implemented during audit period.</p> <p>Update to Transgrid Tower mitigation works plan for LW21 subsidence as per LW19 works.</p> |
|             | <i>Note: This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.</i>  | Note              | N/A.  | N/A.   |
|             | <b>REPORTING</b>   |                   |   |  |
|             | <b>Incident Reporting</b>  |                   |   |  |
| 3           | <p>Within 24 hours of detecting the occurrence of an incident that causes (or may cause) material harm to the environment, the Applicant must notify the Department and other relevant agencies of the incident.</p>   | Not triggered     | <ul style="list-style-type: none"> <li>PIRMP (Rev 1.2, 16 February 2023).</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> </ul>  | <p>Review of relevant documentation verifies this condition was not triggered during the audit period, with the following noted:</p> <ul style="list-style-type: none"> <li>FY21: <ul style="list-style-type: none"> <li>No incidents occurred that caused (or may have caused) material harm to the environment during the audit period.</li> <li>It is noted a Penalty Notice in the amount of \$15,000 was issued by the EPA on 18 March 2021 for an uncontrolled release of water from the Kemira Valley Sediment Pond that occurred on 10 August 2020, which was during the 2020 IEA period.</li> </ul> <p>The EPA completed its investigation of the incident and determined that Dendrobium Coal did not comply with condition L1.1 of EPL 3241. However, it is noted this non-compliance occurred during the 2020 IEA period.</p> </li> <li>FY22: <ul style="list-style-type: none"> <li>No incidents occurred that caused (or may have caused) material harm to the environment during the audit period.</li> </ul> </li> <li>FY23: <ul style="list-style-type: none"> <li>No incidents occurred that caused (or may have caused) material harm to the environment during the audit period.</li> </ul> </li> </ul>  |
| 4           | <p>Within 7 days of notifying the Department and other relevant agencies of such an incident, the Applicant must provide the Department and these agencies with a written report that:</p> <p>(a) describes the date, time, and nature of the incident;</p> <p>(b) identifies the cause (or likely cause) of the incident;</p> <p>(c) describes what action has been taken to date; and</p> <p>(d) describes the proposed measures to address the incident.</p>  | Not triggered     | <ul style="list-style-type: none"> <li>PIRMP (Rev 1.2, 16 February 2023).</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> </ul>  | Refer to discussion at Schedule 8, Condition 3.  |
|             | <b>Annual Review</b>   |                   |   |  |

| Condition # | Details  | Compliance status | Relevant evidence                        | Commentary  |
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| 5           | <p>By the end of September each year (or other such timing as may be agreed by the Secretary), and for at least 3 years following the cessation of mining at the development, the Applicant must submit an Annual Review to the Secretary, CCC and all relevant agencies reviewing the environmental performance of the development to the satisfaction of the Secretary. This report must relate to the previous financial year and:</p> <p>(a) identify the standards and performance measures that apply to the development;</p> <p>(b) describe the development (including any rehabilitation) that was carried out in the previous financial year;</p> <p>(c) describe the development (including any rehabilitation) that is proposed to be carried out over the current financial year;</p> <p>(d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;</p> <p>(e) include a summary of the monitoring results for the development during the past year;</p> <p>(f) a comprehensive review of the monitoring results and complaints records of the development over the previous financial year, including a comparison of these results against the:</p> <p>(i) relevant statutory requirements, limits or performance measures/criteria;</p> <p>(ii) requirements of any plan or program required under this consent;</p> <p>(iii) monitoring results of previous years; and</p> <p>(iv) relevant predictions in the documents listed in condition 2 of Schedule 2.</p> <p>(g) identify any non-compliance or incident which occurred in the previous financial year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence;</p> <p>(h) evaluate and report on:</p> <p>(i) the effectiveness of the noise and air quality management systems; and</p> <p>(ii) compliance with the performance measures, criteria and operating conditions in this consent;</p> <p>(i) identify any trends in the monitoring data over the life of the development;</p> <p>(j) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and</p> <p>(k) describe what measures will be implemented over the next financial year to improve the environmental performance of the development.</p> <p>Copies of the Annual Review must be submitted to the affected Councils and made available to the CCC and any interested person upon request.</p> | Compliant         | Annual Reviews for FY21, FY22, and FY23. | <p>Review of relevant documentation verifies compliance with the requirements of this condition, with Annual Reviews submitted before the end of September each year. Other considerations are as follows:</p> <ul style="list-style-type: none"> <li>- Schedule 9, Condition 5(a): <ul style="list-style-type: none"> <li>- Section 6 (Environmental Performance); and</li> <li>- Section 13 (References and Associated Documents).</li> </ul> </li> <li>- Schedule 9, Condition 5(b): <ul style="list-style-type: none"> <li>- Section 4 (Operations Summary);</li> <li>- Section 8.1 (Rehabilitation for the Reporting Period); and</li> <li>- Appendix 9 of the FY21 and FY23 Annual Reviews.</li> </ul> </li> <li>- Schedule 9, Condition 5(c) – Section 12 (Activities Proposed in the Next Reporting Period);</li> <li>- Schedule 9, Condition 5(d): <ul style="list-style-type: none"> <li>- Section 9.1 (Community Complaints);</li> <li>- Appendix 5 of the FY21 and FY22 Annual Reviews; and</li> <li>- Appendix 4 of the FY23 Annual Review.</li> </ul> </li> <li>- Schedule 9, Condition 5(e) &amp; 5(f): <ul style="list-style-type: none"> <li>- Sections 6 (Environmental Performance);</li> <li>- Appendices 6 and 7 of the FY21 and FY22 Annual Reviews; and</li> <li>- Appendices 5 and 6 of the FY23 Annual Review.</li> </ul> </li> <li>- Schedule 9, Condition 5(g): <ul style="list-style-type: none"> <li>- Section 1 (Statement of Compliance); and</li> <li>- Section 11.1 (Site Compliance – Dendrobium).</li> </ul> </li> <li>- Schedule 9, Condition 5(h): <ul style="list-style-type: none"> <li>- Section 6.1 (Air Pollution);</li> <li>- Section 6.8 (Operational Noise);</li> <li>- Section 6 (Environmental Performance); and</li> <li>- Section 11 (Incidents, Non-Compliances and Exceedances During the Reporting Period).</li> </ul> </li> <li>- Schedule 9, Condition 5(i) – Section 6 (Environmental Performance);</li> <li>- Schedule 9, Condition 5(j): <ul style="list-style-type: none"> <li>- Appendix 8 of the FY21 and FY22 Annual Reviews; and</li> <li>- Appendix 7 of the FY23 Annual Review.</li> </ul> </li> <li>- Schedule 9, Condition 5(k) – Section 12 (Activities Proposed in the Next Reporting Period).</li> </ul> |

| Condition # | Details   | Compliance status | Relevant evidence  | Commentary  |
|-------------|---|-------------------|--|---|
|             | <b>INDEPENDENT ENVIRONMENTAL AUDIT</b>  |                   |  |   |
| 6           | <p>By 31 December 2011, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:</p> <p>(a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;</p> <p>(b) include consultation with the relevant agencies and the CCC;</p> <p>(c) assess the environmental performance of the development and assess whether it is complying with the relevant requirements in this consent and any relevant EPL or mining lease (including any strategy, plan or program required under these approvals);</p> <p>(d) review the adequacy of strategies, plans or programs required under these approvals;</p> <p>(e) recommend measures or actions to improve the environmental performance of the development, and/or any strategy, plan or program required under these approvals; and</p> <p>(f) be conducted and reported to the satisfaction of the Secretary.</p> | Compliant         | <ul style="list-style-type: none"> <li>– 2020 IEA (Environmental Resources Management Australia Pty Ltd [ERM], 16/03/21).</li> <li>– DPE letter approving audit team.</li> <li>– This audit report.</li> </ul> | <p>The previous audit was conducted by ERM, commissioned prior to 31 December 2020, with the site inspection completed 12 to 15 October 2020. The final report was issued 20 November 2020, and a revised final report issued 16 March 2021.</p> <p>The 2023 IEA was commissioned prior to 31 December 2023, with the audit team approved by DPE on 5 June 2023, and comprised suitably qualified experts in relevant fields including subsidence and remediation management, noise, air quality, stream hydrology and water quality, rehabilitation, upland swamps, and biodiversity.</p> <p>The 2023 IEA included consultation with the CCC, DPE – Compliance, DPE – Biodiversity and Conservation, Dams Safety NSW, DPE Water, the EPA, NSW Resources Regulator, Wingecarribee Shire Council, WCC, Wollondilly Shire Council, and WaterNSW. This report assesses the environmental performance of the Project and compliance with relevant requirements in the approval and EPL.</p> <p>The adequacy of strategies, plans and/or programs required under the approval and EPL were reviewed as part of the audit and are presented throughout the main report and the audit tables and improvement recommendations have been provided as part of the main report.</p> <p>Onward considers that all the requirements of this Condition have been met.</p> |
|             | <i>Note: This audit team must be led by a suitably qualified auditor and include experts in the fields of a) mine subsidence impacts and remediation and b) stream hydrology and water quality.</i>   | Note              | N/A.   | N/A.  |
| 7           | <p>Within three months of commencing an Independent Environmental Audit, or within another timeframe agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary, and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The recommendations must be implemented to the satisfaction of the Secretary.</p>   | Compliant         | Email submission to DPE for 2020 IEA, dated 18/12/20   | Review of relevant documentation verifies compliance with the requirements of this condition.   |
|             | <i>Note: The audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Secretary.</i>   | Note              | N/A.   | N/A.  |
|             | <b>Monitoring and Environmental Audits</b>  |                   |  |   |
| 8           | <p>Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&amp;A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit.</p>   | Note              | N/A.   | N/A.  |
|             | <i>Note: For the purposes of this condition, as set out in the EP&amp;A Act, “monitoring” is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an “environmental audit” is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.</i>  | Note              | N/A.   | N/A.  |
|             | <b>COMMUNITY CONSULTATIVE COMMITTEE</b>   |                   |  |   |
| 9           | <p>The Applicant must maintain a Community Consultative Committee (CCC) for the development to the satisfaction of the Secretary. This CCC must be operated in general accordance with the Department’s Community Consultative Committee Guidelines: State Significant Projects (2016) to the satisfaction of the Secretary.</p>  | Compliant         | CCC meeting minutes.   | <p>IMC has maintained the CCC throughout the audit period, conducting regular meetings and providing information in accordance with relevant guidelines.</p> <p>The committee comprises an independent chair, membership from relevant local councils and members of the impacted community. Therefore, compliance with the requirements of this condition has been confirmed.</p>  |
|             | <p>Notes:</p> <ul style="list-style-type: none"> <li>– The CCC is an advisory committee only.</li> <li>– In accordance with the guidelines, the committee should comprise an independent chair and appropriate representation from the Applicant, Council and the local community.</li> </ul>   | Note              | N/A.   | N/A.  |

| Condition #                  | Details   | Compliance status | Relevant evidence  | Commentary  |
|------------------------------|---|-------------------|--|---|
| 10                           | <p>If required by the CCC, the Applicant must establish and maintain a trust fund, or other funding arrangement that may be agreed between the Applicant and the CCC. This fund must be:</p> <p>(a) managed by the Chair of the CCC to facilitate the functioning of the CCC;</p> <p>(b) used only if required for the engagement of consultants to interpret technical information and the like;</p> <p>(c) provided with \$8,000 per annum (indexed according to the CPI) by the Applicant for the duration of mining operations and other activities under the consent, or as otherwise directed by the Secretary;</p> <p>(d) managed so that any monies unspent during each year are returned to the Applicant;</p> <p>(e) managed so that the Chair of the CCC causes a record of the finances of the fund to be kept and provided to the Applicant and the Secretary at the end of each year the fund is used.</p>  | Compliant         | <ul style="list-style-type: none"> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Site interviews completed 9, 10 and 11 October 2023.</li> </ul> | <p><b>Review of relevant documentation and conduct of interviews indicates a trust fund has been established and is managed by the chair of the CCC. However, there have been no requests to release of funds made by the CCC during the audit period.</b></p> <p>Therefore, compliance with the requirements of this condition has been confirmed.</p>   |
| <b>ACCESS TO INFORMATION</b> |   |                   |  |   |
| 11                           | <p>Before the commencement of Modification 8 until the completion of all rehabilitation required under this consent, the Applicant must:</p> <p>(a) make the following information and documents (as they are obtained, approved or as otherwise stipulated within the conditions of this consent) publicly available on its website:</p> <p>(i) the documents referred to in condition 2 of Schedule 2 of this consent;</p> <p>(ii) all current statutory approvals for the development;</p> <p>(iii) all approved strategies, plans and programs required under the conditions of this consent;</p> <p>(iv) minutes of CCC meetings;</p> <p>(v) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent;</p> <p>(vi) a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;</p> <p>(vii) a summary of the current stage and progress of the development;</p> <p>(viii) contact details to enquire about the development or to make a complaint;</p> <p>(ix) a complaints register, updated monthly;</p> <p>(x) the Annual Reviews of the development;</p> <p>(xi) audit reports prepared as part of any Independent Environmental Audit of the development and the Applicant's response to the recommendations in any audit report;</p> <p>(xii) any other matter required by the Secretary; and</p> <p>(b) keep such information up to date, to the satisfaction of the Secretary.</p> | Compliant         | IMC website.   | <p><b>2020 IEA Recommendation:</b></p> <p>R07: Include all the reports required by condition 2 of Schedule 2 of this consent on the website.</p> <p><b>2023 IEA Findings:</b></p> <p><u>Status of 2020 IEA Recommendation:</u></p> <p>Review of the IMC response to recommendations from the 2020 IEA indicates South32 does not have access to documents prior to Modification 5.</p> <p><u>2023 IEA Findings</u></p> <p>Review of relevant documentation verifies compliance with the requirements of this condition.</p> |



## Appendix E EPL 3241

| Condition #   | Details  | Compliance status                                | Relevant evidence      | Commentary           |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
|---|--|--|------------------------|----------------------|---|-----------------|---|-----------------|--|---|------------|--|---|------------|-------|-----------|-------|-----------|-----------|--|---|
| <b>1</b>  | <b>Administrative Conditions</b>   |  |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
| <b>A1</b>   | <b>What the licence authorises and regulates</b>   |  |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
| A1.1  | <p>This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation. Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.</p> <table border="1"> <thead> <tr> <th>Scheduled Activity</th> <th>Fee Based Activity</th> <th>Scale</th> </tr> </thead> <tbody> <tr> <td>Coal works</td> <td>Coal works</td> <td>&gt; 2000000 - 5000000 T annual handing capacity</td> </tr> <tr> <td>Mining for coal</td> <td>Mining for coal</td> <td>&gt; 3500000 - 5000000 T annual production capacity</td> </tr> </tbody> </table> | Scheduled Activity                               | Fee Based Activity     | Scale                | Coal works  | Coal works      | > 2000000 - 5000000 T annual handing capacity     | Mining for coal | Mining for coal  | > 3500000 - 5000000 T annual production capacity  | Compliant  | <ul style="list-style-type: none"> <li>Site inspection completed 9, 10 and 11 October 2023.</li> <li>Site interviews completed 9, 10 and 11 October 2023.</li> <li>Training running reports.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> </ul> | <p>Review of relevant documentation indicates this data is recorded via the Logistics KPI Report and also on Pacific National Run Sheets, with a sample of this data sighted during conduct of the audit.</p> <p>Review of documentation verifies compliance with the requirements of this condition.</p> |            |       |           |       |           |           |  |   |
| Scheduled Activity  | Fee Based Activity   | Scale  |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
| Coal works  | Coal works   | > 2000000 - 5000000 T annual handing capacity    |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
| Mining for coal   | Mining for coal  | > 3500000 - 5000000 T annual production capacity |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
| <b>A2</b>   | <b>Premises or plant to which this licence applies</b>   |  |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
| A2.1  | <p>The licence applies to the following premises:</p> <table border="1"> <thead> <tr> <th>Premises Details</th> </tr> </thead> <tbody> <tr> <td><b>DENDROBIUM MINE</b></td> </tr> <tr> <td><b>CORDEAUX ROAD</b></td> </tr> <tr> <td><b>MOUNT KEMBLA</b></td> </tr> <tr> <td><b>NSW 2526</b></td> </tr> <tr> <td><b>SEE PREMISES DETAILS LISTED IN TABLE BELOW</b></td> </tr> </tbody> </table>   | Premises Details                                 | <b>DENDROBIUM MINE</b> | <b>CORDEAUX ROAD</b> | <b>MOUNT KEMBLA</b>                                       | <b>NSW 2526</b> | <b>SEE PREMISES DETAILS LISTED IN TABLE BELOW</b> | Compliant       | <ul style="list-style-type: none"> <li>Site inspection completed 9, 10 and 11 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023./</li> </ul> | Review of aerial photography with cadastral overlay indicates activities are within the area described. |            |  |   |            |       |           |       |           |           |  |   |
| Premises Details  |  |  |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
| <b>DENDROBIUM MINE</b>                                    |  |  |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
| <b>CORDEAUX ROAD</b>                                      |  |  |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
| <b>MOUNT KEMBLA</b>                                       |  |  |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
| <b>NSW 2526</b>   |  |  |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
| <b>SEE PREMISES DETAILS LISTED IN TABLE BELOW</b>         |  |  |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
| A2.2  | <p>Premises Details</p> <table border="1"> <thead> <tr> <th>Location</th> <th>Lot / Portion</th> <th>Deposited Plan</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Dendrobium Mine Pit Top Facilities (Ex Nebo Mine Pit Top)</td> <td>Lot 1</td> <td>DP 1103781</td> </tr> <tr> <td>Lot 1, 2 &amp; 3</td> <td>DP 1103666</td> </tr> <tr> <td>Lot 22</td> <td>DP 1076092</td> </tr> <tr> <td rowspan="3">Kemira Valley Coal Loading Facility</td> <td>Lot 1</td> <td>DP 1190768</td> </tr> <tr> <td>Lot 1</td> <td>DP 164689</td> </tr> <tr> <td>Lot 1</td> <td>DP 196406</td> </tr> </tbody> </table>  | Location   | Lot / Portion          | Deposited Plan       | Dendrobium Mine Pit Top Facilities (Ex Nebo Mine Pit Top) | Lot 1           | DP 1103781  | Lot 1, 2 & 3    | DP 1103666   | Lot 22  | DP 1076092 | Kemira Valley Coal Loading Facility  | Lot 1   | DP 1190768 | Lot 1 | DP 164689 | Lot 1 | DP 196406 | Compliant | <ul style="list-style-type: none"> <li>Site inspection completed 9, 10 and 11 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>SIX Maps/SEED Portal.</li> </ul> | Review of aerial photography with cadastral overlay indicates activities are within the area described. |
| Location  | Lot / Portion  | Deposited Plan                                   |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
| Dendrobium Mine Pit Top Facilities (Ex Nebo Mine Pit Top) | Lot 1  | DP 1103781                                       |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
|   | Lot 1, 2 & 3   | DP 1103666                                       |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
|   | Lot 22   | DP 1076092                                       |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
| Kemira Valley Coal Loading Facility                       | Lot 1  | DP 1190768                                       |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
|   | Lot 1  | DP 164689  |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |
|   | Lot 1  | DP 196406  |                        |                      |   |                 |   |                 |  |   |            |  |   |            |       |           |       |           |           |  |   |

