SOUTH32 Illawarra Metallurgical Coal

DENDROBIUM MINE AND CORDEAUX COLLIERY ANNUAL REVIEW FY23

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Tables

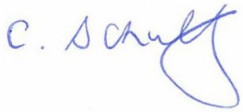
Table 1: Annual Review Title Block	
Name of operations	Dendrobium Mine Cordeaux Colliery
Name of operator	South32 Illawarra Metallurgical Coal (IMC)
Development consent / project approval #	DA 60-03-2001 (Dendrobium) D74/134 (Cordeaux)
Name of holder of development consent / project approval	Illawarra Coal Holdings Pty Ltd
Mining lease #	CCL 768, ML 1510, ML 1566 (Dendrobium) CCL 768 (Cordeaux)
Name of holder of mining lease	Dendrobium Coal Pty Ltd (ML 1510 and ML 1566) Illawarra Coal Holdings Pty Ltd (CCL 768).
Water approval #	10WA118772
Name of holder of water approval	Illawarra Coal Holdings Pty Ltd
Water access licence #	37465 36473 42385 42386
Name of holder of water access licence	Illawarra Coal Holdings Pty Ltd (37465, 42385, 42386) Dendrobium Coal Pty Ltd (36473)
RMP start date	2 July 2022
RMP end date	30 June 2025
Annual Review start date	1 July 2022
Annual Review end date	30 June 2023

I, Chris Schultz, certify that this audit report is a true and accurate record of the compliance status of Dendrobium Mine and Cordeaux Colliery for the period 1 July 2022 – 30 June 2023 and that I am authorised to make this statement on behalf of Illawarra Coal Holdings Pty Ltd and Dendrobium Coal Pty Ltd.

Note.

a) The Annual Review is an 'environmental audit' for the purposes of section 9.39 (2) of the Environmental Planning and Assessment Act 1979. Section 9.42 provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.

b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or $22,000, or both).

Name of authorised reporting officer	Chris Schultz
Title of authorised reporting officer	Superintendent Environment (under Power of Attorney dated 17 March 2023)
Signature of authorised reporting officer	
Date	29 September 2023

1. STATEMENT OF COMPLIANCE

Table 2: Statement of Compliance

Development Consent	Purpose	Compliant?
DA 60-03-2001	Dendrobium Underground Coal Mine and associated surface facilities and infrastructure	No
MOD-11-2-2002	Access of construction traffic to the Bradford Breaker Emplacement Area	
MOD-36-5-2002-I	Application for vehicles to access Benjamin Road.	
60-03-2001 MOD 3	Modification to Development Consent	
60-03-2001 MOD 4	Modification to Development Consent	
60-03-2001 MOD 5	Modification to Development Consent	
60-03-2001 MOD 6	Area 3 Consent Modification	
60-03-2001 MOD 7	Strategic Biodiversity Offset	
60-03-2001 MOD 8	Surface Supply Upgrade	
60-03-2001 MOD 9	Gas Management Infrastructure	
Mining Lease	**Number**	
Consolidated Coal Lease	768	No
Mining Lease	1510	Yes
Mining Lease	1566	Yes
Environment Protection Licence		
EPL 3241	Dendrobium Mine	Yes
EPL 611	Cordeaux Colliery	Yes
Water Approval		
Water Supply Works	10WA118772	Yes
Ground Water Access Licences		
37465	10AL119249	Yes
36473	10AL118771	Yes
42385	10AL123125	Yes
42386	10AL123124	Yes
WaterNSW Access Consent		
F2020/1545[1]	Special and Controlled Areas access	Yes

[1] Annual Statement of Compliance provided in Appendix 9.

Table 3: Non-compliances against relevant approvals

Relevant approval	Condition #	Condition description (summary)	Compliance status	Comment	Where addressed in Annual Review
DA 60-03-2001	Condition 1 of Schedule 4	Noise generated at the surface facilities not to exceed the noise impact assessment criteria.	Non-compliant	Noise monitoring identified exceedances at R6a and R39a.	Section 11.1
CCL 768	Clause 16 in Schedule 8A of *Mining Regulation 2016*.	Forward Program to be published to website within 14 days of submission.	Non-compliant	Timeframe for publishing was not met.	Section 11.1
CCL 768	Condition 4	Assessable Prospecting Operations to be covered by Development Consent or valid written approval from Minister.	Non-compliant	Borehole was drilled outside of the period of the approval.	Section 11.1

Compliance status key for Table 3.