| Condition #         | Details   | Compliance status | Relevant evidence  | Commentary  |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
|---------------------|---|-------------------|--|---|-----------|-----------|----------|-----------|-----------|-------|-----------|-------|-----------|-------------|-----------|---------|------------|---------|------------|---------|-----------|---------|------------|------------------|--|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|------------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|--------|-----------|--------|-----------|---------|-----------|-------|------------|---------|--|-----------------|--|-------|-----------|-------|------------|---------------------|--|---------|--|----------------|--|-------|----------|-------|-----------|--|--|--|
|                     | <table border="1"> <tr><td>Lot 1</td><td>DP 221602</td></tr> <tr><td>Lot 1</td><td>DP 615178</td></tr> <tr><td>Lot 1 &amp; 2</td><td>DP 41756</td></tr> <tr><td>Lot 2 &amp; 3</td><td>DP 157009</td></tr> <tr><td>Lot 3</td><td>DP 159797</td></tr> <tr><td>Lot 3</td><td>DP 196371</td></tr> <tr><td>Lot 11 &amp; 12</td><td>DP 250762</td></tr> <tr><td>Lot 114</td><td>DP 1127132</td></tr> <tr><td>Lot 115</td><td>DP 1190868</td></tr> <tr><td>Lot 137</td><td>DP 751278</td></tr> <tr><td>Lot 138</td><td>DP 1190404</td></tr> <tr><td colspan="2">Kemira Rail Line</td></tr> <tr><td>Lot 1</td><td>DP 156521</td></tr> <tr><td>Lot 1</td><td>DP 157009</td></tr> <tr><td>Lot 1</td><td>DP 159797</td></tr> <tr><td>Lot 1</td><td>DP 208743</td></tr> <tr><td>Lot 1</td><td>DP 227274</td></tr> <tr><td>Lot 1</td><td>DP 606431</td></tr> <tr><td>Lot 2</td><td>DP 1061983</td></tr> <tr><td>Lot 2</td><td>DP 208440</td></tr> <tr><td>Lot 2</td><td>DP 208744</td></tr> <tr><td>Lot 3</td><td>DP 203034</td></tr> <tr><td>Lot 3</td><td>DP 214572</td></tr> <tr><td>Lot 4</td><td>DP 203034</td></tr> <tr><td>Lot 6</td><td>DP 867936</td></tr> <tr><td>Lot 25</td><td>DP 216637</td></tr> <tr><td>Lot 70</td><td>DP 432516</td></tr> <tr><td>Lot 102</td><td>DP 602229</td></tr> <tr><td>Lot 1</td><td>DP 1190768</td></tr> <tr><td colspan="2">ML 1510</td></tr> <tr><td colspan="2">No 1 Vent Shaft</td></tr> <tr><td>Lot 1</td><td>DP 196993</td></tr> <tr><td>Lot 2</td><td>DP 1190181</td></tr> <tr><td colspan="2">No 2 &amp; 3 Vent Shaft</td></tr> <tr><td colspan="2">ML 1566</td></tr> <tr><td colspan="2">Obrien's Drift</td></tr> <tr><td>Lot 1</td><td>DP 45861</td></tr> <tr><td>Lot 3</td><td>DP 196426</td></tr> </table> | Lot 1             | DP 221602  | Lot 1   | DP 615178 | Lot 1 & 2 | DP 41756 | Lot 2 & 3 | DP 157009 | Lot 3 | DP 159797 | Lot 3 | DP 196371 | Lot 11 & 12 | DP 250762 | Lot 114 | DP 1127132 | Lot 115 | DP 1190868 | Lot 137 | DP 751278 | Lot 138 | DP 1190404 | Kemira Rail Line |  | Lot 1 | DP 156521 | Lot 1 | DP 157009 | Lot 1 | DP 159797 | Lot 1 | DP 208743 | Lot 1 | DP 227274 | Lot 1 | DP 606431 | Lot 2 | DP 1061983 | Lot 2 | DP 208440 | Lot 2 | DP 208744 | Lot 3 | DP 203034 | Lot 3 | DP 214572 | Lot 4 | DP 203034 | Lot 6 | DP 867936 | Lot 25 | DP 216637 | Lot 70 | DP 432516 | Lot 102 | DP 602229 | Lot 1 | DP 1190768 | ML 1510 |  | No 1 Vent Shaft |  | Lot 1 | DP 196993 | Lot 2 | DP 1190181 | No 2 & 3 Vent Shaft |  | ML 1566 |  | Obrien's Drift |  | Lot 1 | DP 45861 | Lot 3 | DP 196426 |  |  |  |
| Lot 1               | DP 221602   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 1               | DP 615178   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 1 & 2           | DP 41756  |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 2 & 3           | DP 157009   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 3               | DP 159797   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 3               | DP 196371   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 11 & 12         | DP 250762   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 114             | DP 1127132  |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 115             | DP 1190868  |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 137             | DP 751278   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 138             | DP 1190404  |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Kemira Rail Line    |   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 1               | DP 156521   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 1               | DP 157009   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 1               | DP 159797   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 1               | DP 208743   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 1               | DP 227274   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 1               | DP 606431   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 2               | DP 1061983  |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 2               | DP 208440   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 2               | DP 208744   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 3               | DP 203034   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 3               | DP 214572   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 4               | DP 203034   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 6               | DP 867936   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 25              | DP 216637   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 70              | DP 432516   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 102             | DP 602229   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 1               | DP 1190768  |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| ML 1510             |   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| No 1 Vent Shaft     |   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 1               | DP 196993   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 2               | DP 1190181  |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| No 2 & 3 Vent Shaft |   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| ML 1566             |   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Obrien's Drift      |   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 1               | DP 45861  |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| Lot 3               | DP 196426   |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| A2.3                | <p>In addition to the land set out in the Premises Details table above, the licence also applies to the underground coal mining areas:</p> <p>(a) that are the subject of Consolidated Coal Lease 768: and</p> <p>(b) for which all necessary consents or approvals for mining for coal have been obtained (including any consent or approval required under the Environmental Planning and Assessment Act 1979).</p>   | Compliant         | <ul style="list-style-type: none"> <li>Site inspection completed 9, 10 and 11 October 2023.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>SIX Maps/SEED Portal.</li> </ul> | Review of aerial photography with cadastral overlay indicates activities are within the area described. |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| A3                  | <b>Information supplied to the EPA</b>  |                   |  |   |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |
| A3.1                | <p>Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to:</p> <p>a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and</p> <p>b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.</p>   | Note              | N/A.   | N/A.  |           |           |          |           |           |       |           |       |           |             |           |         |            |         |            |         |           |         |            |                  |  |       |           |       |           |       |           |       |           |       |           |       |           |       |            |       |           |       |           |       |           |       |           |       |           |       |           |        |           |        |           |         |           |       |            |         |  |                 |  |       |           |       |            |                     |  |         |  |                |  |       |          |       |           |  |  |  |

| Condition #            | Details   | Compliance status   | Relevant evidence  | Commentary   |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
|------------------------|---|---|--|--|--|------------------------|--------------------------|-------------------------|----------------------|----|-----------------|---|---|----|-----------------|-----------------------|--|-----------|---|---|--|----|-------------------|--|--|----|-------------------|--|--|----|--|-----------------------|---|----|--|-----------------------|---|----|--|-----------------------|---|----|---------------------|---------------------|--|----|------------------------------|------------------------------|---|----|---------------------|---------------------|--|--|------------------------------|------------------------------|--|-----------|--|--|
| 2                      | <b>Discharges to Air and Water and Applications to Land</b>   |   |  |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| P1                     | <b>Location of monitoring/discharge points and areas</b>  |   |  |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| P1.1                   | <p>The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.</p> <table border="1"> <thead> <tr> <th colspan="4"><i>Air</i></th> </tr> <tr> <th>EPA Identification no.</th> <th>Type of Monitoring Point</th> <th>Type of Discharge Point</th> <th>Location Description</th> </tr> </thead> <tbody> <tr> <td>20</td> <td>PM10 monitoring</td> <td></td> <td>Photometer located at the Kemira Valley coal loading facility. lat. long. -34.423107 150.826605</td> </tr> <tr> <td>21</td> <td>PM10 monitoring</td> <td></td> <td>Photometer located at the Dendrobium mine pit top. lat. long. -34.431440 150.809213</td> </tr> </tbody> </table>  | <i>Air</i>  |  |  |  | EPA Identification no. | Type of Monitoring Point | Type of Discharge Point | Location Description | 20 | PM10 monitoring |   | Photometer located at the Kemira Valley coal loading facility. lat. long. -34.423107 150.826605 | 21 | PM10 monitoring |                       | Photometer located at the Dendrobium mine pit top. lat. long. -34.431440 150.809213                                  | Compliant | <ul style="list-style-type: none"> <li>Air Quality and Greenhouse Gas Management Plan (AQGHGMP) (Rev 9, August 2023).</li> <li>EMS (Rev 6.0, July 2021).</li> <li>14-day monitoring data reporting as available on the IMC website.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> </ul> | IMC monitors PM <sub>10</sub> at the points identified as Point 20 and Point 21. Data from these monitors have been obtained and reviewed. These data are kept in spreadsheet form. The installations were inspected on 9 October 2022 and no issues were identified. |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| <i>Air</i>             |   |   |  |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| EPA Identification no. | Type of Monitoring Point  | Type of Discharge Point   | Location Description   |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| 20                     | PM10 monitoring   |   | Photometer located at the Kemira Valley coal loading facility. lat. long. -34.423107 150.826605  |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| 21                     | PM10 monitoring   |   | Photometer located at the Dendrobium mine pit top. lat. long. -34.431440 150.809213  |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| P1.2                   | The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.   | Not triggered   | N/A.   | No utilisation areas are identified in the EPL, therefore this condition has not been triggered. |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| P1.3                   | <p>The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.</p> <table border="1"> <thead> <tr> <th colspan="4"><i>Water and land</i></th> </tr> <tr> <th>EPA Identification no.</th> <th>Type of Monitoring Point</th> <th>Type of Discharge Point</th> <th>Location Description</th> </tr> </thead> <tbody> <tr> <td>5</td> <td></td> <td>Treated stormwater and minewater discharge from Dendrobium mine. Brine discharge from Appin West mine. Discharge quality monitoring</td> <td>Pipeline discharging to Allan's Creek at Marley Place. lat. long. -34.450367 150.855419</td> </tr> <tr> <td>22</td> <td></td> <td>Wet Weather Discharge</td> <td>Spillway overflow from Dendrobium Mine pit top sedimentation dam to American Creek. lat. long. -34.430828 150.810802</td> </tr> <tr> <td>23</td> <td></td> <td>Wet Weather Discharge</td> <td>Spillway overflow from Kemira Valley Coal Loading Facility sedimentation dam to Brandy and Water Creek. lat. long. -34.420795 150.826836</td> </tr> <tr> <td>24</td> <td>Volume Monitoring</td> <td></td> <td>Pipeline dewatering underground water storage area. lat. long. -34.415564 150.809602</td> </tr> <tr> <td>25</td> <td>Volume Monitoring</td> <td></td> <td>Pipeline discharge for Kemira Valley sedimentation ponds. lat. long. -34.421191 150.826841</td> </tr> <tr> <td>26</td> <td></td> <td>Wet weather discharge</td> <td>Nebo portal groundwater drain. lat. long. -34.428260 150.812208</td> </tr> <tr> <td>27</td> <td></td> <td>Wet weather discharge</td> <td>Kemira portal groundwater drain. lat. long. -34.415079 150.826858</td> </tr> <tr> <td>28</td> <td></td> <td>Wet weather discharge</td> <td>Spillway overflow from north sedimentation pond at Vent Shaft 2 &amp; 3. Lat. Long. -34.384161 150.764285</td> </tr> <tr> <td>29</td> <td>Discharge to waters</td> <td>Discharge to waters</td> <td>Piped discharge outlet from north sedimentation pond at Vent Shaft 2 &amp; 3. Lat. Long. -34.384071 150.764316</td> </tr> <tr> <td>30</td> <td>Discharge quality monitoring</td> <td>Discharge quality monitoring</td> <td>Spillway overflow from south sedimentation pond at Vent Shaft 2 &amp; 3. Lat. Long. -34.385623 150.763310</td> </tr> <tr> <td>31</td> <td>Discharge to waters</td> <td>Discharge to waters</td> <td>Piped discharge outlet from south sedimentation pond at Vent Shaft 2 &amp; 3. Lat. Long. -34.385361 150.763436</td> </tr> <tr> <td></td> <td>Discharge quality monitoring</td> <td>Discharge quality monitoring</td> <td></td> </tr> </tbody> </table> | <i>Water and land</i>   |  |  |  | EPA Identification no. | Type of Monitoring Point | Type of Discharge Point | Location Description | 5  |                 | Treated stormwater and minewater discharge from Dendrobium mine. Brine discharge from Appin West mine. Discharge quality monitoring | Pipeline discharging to Allan's Creek at Marley Place. lat. long. -34.450367 150.855419         | 22 |                 | Wet Weather Discharge | Spillway overflow from Dendrobium Mine pit top sedimentation dam to American Creek. lat. long. -34.430828 150.810802 | 23        |   | Wet Weather Discharge   | Spillway overflow from Kemira Valley Coal Loading Facility sedimentation dam to Brandy and Water Creek. lat. long. -34.420795 150.826836 | 24 | Volume Monitoring |  | Pipeline dewatering underground water storage area. lat. long. -34.415564 150.809602 | 25 | Volume Monitoring |  | Pipeline discharge for Kemira Valley sedimentation ponds. lat. long. -34.421191 150.826841 | 26 |  | Wet weather discharge | Nebo portal groundwater drain. lat. long. -34.428260 150.812208 | 27 |  | Wet weather discharge | Kemira portal groundwater drain. lat. long. -34.415079 150.826858 | 28 |  | Wet weather discharge | Spillway overflow from north sedimentation pond at Vent Shaft 2 & 3. Lat. Long. -34.384161 150.764285 | 29 | Discharge to waters | Discharge to waters | Piped discharge outlet from north sedimentation pond at Vent Shaft 2 & 3. Lat. Long. -34.384071 150.764316 | 30 | Discharge quality monitoring | Discharge quality monitoring | Spillway overflow from south sedimentation pond at Vent Shaft 2 & 3. Lat. Long. -34.385623 150.763310 | 31 | Discharge to waters | Discharge to waters | Piped discharge outlet from south sedimentation pond at Vent Shaft 2 & 3. Lat. Long. -34.385361 150.763436 |  | Discharge quality monitoring | Discharge quality monitoring |  | Compliant | <ul style="list-style-type: none"> <li>WMP (Rev 8.0, 4 August 2023).</li> <li>EMS (Rev 6.0, July 2021).</li> <li>14-day monitoring data reporting as available on the IMC website.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>SCADA monitoring system.</li> </ul> | Review of documentation verifies compliance with the requirements of this condition. |
| <i>Water and land</i>  |   |   |  |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| EPA Identification no. | Type of Monitoring Point  | Type of Discharge Point   | Location Description   |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| 5                      |   | Treated stormwater and minewater discharge from Dendrobium mine. Brine discharge from Appin West mine. Discharge quality monitoring | Pipeline discharging to Allan's Creek at Marley Place. lat. long. -34.450367 150.855419  |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| 22                     |   | Wet Weather Discharge   | Spillway overflow from Dendrobium Mine pit top sedimentation dam to American Creek. lat. long. -34.430828 150.810802                     |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| 23                     |   | Wet Weather Discharge   | Spillway overflow from Kemira Valley Coal Loading Facility sedimentation dam to Brandy and Water Creek. lat. long. -34.420795 150.826836 |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| 24                     | Volume Monitoring   |   | Pipeline dewatering underground water storage area. lat. long. -34.415564 150.809602   |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| 25                     | Volume Monitoring   |   | Pipeline discharge for Kemira Valley sedimentation ponds. lat. long. -34.421191 150.826841   |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| 26                     |   | Wet weather discharge   | Nebo portal groundwater drain. lat. long. -34.428260 150.812208  |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| 27                     |   | Wet weather discharge   | Kemira portal groundwater drain. lat. long. -34.415079 150.826858  |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| 28                     |   | Wet weather discharge   | Spillway overflow from north sedimentation pond at Vent Shaft 2 & 3. Lat. Long. -34.384161 150.764285                                    |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| 29                     | Discharge to waters   | Discharge to waters   | Piped discharge outlet from north sedimentation pond at Vent Shaft 2 & 3. Lat. Long. -34.384071 150.764316                               |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| 30                     | Discharge quality monitoring  | Discharge quality monitoring  | Spillway overflow from south sedimentation pond at Vent Shaft 2 & 3. Lat. Long. -34.385623 150.763310                                    |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
| 31                     | Discharge to waters   | Discharge to waters   | Piped discharge outlet from south sedimentation pond at Vent Shaft 2 & 3. Lat. Long. -34.385361 150.763436                               |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |
|                        | Discharge quality monitoring  | Discharge quality monitoring  |  |  |  |                        |                          |                         |                      |    |                 |   |   |    |                 |                       |  |           |   |   |  |    |                   |  |  |    |                   |  |  |    |  |                       |   |    |  |                       |   |    |  |                       |   |    |                     |                     |  |    |                              |                              |   |    |                     |                     |  |  |                              |                              |  |           |  |  |