RISK LEVEL	COLOUR CODE	DESCRIPTION
High	Non-compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-compliant	Non-compliance with: • potential for serious environmental consequences, but is unlikely to occur; or • potential for moderate environmental consequences, but is likely to occur
Low	Non-compliant	Non-compliance with: • potential for moderate environmental consequences, but is unlikely to occur; or • potential for low environmental consequences, but is likely to occur
Administrative non-compliance	Non-compliant	Only to be 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)

Refer to Section 11 for more detail regarding the non-compliances listed in Table 3.

The predictions and Statement of Commitments from the Dendrobium Environmental Assessment (EA) are incorporated into the Dendrobium Development Consent DA 60-03-2001 (as modified). An assessment of compliance with the conditions of DA 60-03-2001 is considered to be an assessment of compliance against the predictions in the EA. Compliance against the Development Consent is assessed in Appendix 3.

2. INTRODUCTION

2.1 Background

This Annual Review for Dendrobium Mine and Cordeaux Colliery details the environment and community performance for the 12-month period ending 30 June 2023 and meets the requirements set out in the *Post approval requirements for State significant mining developments - Annual Review Guideline* (NSW DPIE, October 2015).

The Annual Review has been prepared to meet the requirements of Condition 5 of Schedule 8 of the Dendrobium Development Consent DA 60-03-2001, as modified (the Consent).

A copy of the report is publicly available via the IMC website (link) under Dendrobium Mine.

2.2 Overview of Operations

2.2.1 Dendrobium Mine

Dendrobium Mine is an underground mining operation approved in November 2001 by the Minister of the Department of Urban Affairs and Planning. The mine is owned and operated by Dendrobium Coal Pty Ltd, a subsidiary company of Illawarra Coal Holdings Pty Ltd (ICHPL), a wholly owned subsidiary of South32 Limited. It is operated on a continuous basis, 24 hours a day and 7 days a week.

The mining operations are located immediately adjacent to Mount Kembla, approximately 8 km west of Wollongong, NSW. Mount Kembla village is located within 500 m of the Pit Top site and has close historical links with coal mining.

Dendrobium Mine extracts coal from the Wongawilli Seam of the Southern Coalfield. Three mining areas make up the approved mine plan for Dendrobium and are named Areas 1, 2 and 3 (including 3A, 3B and 3C). Longwall mining during the reporting period was undertaken in Area 3A (Longwall (LW) 19) and Area 3C (LW21) (refer to Plan 1 and Plan 2). The mine primarily produces hard coking coal and is approved to produce up to 5.2 million tonnes per annum until 31 December 2030. Dendrobium Mine is comprised of a number of sites as detailed below.

2.2.1.1 Dendrobium Pit Top

The Pit Top consists of:

- Administration buildings.
- Workshop, machinery and equipment storage areas.
- People and materials access to the underground workings via the Dendrobium Tunnel.
- A sediment pond.
- A grey water treatment plant (GWTP) and oily water separation facility.

The Pit Top layout is shown in Plan 3.

2.2.1.2 Kemira Valley Coal Loading Facility (KVCLF) (ML 1510)

Coal is transported from the underground workings to the KVCLF via a conveyor network, reaching the surface via the Kemira Valley Tunnel (KVT). The coal is then fed through a coal sizer, into a rill tower and deposited onto a 140,000-tonne capacity stockpile. Coal is loaded onto trains via an enclosed rail-loading chute. The KVCLF layout is shown in Plan 4.

2.2.1.3 Kemira Valley Rail Line (KVRL)

The privately owned and operated KVRL is used to transport Run of Mine (RoM) coal from the KVCLF to the Dendrobium Coal Preparation Plant (DCPP).

2.2.1.4 Ventilation Shaft 1

The fan housings associated with Ventilation Shaft 1 were decommissioned in October 2008 and relocated to Ventilation Shaft 3. This shaft now provides intake air to the underground workings. The Ventilation Shaft 1 site layout is shown in Plan 5.

2.2.1.5 Ventilation Shaft 2/3 Site (ML 1566)

Construction of Ventilation Shafts 2 and 3 commenced during 2006 and was completed in 2008. Ventilation Shaft 2 (downcast) and 3 (upcast) provide ventilation to the current and future underground workings in Area 3. The Ventilation Shaft 2/3 site layout is outlined in Plan 6. Construction of gas management infrastructure for Area 3C commenced at this site in FY23 and is due for completion in FY24. The site layout for the gas management infrastructure is shown in Plan 7.