| Condition # | Details  | Compliance status | Relevant evidence  | Commentary  |
|-------------|--|-------------------|--|---|
| 3           | <b>Limit Conditions</b>  |                   |  |   |
| L1          | <b>Pollution of waters</b>   |                   |  |   |
| 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.  | Compliant         | <ul style="list-style-type: none"> <li>- 14-day monitoring data reporting as available on the IMC website.</li> <li>- Annual Reviews for FY21, FY22, and FY23.</li> <li>- Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> </ul> | <p><b>2020 IEA Recommendation:</b><br/>The release from the sediment dam is currently under investigation by the regulator.</p> <p><b>2023 IEA Findings:</b><br/><u>Status of 2020 IEA Recommendation:</u><br/>An investigation determined that the cause of the event was the corrosion and subsequent failure of a clean water diversion pipe beneath the sediment pond. This caused a void to form underneath the sediment pond and the subsequent release of water. A clean-up program was implemented to remove the coal fines. An environmental assessment of the creeks in November 2020 observed no ongoing evidence of coal fines.<br/>Measures to reinstate the sediment pond were undertaken, including replacement of the clean water diversion pipe. The sediment pond returned to normal operation in December 2020.<br/>Review of documentation indicates no further direction was given and this recommendation is considered closed.</p> <p><u>2023 IEA Findings</u><br/>Review of relevant documentation verifies this condition was not triggered during the audit period, with the following noted:</p> <ul style="list-style-type: none"> <li>- FY21: <ul style="list-style-type: none"> <li>- No incidents occurred that caused (or may have caused) material harm to the environment during the audit period.</li> <li>- It is noted a Penalty Notice in the amount of \$15,000 was issued by the EPA on 18 March 2021 for an uncontrolled release of water from the Kemira Valley Sediment Pond that occurred on 10 August 2020, which was during the 2020 IEA period.<br/>The EPA completed its investigation of the incident and determined that Dendrobium Coal did not comply with condition L1.1 of EPL 3241. However, it is noted this non-compliance occurred during the 2020 IEA period.</li> </ul> </li> <li>- FY22: No incidents occurred that caused (or may have caused) material harm to the environment during the audit period.</li> <li>- FY23: No incidents occurred that caused (or may have caused) material harm to the environment during the audit period.</li> </ul> |
| L2          | <b>Concentration limits</b>  |                   |  |   |
| L2.1        | For each monitoring\discharge point or utilisation area specified in the table\ 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. | Note              | N/A.   | N/A.  |
| L2.2        | Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.   | Note              | N/A.   | N/A.  |
| L2.3        | To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\.   | Note              | N/A.   | N/A.  |

| Condition #            | Details   | Compliance status                 | Relevant evidence   | Commentary   |                                    |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
|------------------------|---|-----------------------------------|---|--|------------------------------------|--------------------------|------------------------------------|---------|----------------------|--|--|--|-----|--------|----------------------|--|--|--|-------|--------|----------------------|--|--|--|---|----------------|----------------------|--|--|--|----|----|----|--|--|--|---------|------------------------|----------------------|--|--|--|----|------|----------------------|--|--|--|-----|-----------|------------------|-----------------------------------|-----------------------------------|--------------------------|------------------------------------|------------------------|----------------------|--|--|--|----|-----------|-------------------------------|--|--|--|-----|---------------------|--|---|
|                        | <b>Water and/or Land Concentration Limits</b>   |                                   |   |  |                                    |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| L2.4                   | <p><b>POINT 5</b></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Units of Measure</th> <th>50 percentile concentration limit</th> <th>90 percentile concentration limit</th> <th>3DGM concentration limit</th> <th>100 percentile concentration limit</th> </tr> </thead> <tbody> <tr> <td>Arsenic</td> <td>milligrams per litre</td> <td></td> <td></td> <td></td> <td>1.3</td> </tr> <tr> <td>Copper</td> <td>milligrams per litre</td> <td></td> <td></td> <td></td> <td>0.080</td> </tr> <tr> <td>Nickel</td> <td>milligrams per litre</td> <td></td> <td></td> <td></td> <td>5</td> </tr> <tr> <td>Oil and Grease</td> <td>milligrams per litre</td> <td></td> <td></td> <td></td> <td>10</td> </tr> <tr> <td>pH</td> <td>pH</td> <td></td> <td></td> <td></td> <td>6.5-9.0</td> </tr> <tr> <td>Total suspended solids</td> <td>milligrams per litre</td> <td></td> <td></td> <td></td> <td>30</td> </tr> <tr> <td>Zinc</td> <td>milligrams per litre</td> <td></td> <td></td> <td></td> <td>0.4</td> </tr> </tbody> </table> <p><b>POINT 29,31</b></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Units of Measure</th> <th>50 percentile concentration limit</th> <th>90 percentile concentration limit</th> <th>3DGM concentration limit</th> <th>100 percentile concentration limit</th> </tr> </thead> <tbody> <tr> <td>Total suspended solids</td> <td>milligrams per litre</td> <td></td> <td></td> <td></td> <td>50</td> </tr> <tr> <td>Turbidity</td> <td>nephelometric turbidity units</td> <td></td> <td></td> <td></td> <td>100</td> </tr> </tbody> </table> | Pollutant                         | Units of Measure  | 50 percentile concentration limit  | 90 percentile concentration limit  | 3DGM concentration limit | 100 percentile concentration limit | Arsenic | milligrams per litre |  |  |  | 1.3 | Copper | milligrams per litre |  |  |  | 0.080 | Nickel | milligrams per litre |  |  |  | 5 | Oil and Grease | milligrams per litre |  |  |  | 10 | pH | pH |  |  |  | 6.5-9.0 | Total suspended solids | milligrams per litre |  |  |  | 30 | Zinc | milligrams per litre |  |  |  | 0.4 | Pollutant | Units of Measure | 50 percentile concentration limit | 90 percentile concentration limit | 3DGM concentration limit | 100 percentile concentration limit | Total suspended solids | milligrams per litre |  |  |  | 50 | Turbidity | nephelometric turbidity units |  |  |  | 100 | Non-compliant (Low) | <ul style="list-style-type: none"> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>14-day monitoring data reporting as available on the IMC website.</li> <li>Sample laboratory reports.</li> </ul> | <p>A minor non-compliance (low risk) was identified regarding discharge water quality limits, in relation to an exceedance of the water quality concentration limit for Zinc (of 0.4 mg/L) was detected during investigations at licence discharge point (LDP) 5 on 13 October 2021. A concentration of 0.6 mg/L was recorded during the discharge of brine from the Appin North water treatment plant, likely due to inadequate mixing with Dendrobium Mine water.</p> <p>Therefore, as this was an unrepeated event, a CA is not deemed relevant. Furthermore, it is understood from audit interviews that IMC are developing a protocol around limiting brine discharge from Appin North water treatment plant when the Dendrobium Mine is not actively discharge or discharging minimal quantities.</p> |
| Pollutant              | Units of Measure  | 50 percentile concentration limit | 90 percentile concentration limit   | 3DGM concentration limit   | 100 percentile concentration limit |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| Arsenic                | milligrams per litre  |                                   |   |  | 1.3                                |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| Copper                 | milligrams per litre  |                                   |   |  | 0.080                              |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| Nickel                 | milligrams per litre  |                                   |   |  | 5                                  |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| Oil and Grease         | milligrams per litre  |                                   |   |  | 10                                 |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| pH                     | pH  |                                   |   |  | 6.5-9.0                            |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| Total suspended solids | milligrams per litre  |                                   |   |  | 30                                 |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| Zinc                   | milligrams per litre  |                                   |   |  | 0.4                                |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| Pollutant              | Units of Measure  | 50 percentile concentration limit | 90 percentile concentration limit   | 3DGM concentration limit   | 100 percentile concentration limit |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| Total suspended solids | milligrams per litre  |                                   |   |  | 50                                 |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| Turbidity              | nephelometric turbidity units   |                                   |   |  | 100                                |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| L2.5                   | Discharges from Point 5 can exceed the concentration limit for total suspended solids in the table above during release of stormwater from the Kemira Valley Sediment Ponds caused by rainfall totalling more than 60mm in the preceding 5 days.  | Note                              | N/A.  | N/A.   |                                    |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| L2.6                   | Discharge of total suspended solids and turbidity to waters from point 28 and point 30 is permitted at unspecified concentrations when the discharge occurs solely as a result of rainfall at the premises exceeding a total of 95 mm millimetres over any consecutive five day period.   | Note                              | N/A.  | N/A.   |                                    |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| 4                      | <b>Operating Conditions</b>   |                                   |   |  |                                    |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| O1                     | <b>Activities must be carried out in a competent manner</b>   |                                   |   |  |                                    |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |
| O1.1                   | <p>Licensed activities must be carried out in a competent manner. This includes:</p> <p>a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and</p> <p>b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.</p>  | Compliant                         | <ul style="list-style-type: none"> <li>Waste Management Plan (Rev 7.0, July 2023).</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>Site inspection completed 9, 10 and 11 October 2023.</li> <li>Complaints records.</li> <li>South32 Monthly Waste Figures spreadsheet.</li> </ul> | Review of documentation and conduct of the site inspection indicates compliance with the requirements of this condition. |                                    |                          |                                    |         |                      |  |  |  |     |        |                      |  |  |  |       |        |                      |  |  |  |   |                |                      |  |  |  |    |    |    |  |  |  |         |                        |                      |  |  |  |    |      |                      |  |  |  |     |           |                  |                                   |                                   |                          |                                    |                        |                      |  |  |  |    |           |                               |  |  |  |     |                     |  |   |

| Condition # | Details  | Compliance status | Relevant evidence   | Commentary  |
|-------------|--|-------------------|---|---|
| <b>O2</b>   | <b>Maintenance of plant and equipment</b>  |                   |   |   |
| O2.1        | All plant and equipment installed at the premises or used in connection with the licensed activity:<br>a) must be maintained in a proper and efficient condition; and<br>b) must be operated in a proper and efficient manner.   | Compliant         | <ul style="list-style-type: none"> <li>– Site inspection completed 9, 10 and 11 October 2023.</li> <li>– South32 Environmental Skills Matrix, tracking currency of training.</li> <li>– Environmental Awareness Training online course managed on the South32 IMC system.</li> <li>– Tracking of currency of personnel's completion of the Environmental Awareness Training online course.</li> <li>– Environment General Training &amp; Competency training form (IMCTRN0831) sample for environment team member, dated 27 April 2022.</li> <li>– Site Introduction – Electric Welder (DENF0243) form.</li> <li>– Site Introduction of Plant – Diesel Plant (DENF0209) form sample for LHD-1005 dated 2 June 2023.</li> <li>– Site Introduction of Plant – General Equipment (DENF0222) form.</li> </ul> | Review of relevant documentation verifies compliance with the requirements of this condition.   |
| <b>O3</b>   | <b>Dust</b>  |                   |   |   |
| O3.1        | The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.   | Compliant         | <ul style="list-style-type: none"> <li>– AQGHGMP (Rev 9, August 2023).</li> <li>– Complaints records.</li> <li>– 14-day monitoring data reporting as available on the IMC website.</li> <li>– Site inspection completed 9, 10 and 11 October 2023.</li> <li>– Annual Reviews for FY21, FY22, and FY23.</li> <li>– Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> </ul>  | Review of relevant documentation verifies compliance with the requirements of this condition. Observations from the site inspection were as follows: <ul style="list-style-type: none"> <li>– hardstand areas and access roads were maintained in a tidy condition to minimise dust emissions;</li> <li>– a water spray system was in operation on the portal road; and</li> <li>– activities at the KVLFF were not resulting in any visible dust emissions.</li> </ul> |
| <b>O4</b>   | <b>Waste Management</b>  |                   |   |   |
| O4.1        | All liquid and non-liquid wastes resulting from activities and processes at the Dendrobium Coal Mine must be assessed, classified and managed in accordance with the EPA's Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes (2008), or any other EPA document superseding this guideline. | Compliant         | <ul style="list-style-type: none"> <li>– Waste Management Plan (Rev 7.0, July 2023).</li> <li>– Annual Reviews for FY21, FY22, and FY23.</li> <li>– Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>– Site inspection completed 9, 10 and 11 October 2023.</li> <li>– Site interviews completed 9, 10 and 11 October 2023.</li> <li>– Complaints records.</li> <li>– South32 Monthly Waste Figures spreadsheet.</li> </ul>   | Review of documentation and conduct of the site inspection indicates compliance with the requirements of this condition.  |
| <b>O5</b>   | <b>Other operating conditions</b>  |                   |   |   |
| O5.1        | Bunding<br>All above ground tanks containing material that is likely to cause environmental harm must be banded or have an alternative spill containment system in-place.  | Compliant         | <ul style="list-style-type: none"> <li>– Site inspection completed 9, 10 and 11 October 2023.</li> <li>– Site interviews completed 9, 10 and 11 October 2023.</li> </ul>  | During the conduct of the audit, documentation reviewed and the site inspection indicates general compliance with the requirements of this condition.   |

| Condition # | Details  | Compliance status | Relevant evidence  | Commentary   |
|-------------|--|-------------------|--|--|
| 5           | <b>Monitoring and recording Conditions</b>   |                   |  |  |
| M1          | <b>Monitoring records</b>  |                   |  |  |
| M1.1        | The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.  | Note              | N/A.   | N/A.   |
| M1.2        | All records required to be kept by this licence must be:<br>a) in a legible form, or in a form that can readily be reduced to a legible form;<br>b) kept for at least 4 years after the monitoring or event to which they relate took place; and<br>c) produced in a legible form to any authorised officer of the EPA who asks to see them.                         | Compliant         | <ul style="list-style-type: none"> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>Environmental monitoring data available on the Dendrobium website.</li> </ul>  | Review of relevant documentation verifies compliance with the requirements of this condition.  |
| M1.3        | The following records must be kept in respect of any samples required to be collected for the purposes of this licence:<br>a) the date(s) on which the sample was taken;<br>b) the time(s) at which the sample was collected;<br>c) the point at which the sample was taken; and<br>d) the name of the person who collected the sample.                              | Compliant         | <ul style="list-style-type: none"> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>Environmental monitoring data available on the Dendrobium website.</li> <li>Chain of Custody samples for the audit period.</li> <li>Certificate of Analysis samples from ALS.</li> <li>EQulS sample.</li> </ul>  | <p><b>2020 IEA Recommendation:</b><br/>Ensure that the time of collection for each sample is included on sample records, such as the chain of custody.</p> <p><b>2023 IEA Findings:</b><br/><u>Status of 2020 IEA Recommendation:</u><br/>Review of Chain of Custody and Certificate of Analysis samples for the audit period indicate that while time of sample collection is able to be identified, it is not currently being completed. As such, this recommendation has not been addressed.</p> <p><u>2023 IEA Findings</u><br/>Review of relevant documentation verifies compliance with the requirements of this condition, with the 2020 IEA recommendation addressed via recording the time sample was taken on the field form and managed on the IMC database system EQulS.</p> |
| M2          | <b>Requirement to monitor concentration of pollutants discharged</b>   |                   |  |  |
| 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: | Compliant         | <ul style="list-style-type: none"> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>Environmental monitoring data available on the Dendrobium website.</li> <li>Chain of Custody samples for the audit period.</li> <li>Certificate of Analysis samples from ALS.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Site interviews completed 9, 10 and 11 October 2023.</li> </ul>                                       | Review of documentation verifies compliance with the requirements of this condition.   |
| M2.2        | Air monitoring requirements<br><b>POINT 20,21</b>  | Compliant         | <ul style="list-style-type: none"> <li>AQGHGMP (Rev 9, August 2023)</li> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>Environmental monitoring data available on the Dendrobium website.</li> <li>Chain of Custody samples for the audit period.</li> <li>Certificate of Analysis samples from ALS.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Site interviews completed 9, 10 and 11 October 2023.</li> </ul> | Data from the air quality and meteorological monitoring network were reviewed. In combination with the AQGGMP, these data identify the sampling method, units of measure, and sampling frequency. Example calibration certificates were inspected. No issues identified.   |

| Pollutant | Units of measure           | Frequency | Sampling Method |
|-----------|----------------------------|-----------|-----------------|
| PM10      | micrograms per cubic metre | Monthly   | Continuously    |

| Condition #            | Details  | Compliance status        | Relevant evidence  | Commentary  |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
|------------------------|--|--------------------------|--|---|-----------------|---------|----------------------|--------------------------|-------------|--------------|-----------------------------|--------------------------|-------------|--------|----------------------|--------------------------|-------------|--------|----------------------|--------------------------|-------------|----------------|----------------------|--------------------------|-------------|----|----|--------------------------|-------------|------------------------|----------------------|--------------------------|-------------|------|----------------------|--------------------------|-------------|-----------|------------------|-----------|-----------------|------------------------|----------------------|--------------------------|-------------|-----------|-------------------------------|--------------------------|-------------|-----------|---|--|
| M2.3                   | <p>Water and/or Land Monitoring Requirements</p> <p><b>POINT 5</b></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>Arsenic</td> <td>milligrams per litre</td> <td>Monthly during discharge</td> <td>Grab sample</td> </tr> <tr> <td>Conductivity</td> <td>microsiemens per centimetre</td> <td>Monthly during discharge</td> <td>Grab sample</td> </tr> <tr> <td>Copper</td> <td>milligrams per litre</td> <td>Monthly during discharge</td> <td>Grab sample</td> </tr> <tr> <td>Nickel</td> <td>milligrams per litre</td> <td>Monthly during discharge</td> <td>Grab sample</td> </tr> <tr> <td>Oil and Grease</td> <td>milligrams per litre</td> <td>Monthly during discharge</td> <td>Grab sample</td> </tr> <tr> <td>pH</td> <td>pH</td> <td>Monthly during discharge</td> <td>Grab sample</td> </tr> <tr> <td>Total suspended solids</td> <td>milligrams per litre</td> <td>Monthly during discharge</td> <td>Grab sample</td> </tr> <tr> <td>Zinc</td> <td>milligrams per litre</td> <td>Monthly during discharge</td> <td>Grab sample</td> </tr> </tbody> </table> <p><b>POINT 29,31</b></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>Total suspended solids</td> <td>milligrams per litre</td> <td>Monthly during discharge</td> <td>Grab sample</td> </tr> <tr> <td>Turbidity</td> <td>nephelometric turbidity units</td> <td>Monthly during discharge</td> <td>Grab sample</td> </tr> </tbody> </table> | Pollutant                | Units of measure   | Frequency   | Sampling Method | Arsenic | milligrams per litre | Monthly during discharge | Grab sample | Conductivity | microsiemens per centimetre | Monthly during discharge | Grab sample | Copper | milligrams per litre | Monthly during discharge | Grab sample | Nickel | milligrams per litre | Monthly during discharge | Grab sample | Oil and Grease | milligrams per litre | Monthly during discharge | Grab sample | pH | pH | Monthly during discharge | Grab sample | Total suspended solids | milligrams per litre | Monthly during discharge | Grab sample | Zinc | milligrams per litre | Monthly during discharge | Grab sample | Pollutant | Units of measure | Frequency | Sampling Method | Total suspended solids | milligrams per litre | Monthly during discharge | Grab sample | Turbidity | nephelometric turbidity units | Monthly during discharge | Grab sample | Compliant | <ul style="list-style-type: none"> <li>WMP (Rev 8.0, 4 August 2023).</li> <li>14-day monitoring data reporting as available on the IMC website.</li> <li>Sample laboratory certificates and chain of custody documentation.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>Site inspection completed 9, 10 and 11 October 2023.</li> </ul> | Review of documentation verifies compliance with the requirements of this condition. |
| Pollutant              | Units of measure   | Frequency                | Sampling Method  |   |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| Arsenic                | milligrams per litre   | Monthly during discharge | Grab sample  |   |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| Conductivity           | microsiemens per centimetre  | Monthly during discharge | Grab sample  |   |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| Copper                 | milligrams per litre   | Monthly during discharge | Grab sample  |   |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| Nickel                 | milligrams per litre   | Monthly during discharge | Grab sample  |   |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| Oil and Grease         | milligrams per litre   | Monthly during discharge | Grab sample  |   |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| pH                     | pH   | Monthly during discharge | Grab sample  |   |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| Total suspended solids | milligrams per litre   | Monthly during discharge | Grab sample  |   |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| Zinc                   | milligrams per litre   | Monthly during discharge | Grab sample  |   |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| Pollutant              | Units of measure   | Frequency                | Sampling Method  |   |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| Total suspended solids | milligrams per litre   | Monthly during discharge | Grab sample  |   |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| Turbidity              | nephelometric turbidity units  | Monthly during discharge | Grab sample  |   |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| <b>M3</b>              | <b>Testing methods – concentration limits</b>  |                          |  |   |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| M3.1                   | <p>Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:</p> <p>a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or</p> <p>b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or</p> <p>c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.</p>   | Compliant                | <ul style="list-style-type: none"> <li>AQGHGMP (Rev 9, August 2023).</li> <li>Calibration certificate samples.</li> <li>Site inspection completed 9, 10 and 11 October 2023.</li> </ul>  | Example calibration certificates were inspected. No issues identified.                        |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
|                        | <i>Note: The Protection of the Environment Operations (Clean Air) Regulation 2021 requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".</i>  | Note                     | N/A.   | N/A.  |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| M3.2                   | Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.   | Compliant                | <ul style="list-style-type: none"> <li>WMP (Rev 8.0, 4 August 2023)</li> <li>Sample laboratory certificates and chain of custody documentation</li> </ul>                                | Review of documentation verifies compliance with the requirements of this condition.          |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| <b>M4</b>              | <b>Recording of pollution complaints</b>   |                          |  |   |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| M4.1                   | The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.  | Compliant                | <ul style="list-style-type: none"> <li>Complaints records.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> </ul> | Review of relevant documentation verifies compliance with the requirements of this condition. |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |
| M4.2                   | <p>The record must include details of the following:</p> <p>a) the date and time of the complaint;</p> <p>b) the method by which the complaint was made;</p> <p>c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;</p> <p>d) the nature of the complaint;</p> <p>e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and</p> <p>f) if no action was taken by the licensee, the reasons why no action was taken.</p>  | Compliant                | <ul style="list-style-type: none"> <li>Complaints records.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> </ul> | Review of relevant documentation verifies compliance with the requirements of this condition. |                 |         |                      |                          |             |              |                             |                          |             |        |                      |                          |             |        |                      |                          |             |                |                      |                          |             |    |    |                          |             |                        |                      |                          |             |      |                      |                          |             |           |                  |           |                 |                        |                      |                          |             |           |                               |                          |             |           |   |  |



| Condition # | Details  | Compliance status       | Relevant evidence   | Commentary  |            |                    |                         |  |  |   |
|-------------|--|-------------------------|---|---|------------|--------------------|-------------------------|--|--|---|
| M4.3        | The record of a complaint must be kept for at least 4 years after the complaint was made.  | Compliant               | – Complaints records.   | Review of relevant documentation verifies compliance with the requirements of this condition.   |            |                    |                         |  |  |   |
| M4.4        | The record must be produced to any authorised officer of the EPA who asks to see them.   | Compliant               | – Complaints records.<br>– Annual Reviews for FY20, FY21, FY22, and FY23.<br>– Annual Returns for 2019/2020, 2020/2021, 2021/2022, and 2022/2023. | Review of relevant documentation verifies compliance with the requirements of this condition.   |            |                    |                         |  |  |   |
| <b>M5</b>   | <b>Telephone complaints line</b>   |                         |   |   |            |                    |                         |  |  |   |
| M5.1        | The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.  | Compliant               | IMC website.  | Review of relevant documentation verifies compliance with the requirements of this condition.   |            |                    |                         |  |  |   |
| M5.2        | The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.  | Compliant               | IMC website.  | Review of relevant documentation verifies compliance with the requirements of this condition.   |            |                    |                         |  |  |   |
| M5.3        | The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.   | Not triggered           | N/A.  | This condition was considered during previous audits.   |            |                    |                         |  |  |   |
| <b>M6</b>   | <b>Requirement to monitor volume or mass</b>   |                         |   |   |            |                    |                         |  |  |   |
| M6.1        | For each discharge point or utilisation area specified below, the licensee must monitor:<br>a) the volume of liquids discharged to water or applied to the area;<br>b) the mass of solids applied to the area;<br>c) the mass of pollutants emitted to the air;<br>at the frequency and using the method and units of measure, specified below.<br><br>POINT 24,25<br><table border="1"> <thead> <tr> <th>Frequency</th> <th>Unit of Measure</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>Continuous</td> <td>megalitres per day</td> <td>In line instrumentation</td> </tr> </tbody> </table><br>Note: The licensee may use flow monitoring data collected from licence discharge point 5 in the event that flow monitoring cannot be undertaken at points 24 or 25. | Frequency               | Unit of Measure   | Sampling Method   | Continuous | megalitres per day | In line instrumentation |  | – 14-day monitoring data reporting as available on the IMC website.<br>– SCADA observations.<br>– Site interviews completed 9, 10 and 11 October 2023. | Review of relevant documentation verifies compliance with the requirements of this condition. |
| Frequency   | Unit of Measure  | Sampling Method         |   |   |            |                    |                         |  |  |   |
| Continuous  | megalitres per day   | In line instrumentation |   |   |            |                    |                         |  |  |   |
| <b>M7</b>   | <b>Other monitoring and recording conditions</b>   |                         |   |   |            |                    |                         |  |  |   |
| M7.1        | All continuous monitoring equipment must be operated and maintained to achieve an availability of 90% during the reporting period. When continuous monitoring equipment is unavailable for greater than 48 hours, equivalent manual sampling, testing or estimation must be undertaken on a daily basis at the monitoring point.   | Compliant               | – AQGHGMP (Rev 9, August 2023).<br>– Annual Reviews for FY21, FY22, and FY23.<br>– Annual Returns for 2020/2021, 2021/2022, and 2022/2023.        | <b>Air Quality</b><br>Data from the air quality and meteorological monitoring network were reviewed. The data capture exceeded 90%.<br><br><b>Water</b><br>Data from the water monitoring network were reviewed. The data capture exceeded 90%. |            |                    |                         |  |  |   |
| M7.2        | In 2021, the licensee may use either high volume air samplers or photometers to measure PM10 as required in condition M2.2. This is to enable a continuation of monitoring during the period of transition between monitoring methods under the approved Air Quality and Greenhouse Gas Management Plan.   | Note                    | N/A.  | N/A.  |            |                    |                         |  |  |   |
| <b>6</b>    | <b>Reporting Conditions</b>  |                         |   |   |            |                    |                         |  |  |   |
| <b>R1</b>   | <b>Annual return documents</b>   |                         |   |   |            |                    |                         |  |  |   |
| R1.1        | The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:<br>1. a Statement of Compliance,<br>2. a Monitoring and Complaints Summary,<br>3. a Statement of Compliance - Licence Conditions,<br>4. a Statement of Compliance - Load based Fee,<br>5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,<br>6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and<br>7. a Statement of Compliance - Environmental Management Systems and Practices.<br>At the end of each reporting period, the EPA will provide to the licensee notification that the Annual Return is due.  | Compliant               | Annual Returns for 2020/2021, 2021/2022, and 2022/2023.   | Review of relevant documentation verifies compliance with the requirements of this condition.   |            |                    |                         |  |  |   |

| Condition # | Details  | Compliance status | Relevant evidence  | Commentary  |
|-------------|--|-------------------|--|---|
| R1.2        | An Annual Return must be prepared in respect of each reporting period, except as provided below.   | Compliant         | Annual Returns for 2020/2021, 2021/2022, and 2022/2023.  | Review of relevant documentation verifies compliance with the requirements of this condition.   |
| R1.3        | Where this licence is transferred from the licensee to a new licensee:<br>a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and<br>b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period. | Not triggered     | N/A.   | Not triggered during the audit period.  |
| R1.4        | Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:<br>a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or<br>b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.   | Not triggered     | N/A.   | Not triggered during the audit period.  |
| R1.5        | The Annual Return for the reporting period must be supplied to the EPA via eConnect EPA or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').  | Compliant         | Annual Returns for 2020/2021, 2021/2022, and 2022/2023.  | Review of relevant documentation verifies compliance with the requirements of this condition.   |
| R1.6        | The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.   | Compliant         | Annual Returns for 2019/2020, 2020/2021, 2021/2022, and 2022/2023.   | Review of relevant documentation verifies compliance with the requirements of this condition.   |
| R1.7        | Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:<br>a) the licence holder; or<br>b) by a person approved in writing by the EPA to sign on behalf of the licence holder.   | Compliant         | Annual Returns for 2020/2021, 2021/2022, and 2022/2023.  | Review of relevant documentation verifies compliance with the requirements of this condition.   |
|             | <i>Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.</i><br><i>Note: An application to transfer a licence must be made in the approved form for this purpose.</i>  | Note              | N/A.   | N/A.  |
| <b>R2</b>   | <b>Notification of environmental harm</b>  |                   |  |   |
| R2.1        | Notifications must be made by telephoning the Environment Line service on 131 555.   | Not triggered     | <ul style="list-style-type: none"> <li>- Pollution Incident Response Management Plan (PIRMP) (Rev 1.2, 16 February 2023).</li> <li>- Annual Reviews for FY21, FY22, and FY23.</li> </ul> | <p>Review of relevant documentation verifies this condition was not triggered during the audit period, with the following noted:</p> <ul style="list-style-type: none"> <li>- FY21: <ul style="list-style-type: none"> <li>- No incidents occurred that caused (or may have caused) material harm to the environment during the audit period.</li> <li>- It is noted a Penalty Notice in the amount of \$15,000 was issued by the EPA on 18 March 2021 for an uncontrolled release of water from the Kemira Valley Sediment Pond that occurred on 10 August 2020, which was during the 2020 IEA period.</li> </ul> <p>The EPA completed its investigation of the incident and determined that Dendrobium Coal did not comply with condition L1.1 of EPL 3241.</p> </li> <li>- FY22: <ul style="list-style-type: none"> <li>- No incidents occurred that caused (or may have caused) material harm to the environment during the audit period.</li> </ul> </li> <li>- FY23: <ul style="list-style-type: none"> <li>- No incidents occurred that caused (or may have caused) material harm to the environment during the audit period.</li> </ul> </li> </ul> |
| R2.2        | The licensee must provide written details of the notification to the EPA within 7 days of the date on which they became aware of the incident.   | Not triggered     | PIRMP (Rev 1.2, 16 February 2023).   | <p>Review of relevant documentation verifies this condition was not triggered during the audit period.</p> <p>A notification of minor brine leak to EPA at LDP5 occurred via email within 5 days on 29 Nov 2022 – it was not considered to</p>  |

| Condition # | Details   | Compliance status | Relevant evidence   | Commentary  |
|-------------|---|-------------------|---|---|
|             | Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.  |                   |   | have potential to have the potential to cause material environmental harm.  |
| <b>R3</b>   | <b>Written report</b>   |                   |   |   |
| R3.1        | Where an authorised officer of the EPA suspects on reasonable grounds that:<br>a) where this licence applies to premises, an event has occurred at the premises; or<br>b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.  | Compliant         | <ul style="list-style-type: none"> <li>– Request for Incident report from the EPA for Dendrobium Mine dated 8 March 2023.</li> <li>– Submission of report to EPA dated 24 March 2023.</li> <li>– Letter to EPA – Foaming Event – Allans Creek dated 24 March 2023.</li> </ul>   | Review of relevant documentation verifies compliance with the requirements of this condition.                                 |
| R3.2        | The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.  | Compliant         | <ul style="list-style-type: none"> <li>– Request for Incident report from the EPA for Dendrobium Mine dated 8 March 2023.</li> <li>– Submission of report to EPA dated 24 March 2023.</li> <li>– Letter to EPA – Foaming Event – Allans Creek dated 24 March 2023.</li> </ul>   | Review of relevant documentation verifies compliance with the requirements of this condition.                                 |
| R3.3        | The request may require a report which includes any or all of the following information:<br>a) the cause, time and duration of the event;<br>b) the type, volume and concentration of every pollutant discharged as a result of the event;<br>c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;<br>d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;<br>e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;<br>f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and<br>g) any other relevant matters | Compliant         | <ul style="list-style-type: none"> <li>– Request for Incident report from the EPA for Dendrobium Mine dated 8 March 2023.</li> <li>– Submission of report to EPA dated 24 March 2023.</li> <li>– Letter to EPA – Foaming Event – Allans Creek dated 24 March 2023.</li> </ul>   | Review of relevant documentation verifies compliance with the requirements of this condition.                                 |
| R3.4        | The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.   | Not triggered     | <ul style="list-style-type: none"> <li>– Request for Incident report from the EPA for Dendrobium Mine dated 8 March 2023.</li> <li>– Submission of report to EPA dated 24 March 2023.</li> <li>– Letter to EPA – Foaming Event – Allans Creek dated 24 March 2023.</li> <li>– Site interviews completed 9, 10 and 11 October 2023.</li> </ul> | Review of relevant documentation and conduct of interviews verifies this condition was not triggered during the audit period. |
| <b>7</b>    | <b>General Conditions</b>   |                   |   |   |
| <b>G1</b>   | <b>Copy of licence kept at the premises or plant</b>  |                   |   |   |
| G1.1        | A copy of this licence must be kept at the premises to which the licence applies.   | Compliant         | Site inspection completed 9, 10 and 11 October 2023.  | Review of relevant documentation verifies compliance with the requirements of this condition.                                 |
| G1.2        | The licence must be produced to any authorised officer of the EPA who asks to see it.   | Not triggered     | Site interviews completed 9, 10 and 11 October 2023.  | Review of relevant documentation and conduct of interviews verifies this condition was not triggered during the audit period. |
| G1.3        | The licence must be available for inspection by any employee or agent of the licensee working at the premises.  | Compliant         | Site inspection completed 9, 10 and 11 October 2023.  | Review of relevant documentation verifies compliance with the requirements of this condition.                                 |