2.2.1.6 DCPP

The DCPP is located within the Port Kembla Steelworks. The plant provides washing facilities for Dendrobium RoM coal prior to being blended with Bulli Seam coal in the coke making process at the Port Kembla Steelworks or at Port Kembla Coal Terminal (PKCT) for export.

2.2.1.7 Offsite Storage Facility (OSS)

The OSS is located in Unanderra and is used by Dendrobium Mine for the storage of equipment and consumables due to the limited storage space at the Pit Top. The OSS also houses operational equipment for Appin Mine. The site is managed by Linfox.

2.2.1.8 Dendrobium Mine Extension Project (DMEP)

IMC submitted an Environmental Impact Statement (EIS) to the Department of Planning, Industry and Environment (DPIE) for the Dendrobium Mine – Plan for the Future: Coal for Steelmaking project on 22 July 2019. On 5 February 2021, the Independent Planning Commission (IPC) handed down its decision on the project, being refusal of consent to the development application.

An EIS for the DMEP was submitted in March 2022. On 5 September 2022, South32 withdrew the DMEP application.

2.2.2 Cordeaux Colliery

Cordeaux Colliery is owned and operated by Endeavour Coal Pty Ltd, a wholly owned subsidiary of ICHPL. Coal production ceased in March 2001 and recovery of longwall mining equipment was completed on 12 April 2001. Following cessation of mining, Cordeaux Colliery was placed on care and maintenance. Throughout this reporting period, Cordeaux Colliery maintained this status.

The Cordeaux Colliery Pit Top functions as office space and a storage facility. The Pit Top is used as a base for the Exploration Team, Survey Team and Environmental Field Team (EFT) activity across the Dendrobium and Appin mining leases and exploration tenements, and also for access into the catchment.

The Cordeaux Colliery Pit Top and the Corrimal No. 3 shaft site are of potential significant strategic value.

The Cordeaux Colliery Pit Top is wholly contained within an area of approximately 11.9 ha located within WaterNSW Special Areas (Plan 12). Cordeaux Colliery was serviced by four vertical shafts consisting of:

- Personnel and materials access shaft.
- Bulk Coal Winder shaft. The shaft was also the second means of egress and contained the mine's two main ventilation fans.
- Corrimal No. 3 Shaft – mine ventilation fan shaft (ex-Corrimal Mine). This fan was used to complement ventilation flow through Cordeaux Colliery.
- Corrimal No. 2 Shaft - mine ventilation fan shaft (ex-Corrimal Mine). This fan was used to complement ventilation flow through Cordeaux Colliery.

Cordeaux Colliery is considered a "zero discharge site", restricting water discharge directly to the surface lands of the WaterNSW Special Areas. Cordeaux Colliery Pit Top has approximately 40% of its area dedicated to surface water management.

As Cordeaux Colliery is currently deemed to be under care and maintenance, there were limited activities associated with the site during the reporting period and as a result, limited potential for environmental impacts.

2.3 Mine Contacts

The site contacts for Dendrobium Mine and Cordeaux Colliery are provided in Table 4.

Table 4: Site Contacts

Position	Name	Number
General Manager Dendrobium Mine	Simon Thomas	(02) 4255 4874
Manager Exploration and Technical Support (Cordeaux)	Amanda Crehan	(02) 4286 3160
Superintendent Environment	Chris Schultz	(02) 4286 3384
Specialist Environment - Dendrobium	James Alchin	(02) 4255 4886
Coordinator Environment - Cordeaux	Josh Carlon	(02) 4224 6225

3. APPROVALS

Relevant consents, leases and licences for Dendrobium Mine and Cordeaux Colliery are included in Table 5, Table 6, Table 7 and Table 8.