| Condition #  | Details   | Compliance status | Relevant evidence | Commentary     |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
|--|---|-------------------|-------------------|----------------|---------------------------|---|------------------|---|--|------------------|--|--|---------------|---|---|---------------|--|---|-----------------|--|--|-----------------|---|--|---------------|--|---|----------------|---|--|---------------|---|---|--------------|--|---|------------------|---|--|---------------|--|--|---------------|---|---|---------------|--|---|------------------|--|--|--------------|---------------|------|---|
| G2   | <b>Other general conditions</b>   |                   |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| G2.1   | <p>Completed Programs</p> <table border="1"> <thead> <tr> <th>Program</th> <th>Description</th> <th>Completed Date</th> </tr> </thead> <tbody> <tr> <td>PRP 1 - Excess Mine Water</td> <td>Investigate and implement options to reuse excess mine water on site with the aim of eliminating the discharge or excess mine water to Allans Creek</td> <td>19-February-2005</td> </tr> <tr> <td>PRP 2 - Freshwater Conservation Program</td> <td>Investigate and implement options to reuse excess mine water in the Wollongong industrial area for industrial or commercial purposes, thereby reducing their need for freshwater</td> <td>30-December-2004</td> </tr> <tr> <td>PRP 3 - Operational Noise and Vibration Management</td> <td>Develop and document an Operational Noise and Vibration Management Plan which identifies measures to ensure compliance with licence noise and vibration limits</td> <td>01-April-2005</td> </tr> <tr> <td>PRP 4 - Noise and Vibration Reduction Program</td> <td>Program to minimise noise and vibration impacts from the Kemira Valley Rail Line. Stage 1 - Development of Plan - Completed 5 April 2005. Stage 2 - Implementation of Plan to be completed by 3 April 2006.</td> <td>03-April-2006</td> </tr> <tr> <td>PRP 5 - Kemira Valley Biological Assessment Monito</td> <td>Develop a monitoring program to characterize potential pollutants and water quality variables, and determine the impact of possible overflows from the Main Sedimentation Basin at Kemira Valley by 3 October 2006.</td> <td>03-October-2006</td> </tr> <tr> <td>PRP 6 - Kemira Valley Discharge Monitoring Program</td> <td>Develop and implement a program in consultation with EPA, to enable any discharges from the sedimentation basin to the receiving waters to be quantified and to assess compliance with Conditions L1.1 and L1.2. Completion date by 3 October 2005</td> <td>03-October-2006</td> </tr> <tr> <td>PRP 7 - Re-injection Monitoring Program</td> <td>Developed in consultation with EPA to demonstrate that any re-injection of water to be flooded underground mine workings is being undertaken in compliance with Condition L1.1 by 3 April 2006</td> <td>23-March-2006</td> </tr> <tr> <td>PRP 8 - Implementation of Mine Water Reuse Options</td> <td>Reduce the volume of mine water discharged to Allans Creek and reduce the volume of town water used on site by implementing the options for excess mine water reuse (identified by PRP 1). Completion date by 3 August 2006</td> <td>01-August-2006</td> </tr> <tr> <td>PRP 9 - Review of dust monitoring network</td> <td>Review of dust monitoring network for better detection of problem dust deposition and remedies at mine pit.(*)</td> <td>30-March-2006</td> </tr> <tr> <td>PRP 10 - Implement Underground Re-injection</td> <td>Implementation of the re-injection monitoring program developed in PRP 7 to determine whether the discharges will lead to deterioration in quality of water contained in the Old Nebo workings.</td> <td>30-June-2007</td> </tr> <tr> <td>PRP 11 - Investigation of Zinc and Copper levels</td> <td>Determine environmental effects of copper and zinc in minewater discharged from the mine site to Allans Creek and Port Kembla Harbour through LDP 5. Results will be used to review licence limits.</td> <td>19-February-2007</td> </tr> <tr> <td>PRP 12 - Investigation of options for minimal discharge</td> <td>Enhance opportunities to manage the sediment control and stormwater capture from mine with the goal of zero discharge from site. Due Date 30 April 2007.</td> <td>30-April-2007</td> </tr> <tr> <td>PRP13 - Discharge Pt 5 - Water Quality Investigation</td> <td>To verify the modelling predictions reported under PRP 11, Investigation of Zinc and Copper levels in Minewater Discharge at LDP 5. Reduction of 1-2ML/d of Sydney Drinking water use and reduction of sal</td> <td>21-March-2011</td> </tr> <tr> <td>PRP14 - Improve Reliability of LDP5 Flow Monitoring</td> <td>To implement action(s) to minimise the number of occasions and duration of time that the flowrate of water from LDP5 is not measured and recorded</td> <td>16-March-2011</td> </tr> <tr> <td>PRP15 - Coal Mine Particulate Matter Control Best Practice</td> <td>The Licensee must conduct a site specific Best Management Practice (BMP) determination to identify the most practicable means to reduce particle emissions.</td> <td>06-February-2012</td> </tr> <tr> <td>Environment Improvement Program 1 - Rail Noise Investigation</td> <td>Identify the specific contribution of sources to rail noise (e.g. brake, wheel and/or flange) and develop a strategic plan for the reduction of overall noise emissions.</td> <td>30-June-2016</td> </tr> </tbody> </table> | Program           | Description       | Completed Date | PRP 1 - Excess Mine Water | Investigate and implement options to reuse excess mine water on site with the aim of eliminating the discharge or excess mine water to Allans Creek | 19-February-2005 | PRP 2 - Freshwater Conservation Program | Investigate and implement options to reuse excess mine water in the Wollongong industrial area for industrial or commercial purposes, thereby reducing their need for freshwater | 30-December-2004 | PRP 3 - Operational Noise and Vibration Management | Develop and document an Operational Noise and Vibration Management Plan which identifies measures to ensure compliance with licence noise and vibration limits | 01-April-2005 | PRP 4 - Noise and Vibration Reduction Program | Program to minimise noise and vibration impacts from the Kemira Valley Rail Line. Stage 1 - Development of Plan - Completed 5 April 2005. Stage 2 - Implementation of Plan to be completed by 3 April 2006. | 03-April-2006 | PRP 5 - Kemira Valley Biological Assessment Monito | Develop a monitoring program to characterize potential pollutants and water quality variables, and determine the impact of possible overflows from the Main Sedimentation Basin at Kemira Valley by 3 October 2006. | 03-October-2006 | PRP 6 - Kemira Valley Discharge Monitoring Program | Develop and implement a program in consultation with EPA, to enable any discharges from the sedimentation basin to the receiving waters to be quantified and to assess compliance with Conditions L1.1 and L1.2. Completion date by 3 October 2005 | 03-October-2006 | PRP 7 - Re-injection Monitoring Program | Developed in consultation with EPA to demonstrate that any re-injection of water to be flooded underground mine workings is being undertaken in compliance with Condition L1.1 by 3 April 2006 | 23-March-2006 | PRP 8 - Implementation of Mine Water Reuse Options | Reduce the volume of mine water discharged to Allans Creek and reduce the volume of town water used on site by implementing the options for excess mine water reuse (identified by PRP 1). Completion date by 3 August 2006 | 01-August-2006 | PRP 9 - Review of dust monitoring network | Review of dust monitoring network for better detection of problem dust deposition and remedies at mine pit.(*) | 30-March-2006 | PRP 10 - Implement Underground Re-injection | Implementation of the re-injection monitoring program developed in PRP 7 to determine whether the discharges will lead to deterioration in quality of water contained in the Old Nebo workings. | 30-June-2007 | PRP 11 - Investigation of Zinc and Copper levels | Determine environmental effects of copper and zinc in minewater discharged from the mine site to Allans Creek and Port Kembla Harbour through LDP 5. Results will be used to review licence limits. | 19-February-2007 | PRP 12 - Investigation of options for minimal discharge | Enhance opportunities to manage the sediment control and stormwater capture from mine with the goal of zero discharge from site. Due Date 30 April 2007. | 30-April-2007 | PRP13 - Discharge Pt 5 - Water Quality Investigation | To verify the modelling predictions reported under PRP 11, Investigation of Zinc and Copper levels in Minewater Discharge at LDP 5. Reduction of 1-2ML/d of Sydney Drinking water use and reduction of sal | 21-March-2011 | PRP14 - Improve Reliability of LDP5 Flow Monitoring | To implement action(s) to minimise the number of occasions and duration of time that the flowrate of water from LDP5 is not measured and recorded | 16-March-2011 | PRP15 - Coal Mine Particulate Matter Control Best Practice | The Licensee must conduct a site specific Best Management Practice (BMP) determination to identify the most practicable means to reduce particle emissions. | 06-February-2012 | Environment Improvement Program 1 - Rail Noise Investigation | Identify the specific contribution of sources to rail noise (e.g. brake, wheel and/or flange) and develop a strategic plan for the reduction of overall noise emissions. | 30-June-2016 | Not triggered | N/A. | Programs identified by this condition precede the audit period. |
| Program  | Description   | Completed Date    |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| PRP 1 - Excess Mine Water                                    | Investigate and implement options to reuse excess mine water on site with the aim of eliminating the discharge or excess mine water to Allans Creek   | 19-February-2005  |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| PRP 2 - Freshwater Conservation Program                      | Investigate and implement options to reuse excess mine water in the Wollongong industrial area for industrial or commercial purposes, thereby reducing their need for freshwater  | 30-December-2004  |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| PRP 3 - Operational Noise and Vibration Management           | Develop and document an Operational Noise and Vibration Management Plan which identifies measures to ensure compliance with licence noise and vibration limits  | 01-April-2005     |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| PRP 4 - Noise and Vibration Reduction Program                | Program to minimise noise and vibration impacts from the Kemira Valley Rail Line. Stage 1 - Development of Plan - Completed 5 April 2005. Stage 2 - Implementation of Plan to be completed by 3 April 2006.   | 03-April-2006     |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| PRP 5 - Kemira Valley Biological Assessment Monito           | Develop a monitoring program to characterize potential pollutants and water quality variables, and determine the impact of possible overflows from the Main Sedimentation Basin at Kemira Valley by 3 October 2006.   | 03-October-2006   |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| PRP 6 - Kemira Valley Discharge Monitoring Program           | Develop and implement a program in consultation with EPA, to enable any discharges from the sedimentation basin to the receiving waters to be quantified and to assess compliance with Conditions L1.1 and L1.2. Completion date by 3 October 2005  | 03-October-2006   |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| PRP 7 - Re-injection Monitoring Program                      | Developed in consultation with EPA to demonstrate that any re-injection of water to be flooded underground mine workings is being undertaken in compliance with Condition L1.1 by 3 April 2006  | 23-March-2006     |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| PRP 8 - Implementation of Mine Water Reuse Options           | Reduce the volume of mine water discharged to Allans Creek and reduce the volume of town water used on site by implementing the options for excess mine water reuse (identified by PRP 1). Completion date by 3 August 2006   | 01-August-2006    |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| PRP 9 - Review of dust monitoring network                    | Review of dust monitoring network for better detection of problem dust deposition and remedies at mine pit.(*)  | 30-March-2006     |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| PRP 10 - Implement Underground Re-injection                  | Implementation of the re-injection monitoring program developed in PRP 7 to determine whether the discharges will lead to deterioration in quality of water contained in the Old Nebo workings.   | 30-June-2007      |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| PRP 11 - Investigation of Zinc and Copper levels             | Determine environmental effects of copper and zinc in minewater discharged from the mine site to Allans Creek and Port Kembla Harbour through LDP 5. Results will be used to review licence limits.   | 19-February-2007  |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| PRP 12 - Investigation of options for minimal discharge      | Enhance opportunities to manage the sediment control and stormwater capture from mine with the goal of zero discharge from site. Due Date 30 April 2007.  | 30-April-2007     |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| PRP13 - Discharge Pt 5 - Water Quality Investigation         | To verify the modelling predictions reported under PRP 11, Investigation of Zinc and Copper levels in Minewater Discharge at LDP 5. Reduction of 1-2ML/d of Sydney Drinking water use and reduction of sal  | 21-March-2011     |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| PRP14 - Improve Reliability of LDP5 Flow Monitoring          | To implement action(s) to minimise the number of occasions and duration of time that the flowrate of water from LDP5 is not measured and recorded   | 16-March-2011     |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| PRP15 - Coal Mine Particulate Matter Control Best Practice   | The Licensee must conduct a site specific Best Management Practice (BMP) determination to identify the most practicable means to reduce particle emissions.   | 06-February-2012  |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| Environment Improvement Program 1 - Rail Noise Investigation | Identify the specific contribution of sources to rail noise (e.g. brake, wheel and/or flange) and develop a strategic plan for the reduction of overall noise emissions.  | 30-June-2016      |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |
| 8  | <b>Special Conditions</b>   |                   |                   |                |                           |   |                  |   |  |                  |  |  |               |   |   |               |  |   |                 |  |  |                 |   |  |               |  |   |                |   |  |               |   |   |              |  |   |                  |   |  |               |  |  |               |   |   |               |  |   |                  |  |  |              |               |      |   |

| Condition # | Details   | Compliance status | Relevant evidence  | Commentary  |
|-------------|---|-------------------|--|---|
| <b>E1</b>   | <b>Allans Creek Monitoring Program</b>  |                   |  |   |
| E1.1        | <p>The licensee must undertake a water quality monitoring program to determine the effect of the discharge from point 5 on water quality in Allans Creek.</p> <p>The results of the monitoring must be compared to predicted concentrations and conclusions made about the bioavailability of As, Zn, Ni and Cu in the brine discharge study report (doc ref 2440/1330) titled "Allans Creek licensed discharge water quality and hydrochemical modelling report", EGI, 13 December 2019.</p> <p>A copy of the monitoring program report must be submitted to the EPA by the due date.</p> <p><b>DUE DATE:</b> 6 months following the commencement of operation of the new and expanded water treatment plants required by condition E1.1 of Environment Protection Licence 2504 held by Endeavour Coal Pty Ltd.</p>  | Compliant         | <ul style="list-style-type: none"> <li>– Chain of Custody samples.</li> <li>– Email to EPA dated 9 October 2023 submitted updated report.</li> </ul>   | <p>A monitoring program commenced over the FY21 reporting period to meet the requirements of Condition E1 of EPL 3241. The purpose of the program is to determine the effect of the increased discharge of brine from the Appin Mine water treatment plants on Allans Creek, following the commissioning of the new water treatment plant at Appin North.</p> <p>The results from the monitoring will be compared to the predictions in the modelling undertaken. The monitoring is undertaken at five sites along Allans Creek (including LDP 5). The results of the monitoring and the comparison to the modelling results is planned to be completed in FY22, pending commissioning timeframes for the permanent water treatment plant.</p> <p>Allans Creek Hydrogeochemical Model Update 2023</p> <p>Environmental Geochemistry International were engaged by IMC to undertake a hydrogeochemical assessment including modelling of the water quality at and in the vicinity of the Licence Discharge Point 5 (LDP5) within Allans Creek, Unanderra NSW. The purpose of this report is to meet the requirements of Condition E1.1 of EPL3241.</p> <p>The updated report was finalised and submitted 9 October 2023.</p> |
| <b>E2</b>   | <b>Slope stabilisation &amp; reinstatement of clean water diversions</b>  |                   |  |   |
| E2.1        | <p><b>Background</b></p> <p>Following heavy rainfall in early 2022, land instability resulted in the movement of soil in the sloped area northwest of the operations building at the Mount Kembla pit top. The EPA inspected the area on 23 September 2022 and found that further land slippage poses a potential risk of water pollution from material entering the clean water diversion drain and American Creek.</p> <p><b>Requirement</b></p> <p>The licensee must undertake slope stabilisation works to reinstate the clean water management system upstream of the pit top. The location of the area to be stabilised and the scope of works is contained in the report submitted to the EPA titled "Scope of Works – Dendrobium Mine Slope Stability", dated 27 September 2022.</p> <p>A Construction Environmental Management Plan must be submitted to the EPA for review prior to commencement of works. The plan must include assessment of potential noise, air and water emissions arising from the works and measures to mitigate these in accordance with relevant guidelines. The plan must also include a program for consultation with any member(s) of the community who may be affected by the works.</p> <p>The works must be completed by the due date.</p> <p><b>DUE DATE: 30 September 2023</b></p> <p>The licensee must notify the EPA in writing of the completion of the works</p> | Compliant         | <ul style="list-style-type: none"> <li>– Site interviews completed 9, 10 and 11 October 2023.</li> <li>– Site inspection completed 9, 10 and 11 October 2023.</li> <li>– Submission of CEMP to EPA dated 25 October 2022.</li> <li>– EPA acceptance of CEMP 2 November 2022.</li> <li>– EPA response to notification of completion of works, dated 25 September 2023.</li> </ul> | <p>Sighted Construction Environmental Management Plan (CEMP) and evidence that works have been completed during the site inspection. Noted that no complaints have been received due to construction noise.</p>   |

## Appendix F CCL 768

| Condition # | Details  | Compliance status | Relevant evidence   | Commentary  |
|-------------|--|-------------------|---|---|
|             | <b>General conditions</b>  |                   |   |   |
| <b>1</b>    | <b>Notice to Landholders</b>   |                   |   |   |
|             | <p>(a) Within 90 days from the date of grant or renewal of this mining lease, the lease holder must give each landholder notice in writing:</p> <p>(i) that this mining lease has been granted or renewed; and</p> <p>(ii) whether the lease includes the surface.</p> <p>The notice must include a plan identifying the lease area and each landholder and individual land parcel within the lease area.</p> <p>(b) If there are ten or more landholders to which notice must be given, the lease holder will be taken to have complied with condition 1(a) if a notice complying with condition 1(a) is published in a newspaper circulating in the region where the lease area is situated.</p>   | Not triggered     | N/A.  | Conduct of the audit has determined a renewal of CCL 768 is not due until 7 October 2029, while a variation of CCL 768 was issued in relation to variation of conditions by the NSW Resources Regulator to ensure consistency with Schedule 8A of the Mining Regulation 2016. |
| <b>2</b>    | <b>Security</b>  |                   |   |   |
|             | The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations under the mining lease, including obligations under the mining lease that may arise in the future. The amount of the security deposit to be provided has been assessed at \$18,682,000.  | Compliant         | <ul style="list-style-type: none"> <li>– 2020 IEA.</li> <li>– Annual Reviews for FY21, FY22, and FY23.</li> <li>– Rehabilitation Management Plan (RMP) (Rev 1.2, 30 June 2023).</li> <li>– Forward Program Friday 1 July 2023 to Monday 30 June 2026.</li> <li>– Dendrobium Colliery Annual Rehabilitation Report Friday 1 July 2022 to Friday 30 June 2023.</li> </ul> | The 2020 IEA reviewed a letter confirming that appropriate security deposit to the value was in place. Therefore IMC are compliant with this condition.   |
| <b>3</b>    | <b>Cooperation Agreement</b>   |                   |   |   |
|             | <p>The lease holder must make every reasonable attempt, and be able to demonstrate its attempts to the satisfaction of the Secretary, to enter into a cooperation agreement with the holder(s) of any overlapping authorisations issued under the Mining Act 1992 and petroleum titles issued under the Petroleum (Onshore) Act 1991. The cooperation agreement should address but not be limited to:</p> <ul style="list-style-type: none"> <li>• access arrangements</li> <li>• operational interaction procedures</li> <li>• dispute resolution</li> <li>• information exchange</li> <li>• well location</li> <li>• timing of drilling</li> <li>• potential resource extraction conflicts; and</li> <li>• rehabilitation issues.</li> </ul> | Not triggered     | <ul style="list-style-type: none"> <li>– Annual Reviews for FY21, FY22, and FY23.</li> <li>– MinView portal.</li> </ul>   | There are no overlapping titles. Therefore the requirements of this condition have not been triggered and there are currently no cooperation agreements in place.   |

| Condition # | Details   | Compliance status              | Relevant evidence  | Commentary   |
|-------------|---|--------------------------------|--|--|
| 4           | <b>Assessable Prospecting Operations</b>  |                                |  |  |
| 4           | <p>(a) The lease holder must not carry out any assessable prospecting operation on land over which this lease has been granted unless:</p> <p>(i) it is carried out in accordance with any necessary development consent; or</p> <p>(ii) if development consent is not required, the prior written approval of the Minister has been obtained.</p> <p>(b) The Minister may require the lease holder to provide such information as required to assist the Minister to consider an application for approval.</p> <p>(c) An approval granted by the Minister under this condition may be granted subject to terms.</p> <p>(d) The lease holder must comply with the approval granted to the holder under this condition</p>   | Non-compliant (Administrative) | Annual Reviews for FY21, FY22, and FY23.   | <p>Assessable Prospecting Operations (i.e. exploration drilling) during the FY23 Annual Review period was determined to have been undertaken without Development Consent or valid written approval from the Minister.</p> <p>Shortly after drilling commenced on borehole D-A3C-S17-33 in June 2023, it was identified that whilst the WaterNSW approval is valid to March 2025, the approval from DPE (MAAG0004533/ RR19249409) was only valid until 1 July 2022.</p> <p>Once identified, drilling on borehole D-A3C-S17-33 ceased and the non-compliance, identified as an ANC, was reported to the NSW Resources Regulator and reported in the FY23 Annual Review. The NSW Resources Regulator issued an Official Caution on 7 July 2023.</p> <p>Actions identified to prevent reoccurrence included:</p> <ul style="list-style-type: none"> <li>- revising the site set-up form to include activity approval dates and conditions;</li> <li>- developing a process map for pre-disturbance activities; and</li> <li>- uploading activity approvals into LandAssist with a relationship back to the mining lease/exploration licence, including all relevant information.</li> </ul> <p>As a result, a CA or OFI was not deemed relevant.</p> |
|             | <b>Special conditions 5.</b>  |                                |  |  |
| 5           | <b>Dams Safety – Mining Leases</b>  |                                |  |  |
|             | <p>(a) The lease holder must not mine within any part of the lease area which is within the notification area of the Avon, Cataract, Cordeaux and Upper Cordeaux No. 2 Dam without the prior written approval of the Minister and subject to any conditions the Minister may stipulate.</p> <p>(b) Where the lease holder desires to mine within the notification area, the lease holder must:</p> <p>(i) at least twelve (12) months before mining is to commence or such lesser time as the Minister may permit, notify the Minister of the desire to do so. A plan of the mining system to be implemented must accompany the notice; and</p> <p>(ii) provide such information as the Minister may direct.</p> <p>(c) The Minister must not, except in the circumstances set out in sub-paragraph (ii), grant approval unless sub-paragraph (i) of this paragraph has been complied with.</p> <p>(i) This sub-paragraph is complied with if:</p> <p>(a) Dams Safety NSW as constituted by section 6 of the Dams Safety Act 2015 and the owner of the dam have been notified in writing of the desire to mine referred to in paragraph (b).</p> <p>(b) the notifications referred to in clause (a) are accompanied by a description or plan of the area to be mined.</p> <p>(c) the Secretary has complied with any reasonable request made by Dams Safety NSW or the owner of the dam for further information in connection with the mining proposal.</p> <p>(d) Dams Safety NSW has made its recommendations concerning the mining proposal or has informed the Minister in writing that it does not propose to make any such recommendations; and</p> <p>(e) where Dams Safety NSW has made recommendations the approval is in terms that are:</p> <ul style="list-style-type: none"> <li>- in accordance with those recommendations; or</li> <li>- where the Minister does not accept those recommendations or any of them - in accordance with a determination under sub-paragraph (ii) of this paragraph.</li> </ul> | Compliant                      | <ul style="list-style-type: none"> <li>- Avon and Cordeaux Reservoirs Notification Area Management, Closure and Contingency Plan (Rev 3, 9 October 2015).</li> <li>- Site interviews completed 9, 10 and 11 October 2023.</li> <li>- Site inspection completed 9, 10 and 11 October 2023.</li> <li>- Annual Reviews for FY21, FY22, and FY23.</li> </ul> | Conduct of the audit determined mining is undertaken within the consented area.  |

| Condition # | Details  | Compliance status | Relevant evidence | Commentary   |
|-------------|--|-------------------|-------------------|--|
|             | <p>(ii) Where the Minister does not accept the recommendations of Dams Safety NSW or where Dams Safety NSW has failed to make any recommendations and has not informed the Minister in writing that it does not propose to make any recommendations, the approval shall be in terms that are, in relation to matters dealing with the safety of the dam:</p> <ul style="list-style-type: none"> <li>- as determined by agreement between the Minister and the Minister administering the Dams Safety Act 2015; or</li> <li>- in the event of failure to reach such agreement - as determined by the Premier.</li> </ul> <p>(d) The Minister, on notice from Dams Safety NSW, may at any time or times:</p> <p>(i) cancel any approval given where a notice pursuant to section 19 of the Dams Safety Act 2015 is given.</p> <p>(ii) suspend for a period of time, alter, omit from or add to any approval given or conditions imposed.</p> |                   |                   |  |
| 6           | <b>Purposes</b>  |                   |                   |  |
|             | <p>The lease holder shall not prospect or mine for coal within the areas shown on the plan annexed hereto and marked "B" insofar as such areas relate to the strata specified on that plan other than the mining of coal for the purposes of:-</p> <ul style="list-style-type: none"> <li>i. Tunnel in the area numbered 1</li> <li>ii. Shaft in the area numbered 2</li> <li>iii. Adit, borehole and shaft in the area numbered 5</li> <li>iv. Shaft in the area numbered 6 v. Borehole and shaft in the area numbered 7</li> <li>vi. Adit, borehole, shaft and tunnel in the area numbered 13</li> <li>vii. Shaft in the area numbered 18</li> <li>viii. Tunnel in the area numbered 25</li> <li>ix. Drive, shaft and tunnel in the area numbered 29</li> <li>x. Adit, borehole, drift and shaft in the area numbered 30.</li> </ul>   | Not triggered     | N/A.              | Conduct of the audit determines this condition has not been triggered. |



## Appendix G ML 1510

| Condition # | Details  | Compliance status | Relevant evidence   | Commentary   |    |      |      |           |           |   |
|-------------|--|-------------------|---|--|----|------|------|-----------|-----------|---|
|             | <b>General conditions</b>  |                   |   |  |    |      |      |           |           |   |
| <b>1</b>    | <b>Notice to Landholders</b>   |                   |   |  |    |      |      |           |           |   |
|             | <p>(a) Within 90 days from the date of grant or renewal of this mining lease, the lease holder must give each landholder notice in writing:</p> <p>(i) that this mining lease has been granted or renewed; and</p> <p>(ii) whether the lease includes the surface.</p> <p>The notice must include a plan identifying the lease area and each landholder and individual land parcel within the lease area.</p> <p>(b) If there are ten or more landholders to which notice must be given, the lease holder will be taken to have complied with condition 1(a) if a notice complying with condition 1(a) is published in a newspaper circulating in the region where the lease area is situated.</p>   | Not triggered     | N/A.  | Conduct of the audit has determined a renewal of CCL 768 is not due until 24 April 2024, while a variation of ML 1510 was issued in relation to variation of conditions by the NSW Resources Regulator to ensure consistency with Schedule 8A of the Mining Regulation 2016. |    |      |      |           |           |   |
| <b>2</b>    | <b>Group Security</b>  |                   |   |  |    |      |      |           |           |   |
|             | <p>The security deposit to be provided and maintained for this mining lease is part of a group security deposit.</p> <p>The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations under the mining leases covered by the group security deposit, including obligations under each mining lease that may arise in the future.</p> <p>The amount of the security deposit to be provided as a group security deposit has been assessed at \$2,678,000.</p> <p>The leases covered by the group security include this ML 1510 (1992) and:</p> <table border="1"> <thead> <tr> <th>Lease type</th> <th>Lease Number</th> <th>Act Year</th> </tr> </thead> <tbody> <tr> <td>ML</td> <td>1566</td> <td>1992</td> </tr> </tbody> </table> | Lease type        | Lease Number  | Act Year   | ML | 1566 | 1992 | Compliant | 2020 IEA. | The 2020 IEA reviewed a letter confirming that appropriate security deposit to the value was in place. Therefore IMC are compliant with this condition. |
| Lease type  | Lease Number   | Act Year          |   |  |    |      |      |           |           |   |
| ML          | 1566   | 1992              |   |  |    |      |      |           |           |   |
| <b>3</b>    | <b>Cooperation Agreement</b>   |                   |   |  |    |      |      |           |           |   |
|             | <p>The lease holder must make every reasonable attempt, and be able to demonstrate its attempts to the satisfaction of the Secretary, to enter into a cooperation agreement with the holder(s) of any overlapping authorisations issued under the Mining Act 1992 and petroleum titles issued under the Petroleum (Onshore) Act 1991. The cooperation agreement should address but not be limited to:</p> <ul style="list-style-type: none"> <li>• access arrangements</li> <li>• operational interaction procedures</li> <li>• dispute resolution</li> <li>• information exchange</li> <li>• well location</li> <li>• timing of drilling</li> <li>• potential resource extraction conflicts; and</li> <li>• rehabilitation issues.</li> </ul>   | Not triggered     | <ul style="list-style-type: none"> <li>– Annual Reviews for FY21, FY22, and FY23.</li> <li>– MinView portal.</li> </ul> | There are no overlapping titles. Therefore the requirements of this condition have not been triggered and there are currently no cooperation agreements in place.  |    |      |      |           |           |   |

| Condition # | Details   | Compliance status | Relevant evidence                        | Commentary  |
|-------------|---|-------------------|--|---|
| 4           | <b>Assessable Prospecting Operations</b>  |                   |  |   |
| 4           | <p>(a) The lease holder must not carry out any assessable prospecting operation on land over which this lease has been granted unless:</p> <p>(i) it is carried out in accordance with any necessary development consent; or</p> <p>(ii) if development consent is not required, the prior written approval of the Minister has been obtained.</p> <p>(b) The Minister may require the lease holder to provide such information as required to assist the Minister to consider an application for approval.</p> <p>(c) An approval granted by the Minister under this condition may be granted subject to terms.</p> <p>(d) The lease holder must comply with the approval granted to the holder under this condition</p> | Not triggered     | Annual Reviews for FY21, FY22, and FY23. | Conduct of the audit determines this condition has not been triggered.              |
|             | <b>Special conditions 5.</b>  |                   |  |   |
| 5           | <b>Aboriginal Place or Relic</b>  |                   |  |   |
|             | The lease holder shall not knowingly destroy, deface or damage any Aboriginal place or relic within the subject area except in accordance with an authority issued under the National Parks and Wildlife Act, 1974, and shall take every precaution in drilling, excavating or disturbing the land against any such destruction, defacement or damage.  | Compliant         | Annual Reviews for FY21, FY22, and FY23. | Conduct of the audit determined compliance with the requirements of this condition. |

## Appendix H ML 1566

| Condition # | Details  | Compliance status | Relevant evidence   | Commentary   |    |      |      |           |           |   |
|-------------|--|-------------------|---|--|----|------|------|-----------|-----------|---|
|             | <b>General conditions</b>  |                   |   |  |    |      |      |           |           |   |
| <b>1</b>    | <b>Notice to Landholders</b>   |                   |   |  |    |      |      |           |           |   |
|             | <p>(a) Within 90 days from the date of grant or renewal of this mining lease, the lease holder must give each landholder notice in writing:</p> <p>(i) that this mining lease has been granted or renewed; and</p> <p>(ii) whether the lease includes the surface.</p> <p>The notice must include a plan identifying the lease area and each landholder and individual land parcel within the lease area.</p> <p>(b) If there are ten or more landholders to which notice must be given, the lease holder will be taken to have complied with condition 1(a) if a notice complying with condition 1(a) is published in a newspaper circulating in the region where the lease area is situated.</p>   | Not triggered     | N/A.  | Conduct of the audit has determined a renewal of CCL 768 is not due until 24 April 2024, while a variation of ML 1510 was issued in relation to variation of conditions by the NSW Resources Regulator to ensure consistency with Schedule 8A of the Mining Regulation 2016. |    |      |      |           |           |   |
| <b>2</b>    | <b>Group Security</b>  |                   |   |  |    |      |      |           |           |   |
|             | <p>The security deposit to be provided and maintained for this mining lease is part of a group security deposit.</p> <p>The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations under the mining leases covered by the group security deposit, including obligations under each mining lease that may arise in the future.</p> <p>The amount of the security deposit to be provided as a group security deposit has been assessed at \$2,678,000.</p> <p>The leases covered by the group security include this ML 1510 (1992) and:</p> <table border="1"> <thead> <tr> <th>Lease type</th> <th>Lease Number</th> <th>Act Year</th> </tr> </thead> <tbody> <tr> <td>ML</td> <td>1566</td> <td>1992</td> </tr> </tbody> </table> | Lease type        | Lease Number  | Act Year   | ML | 1566 | 1992 | Compliant | 2020 IEA. | The 2020 IEA reviewed a letter confirming that appropriate security deposit to the value was in place. Therefore IMC are compliant with this condition. |
| Lease type  | Lease Number   | Act Year          |   |  |    |      |      |           |           |   |
| ML          | 1566   | 1992              |   |  |    |      |      |           |           |   |
| <b>3</b>    | <b>Cooperation Agreement</b>   |                   |   |  |    |      |      |           |           |   |
|             | <p>The lease holder must make every reasonable attempt, and be able to demonstrate its attempts to the satisfaction of the Secretary, to enter into a cooperation agreement with the holder(s) of any overlapping authorisations issued under the Mining Act 1992 and petroleum titles issued under the Petroleum (Onshore) Act 1991. The cooperation agreement should address but not be limited to:</p> <ul style="list-style-type: none"> <li>• access arrangements</li> <li>• operational interaction procedures</li> <li>• dispute resolution</li> <li>• information exchange</li> <li>• well location</li> <li>• timing of drilling</li> <li>• potential resource extraction conflicts; and</li> <li>• rehabilitation issues.</li> </ul>   | Not triggered     | <ul style="list-style-type: none"> <li>– Annual Reviews for FY21, FY22, and FY23.</li> <li>– MinView portal.</li> </ul> | There are no overlapping titles. Therefore the requirements of this condition have not been triggered and there are currently no cooperation agreements in place.  |    |      |      |           |           |   |

## Appendix I Mining Regulation 2016: Schedule 8A, Part 2 – Standard Conditions

| Condition # | Details   | Compliance status   | Relevant evidence   | Commentary   |
|-------------|---|---------------------|---|--|
|             | <b>Division 1 Protection of the environment and rehabilitation</b>  |                     |   |  |
| <b>4</b>    | <b>Must prevent or minimise harm to environment</b>   |                     |   |  |
| 4(1)        | 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.  | Non-compliant (Low) | <ul style="list-style-type: none"> <li>Findings of this audit.</li> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Annual Returns for 2020/2021, 2021/2022, and 2022/2023.</li> <li>14-day monitoring data reporting as available on the IMC website.</li> <li>Site inspection completed 9, 10 and 11 October 2023.</li> <li>Site interviews completed 9, 10 and 11 October 2023.</li> <li>Swamp Impact, Monitoring, Management and Contingency Plan LW 19 (Area 3A) (February 2021).</li> </ul> | <p><u>2023 IEA Findings</u></p> <p>The audit determined non-compliances in relation to documentation of subsidence performance measures for Swamp 15a in the SIMMCP for LW 19, which are inconsistent with the requirements of the SMP Approval for LW 19 and conditions of DA 60-03-2001.</p> <p>This has resulted in these performance measures being incorrectly adopted in EOP reporting for LW 19. The incorrect documentation of these performance measures as 'minor' and 'no significant change', instead of 'negligible', has resulted in development and implementation (i.e. triggering) of TARPs for LW 19 that are not correctly considering potential impacts and potential exceedance of performance measures for Swamp 15a.</p> <p>Whether harm to the environment has occurred due to this error was not able to be confirmed during the audit. However, a non-compliance has been found in relation to taking all reasonable steps to prevent or minimise harm to the environment due to the incorrect development and implementation (i.e. triggering) of TARPs, and associated reporting, built around the adoption of incorrect performance measures.</p> <p>Further discussion is provided at Schedule 3, Conditions 5 and 6 of Appendix D of the main audit report.</p>   |
| 4(2)        | <i>In this clause—<b>harm</b> to the environment has the same meaning as in the Protection of the Environment Operations Act 1997.</i>  | Note                | N/A.  | N/A.   |
| <b>5</b>    | <b>Rehabilitation to occur as soon as reasonably practicable after disturbance</b>  |                     |   |  |
|             | 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. | Compliant           | <ul style="list-style-type: none"> <li>Annual Reviews for FY21, FY22, and FY23.</li> <li>Dendrobium Colliery Annual Rehabilitation Report Friday 1 July 2022 to Friday 30 June 2023.</li> <li>Rehabilitation Management Plan (RMP) (Rev 1.2, 30 June 2023).</li> <li>WC21 and Donalds Castle Creek Rehabilitation Plan (Rev 4, 31 January 2023).</li> <li>Site interviews completed 9, 10 and 11 October 2023.</li> <li>Site inspection completed 9, 10 and 11 October 2023.</li> </ul>                 | <p>The following in relation to rehabilitation during the audit period:</p> <ul style="list-style-type: none"> <li><b>FY21:</b> Review of documentation indicates compliance with the requirements of this condition during FY21 is not relevant due to the introduction of Schedule 4, Condition 18A occurring after the FY21 reporting period. However, the following is noted in relation to rehabilitation: <ul style="list-style-type: none"> <li>Rehabilitation cost estimate (RCE): The RCE for the Dendrobium operations was reviewed during the reporting period. This RCE was provided as Appendix B to the FY21 Annual Review.</li> <li>Progressive rehabilitation: Legacy sites rehabilitated were either not within the CCL 768 boundary or had a very small footprint (i.e. Summit Park Switchyard, Mt Keira [approximately 150 m2 hand-seeded with grass seed], O'Brien's Gap Switchyard [approximately 300 m2 hand-seeded with grass seed], Greenhills Substation [approximately 2,000 m2 hydro-mulched]).</li> <li>Completion of rehabilitation: Completed rehabilitation areas increased by 0.12 hectares (ha), with 7.97 ha in financial year (FY) and 8.09 ha in FY21.</li> </ul> </li> <li><b>FY22:</b> Review of documentation indicates compliance with the requirements of this condition during FY22 is not relevant due to the introduction of Schedule 4, Condition 18A occurring after the FY21 reporting period. However, the following is noted in relation to rehabilitation: <ul style="list-style-type: none"> <li>RCE: The RCE for the Dendrobium operations was reviewed during the reporting period. This RCE was provided as Appendix B to the FY22 Annual Review.</li> <li>Progressive rehabilitation: Investigations and studies were conducted into the removal of redundant infrastructure associated with O'Brien's Drift, particularly at the KVCLF.</li> </ul> </li> </ul> |

| Condition # | Details  | Compliance status | Relevant evidence  | Commentary   |
|-------------|--|-------------------|--|--|
|             |  |                   |  | <ul style="list-style-type: none"> <li>Completion of rehabilitation: Completed rehabilitation areas increased by 32.91 hectares (ha), with 8.09 ha in FY21 and 41 ha in FY22, with completion of a rehabilitation campaign to demolish and rehabilitate redundant powerline circuits that traverse urban and rural residential areas generally located to the East of the Illawarra Escarpment State Conservation Area. To conclude this phase of rehabilitation work, a part lease relinquishment application for CCL 768, which was lodged with the NSW Resources Regulator. The report was accepted in July 2022.</li> <li><b>FY23:</b> Review of documentation indicates compliance with the requirements of this condition during FY23, with the following noted: <ul style="list-style-type: none"> <li>Progressive rehabilitation: Vegetation removal and topsoil stripping occurred at the Ventilation No. 2 and 3 Shafts in preparation of gas management and ancillary infrastructure. This rehabilitation was sighted during the site inspection completed for the audit.</li> </ul> <p>Land preparation works were undertaken for a land slip that occurred on the western boundary of the Dendrobium Pit Top; including soil nails, shotcrete and soil reinforcing mesh as designed by a specialist engineering consultant. Works commenced in FY23 and are expected to be completed in FY24.</p> <p>Investigations and studies continued into the removal of redundant infrastructure associated with O'Brien's Drift. These included a Hazardous Building Materials Survey, engineering for belt removal and design work associated with the Endeavour Energy powerline relocation.</p> <p>A Hazardous Building Materials Survey was undertaken for the Corrimal No. 3 site and Cordeaux Pit Top redundant coal bins, which are planned to be removed in FY24/FY25.</p></li> <li>Rehabilitation monitoring: No rehabilitation monitoring was undertaken in the reporting period at surface facilities, with no recent rehabilitation has been undertaken.</li> <li>Completion of rehabilitation: Completion of progressive rehabilitation in relation to exploration drilling within CCL 768 focussing on sites drilling in FY22 and FY23, with rehabilitation completed at the cessation of drilling and/or monitoring. Rehabilitated areas are monitored for success over several years.</li> </ul> |
| <b>6</b>    | <b>Rehabilitation must achieve final land use</b>  |                   |  |  |
| 6(1)        | The holder of a mining lease must ensure that rehabilitation of the mining area achieves the final land use for the mining area.                                     | Not triggered     | N/A.   | <p>Cessation of mining operations will not occur until 31 December 2030, with review of Schedule 4, Condition 21(b) indicating a Mine Closure Plan is not required to be submitted until at least 2 years prior to the planned cessation of mining.</p> <p>Therefore, this required has not been triggered during the audit period.</p> <p>However, it is noted a Conceptual Site Closure Plan has been developed that generally meets these requirements and all requirements will be met closer to mine closure.</p>   |
| 6(2)        | The holder of the mining lease must ensure any planning approval has been obtained that is necessary to enable the holder to comply with subclause (1).              | Not triggered     | N/A.   | Review of relevant documentation indicates planning approval has not been required to comply with subclause (1).   |
| 6(3)        | The holder of the mining lease must identify and record any reasonably foreseeable hazard that presents a risk to the holder's ability to comply with subclause (1). | Compliant         | <ul style="list-style-type: none"> <li>Rehabilitation Management Plan (RMP) (Rev 1.2, 30 June 2023).</li> <li>WC21 and Donalds Castle Creek Rehabilitation Plan (Rev 4, 31 January 2023).</li> </ul> | Review of relevant documentation verifies compliance with these requirements.  |
|             | <i>Note</i> Clause 7 requires a rehabilitation risk assessment to be conducted whenever a hazard is identified under this subclause.                                 | Note              | N/A.   | N/A.   |

| Condition #                       | Details   | Compliance status | Relevant evidence  | Commentary   |
|-----------------------------------|---|-------------------|--|--|
| 6(4)                              | <p>(4) In this clause—</p> <p><b>final land use</b> for the mining area means the final landform and land uses to be achieved for the mining area—</p> <p>(a) as set out in the rehabilitation objectives statement and rehabilitation completion criteria statement, and</p> <p>(b) for a large mine—as spatially depicted in the final landform and rehabilitation plan, and</p> <p>(c) if the final land use for the mining area is required by a condition of development consent for activities under the mining lease—as stated in the condition.</p> <p><b>planning approval</b> means—</p> <p>(a) a development consent within the meaning of the Environmental Planning and Assessment Act 1979, or</p> <p>(b) an approval under that Act, Division 5.1.</p> | Note              | N/A.   | N/A.   |
| <b>Division 2 Risk assessment</b> |   |                   |  |  |
| 7                                 | <b>Rehabilitation risk assessment</b>   |                   |  |  |
| 7(1)                              | <p>The holder of a mining lease must conduct a risk assessment (a <b>rehabilitation risk assessment</b>) that—</p> <p>(a) identifies, assesses and evaluates the risks that need to be addressed to achieve the following in relation to the mining lease—</p> <p>(i) the rehabilitation objectives,</p> <p>(ii) the rehabilitation completion criteria,</p> <p>(iii) for large mines—the final land use as spatially depicted in the final landform and rehabilitation plan, and</p> <p>(b) identifies the measures that need to be implemented to eliminate, minimise or mitigate the risks.</p>  | Compliant         | RMP (Rev 1.2, 30 June 2023).   | Review of relevant documentation verifies compliance with this requirement via Section 3 of the RMP.   |
| 7(2)                              | The holder of the mining lease must implement the measures identified.  | Compliant         | <ul style="list-style-type: none"> <li>– Annual Reviews for FY21, FY22, and FY23.</li> <li>– Dendrobium Colliery Annual Rehabilitation Report Friday 1 July 2022 to Friday 30 June 2023.</li> <li>– RMP (Rev 1.2, 30 June 2023).</li> <li>– WC21 and Donalds Castle Creek Rehabilitation Plan (Rev 4, 31 January 2023).</li> <li>– Site interviews completed 9, 10 and 11 October 2023.</li> <li>– Site inspection completed 9, 10 and 11 October 2023.</li> </ul> | <p>The following in relation to rehabilitation during the audit period:</p> <ul style="list-style-type: none"> <li>– <b>FY21:</b> Review of documentation indicates compliance with the requirements of this condition during FY21 is not relevant due to the introduction of Schedule 4, Condition 18A occurring after the FY21 reporting period. However, the following is noted in relation to rehabilitation: <ul style="list-style-type: none"> <li>– Rehabilitation cost estimate (RCE): The RCE for the Dendrobium operations was reviewed during the reporting period. This RCE was provided as Appendix B to the FY21 Annual Review.</li> <li>– Progressive rehabilitation: Legacy sites rehabilitated were either not within the CCL 768 boundary or had a very small footprint (i.e. Summit Park Switchyard, Mt Keira [approximately 150 m2 hand-seeded with grass seed], O'Brien's Gap Switchyard [approximately 300 m2 hand-seeded with grass seed], Greenhills Substation [approximately 2,000 m2 hydro-mulched]).</li> <li>– Completion of rehabilitation: Completed rehabilitation areas increased by 0.12 hectares (ha), with 7.97 ha in financial year (FY) and 8.09 ha in FY21.</li> </ul> </li> <li>– <b>FY22:</b> Review of documentation indicates compliance with the requirements of this condition during FY22 is not relevant due to the introduction of Schedule 4, Condition 18A occurring after the FY21 reporting period. However, the following is noted in relation to rehabilitation: <ul style="list-style-type: none"> <li>– RCE: The RCE for the Dendrobium operations was reviewed during the reporting period. This RCE was provided as Appendix B to the FY22 Annual Review.</li> <li>– Progressive rehabilitation: Investigations and studies were conducted into the removal of redundant infrastructure associated with O'Brien's Drift, particularly at the KVCLF.</li> </ul> </li> </ul> |

| Condition # | Details  | Compliance status | Relevant evidence            | Commentary  |
|-------------|--|-------------------|------------------------------|---|
|             |  |                   |                              | <ul style="list-style-type: none"> <li>Completion of rehabilitation: Completed rehabilitation areas increased by 32.91 hectares (ha), with 8.09 ha in FY21 and 41 ha in FY22, with completion of a rehabilitation campaign to demolish and rehabilitate redundant powerline circuits that traverse urban and rural residential areas generally located to the East of the Illawarra Escarpment State Conservation Area. To conclude this phase of rehabilitation work, a part lease relinquishment application for CCL 768, which was lodged with the NSW Resources Regulator. The report was accepted in July 2022.</li> <li><b>FY23:</b> Review of documentation indicates compliance with the requirements of this condition during FY23, with the following noted: <ul style="list-style-type: none"> <li>Progressive rehabilitation: Vegetation removal and topsoil stripping occurred at the Ventilation No. 2 and 3 Shafts in preparation of gas management and ancillary infrastructure. This rehabilitation was sighted during the site inspection completed for the audit.</li> </ul> <p>Land preparation works were undertaken for a land slip that occurred on the western boundary of the Dendrobium Pit Top; including soil nails, shotcrete and soil reinforcing mesh as designed by a specialist engineering consultant. Works commenced in FY23 and are expected to be completed in FY24.</p> <p>Investigations and studies continued into the removal of redundant infrastructure associated with O'Brien's Drift. These included a Hazardous Building Materials Survey, engineering for belt removal and design work associated with the Endeavour Energy powerline relocation.</p> <p>A Hazardous Building Materials Survey was undertaken for the Corrimal No. 3 site and Cordeaux Pit Top redundant coal bins, which are planned to be removed in FY24/FY25.</p> </li> <li>Rehabilitation monitoring: No rehabilitation monitoring was undertaken in the reporting period at surface facilities, with no recent rehabilitation has been undertaken.</li> <li>Completion of rehabilitation: Completion of progressive rehabilitation in relation to exploration drilling within CCL 768 focussing on sites drilling in FY22 and FY23, with rehabilitation completed at the cessation of drilling and/or monitoring. Rehabilitated areas are monitored for success over several years.</li> </ul> |
| 7(3)        | The holder of a mining lease must conduct a rehabilitation risk assessment—<br>(a) for a large mine—before preparing a rehabilitation management plan, and<br>(b) for a small mine—before preparing the rehabilitation outcome documents for the mine, and<br>(c) whenever a hazard is identified under clause 6(3)—as soon as reasonably practicable after it is identified, and<br>(d) whenever given a written direction to do so by the Secretary. | Compliant         | RMP (Rev 1.2, 30 June 2023). | Review of relevant documentation verifies compliance with this requirement via Section 3 of the RMP.  |
|             | <b>Division 3 Rehabilitation documents</b>   |                   |                              |   |
| <b>8</b>    | <b>Application of Division</b>   |                   |                              |   |
|             | This Division does not apply to a mining lease unless—<br>(a) the security deposit required under the mining lease is greater than the minimum deposit prescribed under the Act, section 261BF in relation to that type of mining lease, or<br>(b) the Secretary gives a written direction to the holder of the mining lease that this Division, or a provision of this Division, applies to the mining lease.   | Note              | N/A.                         | N/A.  |

| Condition # | Details  | Compliance status | Relevant evidence  | Commentary  |
|-------------|--|-------------------|--|---|
| <b>9</b>    | <b>General requirements for documents</b>  |                   |  |   |
|             | A document required to be prepared under this Division must—<br>(a) be in a form approved by the Secretary, and<br><i>Note— The approved forms are available on the Department's website.</i><br>(b) include any matter required to be included by the form, and<br>(c) if required to be given to the Secretary—be given in a way approved by the Secretary.  | Compliant         | RMP (Rev 1.2, 30 June 2023).   | The RMP has been written and implemented in accordance with Schedule 4, Condition 20 of DA 60-03-2001 and the NSW Resources Regulator's <i>Form and Way: Rehabilitation Management Plan for Large Mines</i> .   |
| <b>10</b>   | <b>Rehabilitation management plans for large mines</b>   |                   |  |   |
| 10(1)       | The holder of a mining lease relating to a large mine must prepare a plan (a rehabilitation management plan) for the mining lease that includes the following—<br>(a) a description of how the holder proposes to manage all aspects of the rehabilitation of the mining area,<br>(b) a description of the steps and actions the holder proposes to take to comply with the conditions of the mining lease that relate to rehabilitation,<br>(c) a summary of rehabilitation risk assessments conducted by the holder,<br>(d) the risk control measures identified in the rehabilitation risk assessments,<br>(e) the rehabilitation outcome documents for the mining lease,<br>(f) a statement of the performance outcomes for the matters addressed by the rehabilitation outcome documents and the ways in which those outcomes are to be measured and monitored. | Compliant         | RMP (Rev 1.2, 30 June 2023).   | Review of the RMP indicates this requirement is addressed.  |
| 10(2)       | If a rehabilitation outcome document has not been approved by the Secretary, the holder of the mining lease must include a proposed version of the document.   | Compliant         | RMP (Rev 1.2, 30 June 2023).   | Review of the RMP indicates this requirement is addressed.  |
| 10(3)       | A rehabilitation management plan is not required to be given to the Secretary for approval.  | Note              | N/A.   | N/A.  |
| 10(4)       | The holder of the mining lease—<br>(a) must implement the matters set out in the rehabilitation management plan, and<br>(b) if the forward program specifies timeframes for the implementation of the matters—must implement the matters within those timeframes.  | Compliant         | <ul style="list-style-type: none"> <li>– RMP (Rev 1.2, 30 June 2023).</li> <li>– Forward Program Friday 1 July 2023 to Monday 30 June 2026.</li> </ul>   | Review of documentation indicates compliance with these requirements, with the following noted: <ul style="list-style-type: none"> <li>– An RMP, including draft rehabilitation objectives and criteria, was submitted to the NSW Resources Regulator on 30 June 2022, in accordance with legislative rehabilitation reforms under the <i>Mining Act 1992</i>, through the Mining Amendment Regulation (Standard Conditions for Mining Leases – Rehabilitation) Regulation 2021.</li> <li>– The RMP was revised 10 October 2022 to include requirements from, and remove reference to, the Landscape Management Plan. A further update was submitted on 30 June 2023 in relation to updates to rehabilitation objectives and final land-use rehabilitation plans following feedback from the NSW Resources Regulator. The objectives in Table 7 have been adopted into the RMP.</li> <li>– A Forward Program from 1 July 2023 to Monday 30 June 2026 was sighted during the audit.</li> </ul> |
| <b>11</b>   | <b>Amendment of rehabilitation management plans</b>  |                   |  |   |
|             | The holder of a mining lease must amend the rehabilitation management plan for the mining lease as follows—<br>(a) to substitute the proposed version of a rehabilitation outcome document with the version approved by the Secretary—within 30 days after the document is approved,<br>(b) as a consequence of an amendment made under clause 14 to a rehabilitation outcome document—within 30 days after the amendment is made,<br>(c) to reflect any changes to the risk control measures in the prepared plan that are identified in a rehabilitation risk assessment—as soon as practicable after the rehabilitation risk assessment is conducted,<br>(d) whenever given a written direction to do so by the Secretary—in accordance with the direction.   | Not triggered     | <ul style="list-style-type: none"> <li>– RMP (Rev 1.2, 30 June 2023).</li> <li>– Site interviews completed 9, 10 and 11 October 2023.</li> <li>– Annual Reviews for FY21, FY22, and FY23.</li> </ul> | Review of relevant documentation and conduct of audit interviews indicates this requirement has not been triggered during the audit period.   |



| Condition # | Details  | Compliance status | Relevant evidence   | Commentary  |
|-------------|--|-------------------|---|---|
| <b>12</b>   | <b>Rehabilitation outcome documents</b>  |                   |   |   |
| 12(1)       | The holder of a mining lease must prepare the following documents (the rehabilitation outcome documents) for the mining lease and give them to the Secretary for approval—<br>(a) the rehabilitation objectives statement, which sets out the rehabilitation objectives required to achieve the final land use for the mining area,<br>(b) the rehabilitation completion criteria statement, which sets out criteria, the completion of which will demonstrate the achievement of the rehabilitation objectives,<br>(c) for a large mine, the final landform and rehabilitation plan, showing a spatial depiction of the final land use.   | Compliant         | RMP (Rev 1.2, 30 June 2023).  | Review of the RMP indicates this requirement is addressed.  |
| 12(2)       | If the final land use for the mining area is required by a condition of development consent for activities under the mining lease, the holder of the mining lease must ensure the rehabilitation outcome documents are consistent with that condition.   | Not triggered     | N/A.  | Conditions of DA 60-03-2001 do not specific a final land use for the mining area.   |
| <b>13</b>   | <b>Forward program and annual rehabilitation report</b>  |                   |   |   |
| 13(1)       | The holder of a mining lease must prepare a program (a forward program) for the mining lease that includes the following—<br>(a) a schedule of mining activities for the mining area for the next 3 years,<br>(b) a summary of the spatial progression of rehabilitation through its various phases for the next 3 years,<br>(c) a requirement that the rehabilitation of land and water disturbed by mining activities under the mining lease must occur as soon as reasonably practicable after the disturbance occurs.  | Compliant         | Forward Program Friday 1 July 2023 to Monday 30 June 2026.  | Review of the Forward Program Friday 1 July 2023 to Monday 30 June 2026 indicates this requirement is addressed.                                  |
| 13(2)       | The holder of a mining lease must prepare a report (an annual rehabilitation report) for the mining lease that includes—<br>(a) a description of the rehabilitation undertaken over the annual reporting period,<br>(b) a report demonstrating the progress made through the phases of rehabilitation provided for in the forward program applying to the reporting period,<br>(c) a report demonstrating progress made towards the achievement of the following—<br>(i) the objectives set out in the rehabilitation objectives statement,<br>(ii) the criteria set out in the rehabilitation completion criteria statement,<br>(iii) for large mines—the final land use as spatially depicted in the final landform and rehabilitation plan. | Compliant         | Dendrobium Colliery Annual Rehabilitation Report Friday 1 July 2022 to Friday 30 June 2023.   | Review of the Dendrobium Colliery Annual Rehabilitation Report Friday 1 July 2022 to Friday 30 June 2023 indicates this requirement is addressed. |
| 13(3)       | If a rehabilitation outcome document has not been approved by the Secretary, the holder of the mining lease must rely on a proposed version of the document.   | Note              | N/A.  | N/A.  |
| 13(4)       | The holder of the mining lease must give the forward program and annual rehabilitation report to the Secretary.  | Compliant         | <ul style="list-style-type: none"> <li>– Forward Program Friday 1 July 2023 to Monday 30 June 2026.</li> <li>– Dendrobium Colliery Annual Rehabilitation Report Friday 1 July 2022 to Friday 30 June 2023.</li> </ul> | Review of the documentation verifies this requirement is addressed.   |
| 13(5)       | In this clause—<br>annual reporting period means each period of 12 months commencing on—<br>(a) the date on which the mining lease is granted, or<br>(b) if the Secretary approves another date in relation to the mining lease—the other date.  | Note              | N/A.  | N/A.  |
| <b>14</b>   | <b>Amendment of rehabilitation outcome documents and forward program</b>   |                   |   |   |
| 14(1)       | This clause applies to—<br>(a) a rehabilitation outcome document if it has been approved by the Secretary, and<br>(b) a forward program if it has been given to the Secretary.   | Note              | N/A.  | N/A.  |

| Condition # | Details  | Compliance status | Relevant evidence   | Commentary   |
|-------------|--|-------------------|---|--|
| 14(2)       | The holder of a mining lease must not amend a document to which this clause applies that relates to the mining lease unless—<br>(a) the Secretary gives the holder a written direction to do so, or<br>(b) the Secretary, on written application by the holder, gives a written approval of the amendment.   | Note              | N/A.  | N/A.   |
| 14(3)       | The holder of the mining lease must amend the document in accordance with the Secretary's direction or approval.   |                   |   |  |
| 14(4)       | Nothing in this clause prevents the holder of a mining lease preparing a draft amendment for submission to the Secretary for approval.   | Note              | N/A.  | N/A.   |
| <b>15</b>   | <b>Times at which documents must be prepared and given</b>   |                   |   |  |
| 15(1)       | The holder of a mining lease must do the following before the end of the initial period—<br>(a) prepare a rehabilitation management plan, and<br>(b) prepare rehabilitation outcome documents and give them, other than the rehabilitation completion criteria statement, to the Secretary for approval, and<br>(c) prepare a forward program and give it to the Secretary.  | Compliant         | <ul style="list-style-type: none"> <li>– Phase 2 – RMP (Rev 2, 7 October 2022).</li> <li>– Annual Rehabilitation Report and Forward Program (October 2022), including Verification of submission of Annual Rehabilitation Report and Forward Program (October 2022) on 6 October 2022.</li> </ul> | Review of the RMP and Annual Rehabilitation Report and Forward Program indicates this requirement is addressed.          |
| 15(2)       | The holder of the mining lease must prepare a forward program and annual rehabilitation report and give them to the Secretary before—<br>(a) 60 days after the last day of each annual reporting period, commencing with the annual reporting period in which the forward program was given to Secretary under subclause (1)(c), or<br>(b) a later date approved by the Secretary.   | Compliant         | <ul style="list-style-type: none"> <li>– Forward Program Friday 1 July 2023 to Monday 30 June 2026.</li> <li>– Dendrobium Colliery Annual Rehabilitation Report Friday 1 July 2022 to Friday 30 June 2023.</li> </ul>   | Review of the documentation verifies this requirement is addressed.  |
| 15(3)       | A rehabilitation completion criteria statement relating to completion of rehabilitation during a period covered by a forward program must be given to the Secretary for approval when the forward program is required to be given to the Secretary.  | Not triggered     | Forward Program Friday 1 July 2023 to Monday 30 June 2026.  | Review of the documentation verifies this requirement is not triggered due to the nature of disturbance for the Project. |
| 15(4)       | The holder of the mining lease must prepare updated rehabilitation outcome documents for the mining lease and give them to the Secretary for approval before—<br>(a) 60 days after a development consent is modified following an application referred to in clause 20(1)(b), or<br>(b) a later date approved by the Secretary.  | Not triggered     | N/A.  | Review of relevant documentation indicates this requirement has not been triggered during the audit period.              |
| 15(5)       | A rehabilitation completion criteria statement is not required to be given to the Secretary under subclause (4) unless a rehabilitation completion criteria statement has already been given to the Secretary under subclause (3).   | Not triggered     | N/A.  | Review of relevant documentation indicates this requirement has not been triggered during the audit period.              |
| 15(6)       | The Secretary may, by written notice, direct the holder of a mining lease to prepare, or give to the Secretary, a document required to be prepared under this Division at a time other than that specified in this clause.   | Not triggered     | N/A.  | Review of relevant documentation indicates this requirement has not been triggered during the audit period.              |
| 15(7)       | The holder of the mining lease must comply with the direction.   |                   |   |  |
| 15(8)       | In this clause—<br>initial period means the period commencing when the mining lease is granted and ending—<br>(a) 30 days, or other period approved by the Secretary, after this Division first applies to the mining lease, or<br>(b) if this Division applies to the mining lease because of an increase in the required security deposit—<br>(i) when the surface of the mining area is disturbed by activities under the mining lease, or<br>(ii) at a later date approved by the Secretary. | Note              | N/A.  | N/A.   |

| Condition # | Details   | Compliance status                 | Relevant evidence                        | Commentary   |
|-------------|---|-----------------------------------|--|--|
| <b>16</b>   | <b>Certain documents to be publicly available</b>   |                                   |  |  |
| 16(1)       | This clause applies to the following documents—<br>(a) a rehabilitation management plan,<br>(b) a forward program,<br>(c) an annual rehabilitation report.  | Compliant                         | South32 IMC website.                     | Review of the South32 IMC website verifies compliance with these requirements.   |
| 16(2)       | The holder of a mining lease must make a document to which this clause applies publicly available by—<br>(a) publishing it on its website in a prominent position, or<br>(b) if the holder does not have a website— providing a copy of it to a person—<br>(i) on the written request of a person, and<br>(ii) without charge, and<br>(iii) within 14 days after the request is received.   | Compliant                         | South32 IMC website.                     | Review of the South32 IMC website verifies compliance with these requirements.   |
| 16(3)       | If a document is published on the website of the holder of the mining lease, the holder must ensure that it is published—<br>(a) for a rehabilitation management plan—within 14 days after it is prepared or amended, or<br>(b) for a forward program or an annual rehabilitation report—within 14 days after it is given to the Secretary or amended,  | Non-compliant<br>(Administrative) | Annual Reviews for FY21, FY22, and FY23. | Clause 16(1)(b) in Schedule 8A of the Mining Regulation 2016 (NSW) requires the lease holder to publish the Forward Program on its website.<br>The NSW Resources Regulator identified on 2 December 2022, during an audit, that the Forward Program was not available in accordance with the requirements of Clause 16(3)(b).<br>It was confirmed the Forward Program is now available on the Dendrobium Mine website. As a result, a recommendation is not deemed relevant. |
| 16(4)       | Personal information within the meaning of the Privacy and Personal Information Protection Act 1998 is not required to be included in a document made available to a person under this clause.  | Note                              | N/A.                                     | N/A.   |
|             | <b>Division 4 Records, reporting and notification</b>   |                                   |  |  |
| <b>17</b>   | <b>Records demonstrating compliance</b>   |                                   |  |  |
|             | The holder of a mining lease must create and maintain records of all actions taken that demonstrate compliance with each of the conditions set out in this Part.<br><i>Note— The Act, sections 163D and 163E provide for the form in which records must be kept and the period for which they must be retained.</i>   | Compliant                         | Annual Reviews for FY21, FY22, and FY23. | Review of relevant documentation verifies compliance with these requirements.  |
| <b>18</b>   | <b>Report on non-compliance</b>   |                                   |  |  |
| 18(1)       | The holder of a mining lease must provide the Minister with a written report detailing any non-compliance with—<br>(a) a condition of the mining lease, or<br><i>Note—The Act, section 364A contains provisions relating to the use and disclosure of information provided under this condition.</i><br>(b) a requirement of the Act or this Regulation relating to activities under the mining lease.  | Not triggered                     | N/A.                                     | Conduct of the audit indicates this requirement has not been triggered during the audit period.  |
| 18(2)       | The holder of the mining lease must provide the report within 7 days after becoming aware of the non-compliance.  | Not triggered                     | N/A.                                     | Conduct of the audit indicates this requirement has not been triggered during the audit period.  |
| 18(3)       | The holder of the mining lease must ensure the report—<br>(a) identifies the condition of the mining lease, or the requirement of the Act or this Regulation, to which the non-compliance relates, and<br>(b) describes the non-compliance and specifies the date or dates on which, or the period during which, the non-compliance occurred, and<br>(c) describes the causes or likely causes of the non-compliance, and<br>(d) describes the action that has been taken, or will be taken, to mitigate the effects, and to prevent any recurrence, of the non-compliance. | Not triggered                     | N/A.                                     | Conduct of the audit indicates this requirement has not been triggered during the audit period.  |

| Condition # | Details   | Compliance status | Relevant evidence   | Commentary   |
|-------------|---|-------------------|---|--|
| <b>19</b>   | <b>Nominated contact person</b>   |                   |   |  |
| 19(1)       | The holder of a mining lease must nominate a natural person to be the contact person with whom the Secretary can communicate in relation to the mining lease for the purposes of the Act.<br><i>Note— The Act, section 383 sets out the ways in which notices or other documents may be issued or given to, or served on, a person for the purposes of the Act.</i>   | Compliant         | Dendrobium Colliery Annual Rehabilitation Report Friday 1 July 2022 to Friday 30 June 2023. | Review of the documentation verifies this requirement is addressed.                      |
| 19(2)       | The holder of the mining lease must give written notice to the Secretary of—<br>(a) the full name and contact details of the nominated person—within 28 days after the date on which the standard conditions apply to the mining lease under clause 31A of this Regulation, and<br>(b) any change in nomination or in the nominated person’s contact details—within 28 days after the change occurs.  | Compliant         | Dendrobium Colliery Annual Rehabilitation Report Friday 1 July 2022 to Friday 30 June 2023. | Review of the documentation verifies this requirement was addressed on 22 December 2022. |
| 19(3)       | The holder of the mining lease must ensure that the contact details for the nominated person include the person’s phone number and postal and email addresses.  | Compliant         | Dendrobium Colliery Annual Rehabilitation Report Friday 1 July 2022 to Friday 30 June 2023. | Review of the documentation verifies this requirement was addressed on 22 December 2022. |
|             | <b>Division 5 Applications relating to development consent</b>  |                   |   |  |
| <b>20</b>   | <b>Additional requirements—application for or to modify development consent</b>   |                   |   |  |
| 20(1)       | The holder of a mining lease must give written notice to the Secretary within 10 days after—<br>(a) making an application for development consent that relates to the mining area, or<br>(b) making an application for modification of a development consent—<br>(i) under the Environmental Planning and Assessment Act 1979, section 4.55(2), and<br>(ii) that proposes to modify a condition of the consent that relates to rehabilitation of the mining area in a way that may affect an obligation under the mining lease relating to rehabilitation of the mining area. | N/A               | N/A.  | N/A – Per Clause 20(2).  |
| 20(2)       | This clause does not apply if the development is State significant development.   | Note              | N/A.  | N/A.   |

## Appendix J

### Site inspection photos

LDP 5 – Discharge sample point



LDP5 – EPL signage



KVCLF – Groundwater pipeline and turbidity probe



**KVCLF – Coal conveyor and sizer**



**KVCLF – Stockpile, coal conveyor and rill tower**



**KVCLF – O'Brien's Drift infrastructure**



**Dendrobium Pit Top – Above ground tank and bunding**



**Dendrobium Pit Top – General (blue), scrap metal (red) and air filter (orange) waste bins**





Dendrobium Pit Top – Self-bunded IBC storage container



Dendrobium Pit Top – Liquids bunding and spill response station



Dendrobium Pit Top – Sediment pond and LDP 22



**Dendrobium Pit Top – Vehicle washdown area and fire tank**



**Dendrobium Pit Top – Upper Portal Road, dust suppression spray system in use**



**Dendrobium Pit Top – Meteorological station and landslip rehabilitation area**



**Dendrobium Pit Top – Reinstated clean water diversion below landslip area**



**Metropolitan Special Areas – Wongawilli Creek Flume**



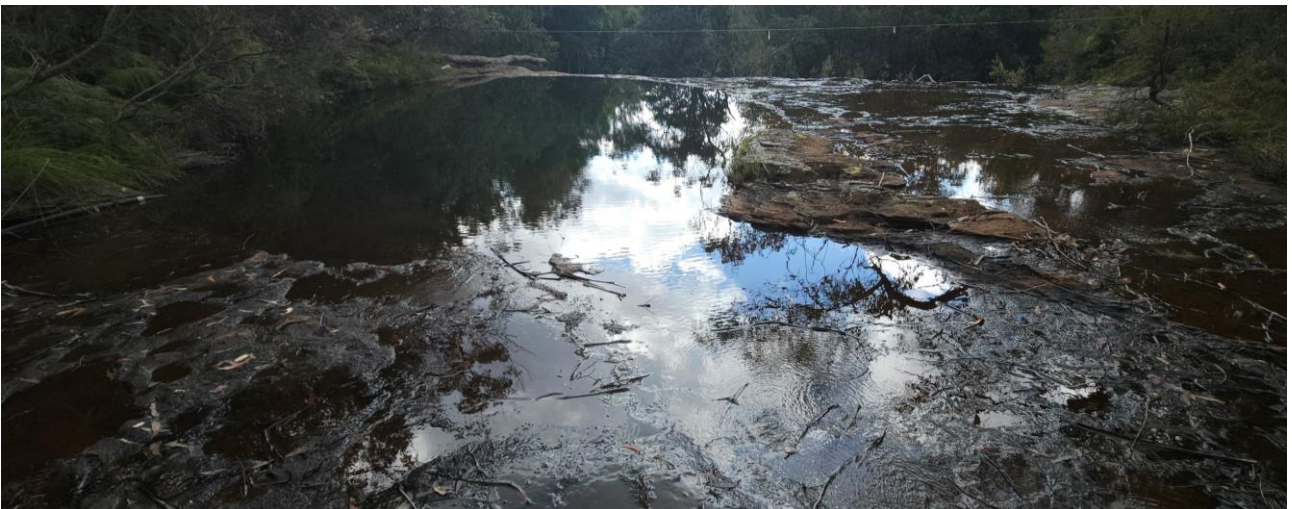
**Metropolitan Special Areas – WC21: Pool 24 fracture remediation area and water monitor**



Metropolitan Special Areas – WC21: Pool 25 fracture remediation area



Metropolitan Special Areas – Waterfall 54: Upstream rockbar



Metropolitan Special Areas – Waterfall 54: Downstream area, rockfall area (not visible) and associated rocks in red



Metropolitan Special Areas – Waterfall 15: Rockbar SC10\_15b



Metropolitan Special Areas – Ventilation Fans 2 & 3 site



Metropolitan Special Areas – – Ventilation Fans 2 & 3 site rehabilitation



**Metropolitan Special Areas – Ventilation Fans 2 & 3 sediment pond**



**Metropolitan Special Areas – – Swamp 15A: Groundwater piezometer for shallow groundwater levels**



**Metropolitan Special Areas – Swamp 15A: soil moisture level monitor**



**Metropolitan Special Areas – SC10: Iron staining**



**Metropolitan Special Areas – Donalds Castle Creek**