3.1 Dendrobium Mine

Table 5: Development Consent and Modifications associated with Dendrobium Mine

Development Approval	Purpose	Issue Date	Expiry date
DA 60-03-2001	Dendrobium Underground Coal Mine and associated surface facilities and infrastructure	20 Nov 2001	21 Dec 2023
MOD-11-2-2002	Permitting the access of construction traffic to the Bradford Breaker Emplacement Area (Drift Spoil Emplacement Area 1) via Cordeaux Road and Benjamin Road, Mount Kembla.	28 Feb 2002	21 Dec 2023
MOD-36-5-2002-I	Application for commencement of vehicles accessing Benjamin Road.	15 Aug 2002	21 Dec 2023
60-03-2001 MOD 3	Modification to Development Consent (Dept. Planning)	28 Aug 2003	21/ Dec 2023
60-03-2001 MOD 4	Modification to Development Consent (Dept. Planning)	5 Apr 2006	21 Dec 2023
60-03-2001 MOD 5	Modification to Development Consent (Dept. Planning)	30 Nov 2006	21 Dec 2023
60-03-2001 MOD 6	Area 3 Consent Modification	8 Dec 2008	31 Dec 2030
60-03-2001 MOD 7	Strategic Biodiversity Offset	2 Apr 2015	31 Dec 2030
60-03-2001 MOD 8	Surface Supply Upgrade	13 Jul 2018	31 Dec 2030
60-03-2001 MOD 9	Gas Management Infrastructure	8 Jul 2022	31 Dec 2030

Table 6: Mining Leases associated with Dendrobium Mine				
Mining Lease / Sub-Lease	**Number**	**Issue Date**	**Expiry Date**	**Mine Site**
Consolidated Coal Lease	768	29 Oct 1991	7 Oct 2029	Dendrobium
Mining Lease	1510	24 Apr 2002	24 Apr 2044	Dendrobium
Mining Lease	1566	7 Sep 2005	6 Sep 2026	Dendrobium

Table 7: Licences associated with Dendrobium Mine			
Licences/Consents	**Number**	**Issue Date**	**Expiry Date**
Licence to Store – Explosives (SafeWork NSW)	XSTR100152	5 Mar 2018	10 Jan 2023[2]
Radiation Licence (EPA)[3]	5061173	27 Jul 2022	27 Jul 2023
Radiation Licence (EPA)[4]	5096770	26 Feb 2022	26 Feb 2024
Environment Protection Licence	3241	Aug 2000	N/A
Water Approval (Natural Resource Access Regulator)	10WA118772	1 Jul 2013	27 Jun 2028
Groundwater Access Licence	37465	N/A	
Groundwater Access Licence	36473	N/A	
Groundwater Access Licence	42385	N/A	
Groundwater Access Licence	42386	N/A	
Exploration Licence	AUTH 143	28 Jul 1979	7 Nov 2023[5]
Exploration Licence	AUTH 374	24 Oct 1986	24 Oct 2022[6]

[2] Application to renew has been submitted. Licence remains valid until new licence received.
[3] KVCLF. This radiation device was removed in FY23 and the licence was not renewed. It was current during the reporting period.
[4] For radiation gauges at the DCPP.
[5] Renewal pending.
[6] Renewal pending.

WaterNSW Access Consent	F2020/1545	29 June 2023	13 Mar 2025

Table 8: Current Mining Approvals for Dendrobium Mine

Approval	Number	Issue Date
Area 3A LW19 SMP	N/A	11 Mar 2021
Area 3C – LW21	N/A	19 Dec 2019

3.2 Cordeaux Colliery

Cordeaux Colliery is held under CCL 768. The relevant consents, leases, and licences for Cordeaux Colliery are presented in Table 9.

Table 9: Consents, Leases and Licences for Cordeaux Colliery

Facility/Document	Number	Issue Date	Expiry Date
Environment Protection Licence	611	27 Jul 2000	N/A
Development Consent (Wollongong City Council)	D74/134	20 Dec 1974	N/A
Exploration Licence	AUTH 338	8 Oct 1984	8 Oct 2025
WaterNSW Access Consent	F2020/1545	29 Jun 2023	13 Mar 2025
Consolidated Coal Lease	768	29 Oct 1991	7 Oct 2029
Mining Lease	25	31 Oct 1975	As per CCL 768
Mining Lease	28	31 Oct 1975	As per CCL 768
Mining Lease	23	2 Sep 1981	As per CCL 768
Mining Lease	24	2 Feb 1976	As per CCL 768
Mining Lease	30	18 Oct 1976	As per CCL 768
Mining Lease	Lease No. 66 portion D1106	18 Oct 1976	As per CCL 768
Mining Purposes Lease	MPL 205	29 Sep 1982	As per CCL 768

4. OPERATIONS SUMMARY

4.1 Mining

4.1.1 Dendrobium Mine

The RoM product for the reporting period was 4.593 million tonnes with a saleable product yield of 75%. A comparison showing the RoM production at Dendrobium Mine for past reporting periods is provided in Figure 1. During this reporting period, Dendrobium continued longwall mining in Area 3A and relocated to Area 3C in March 2023.

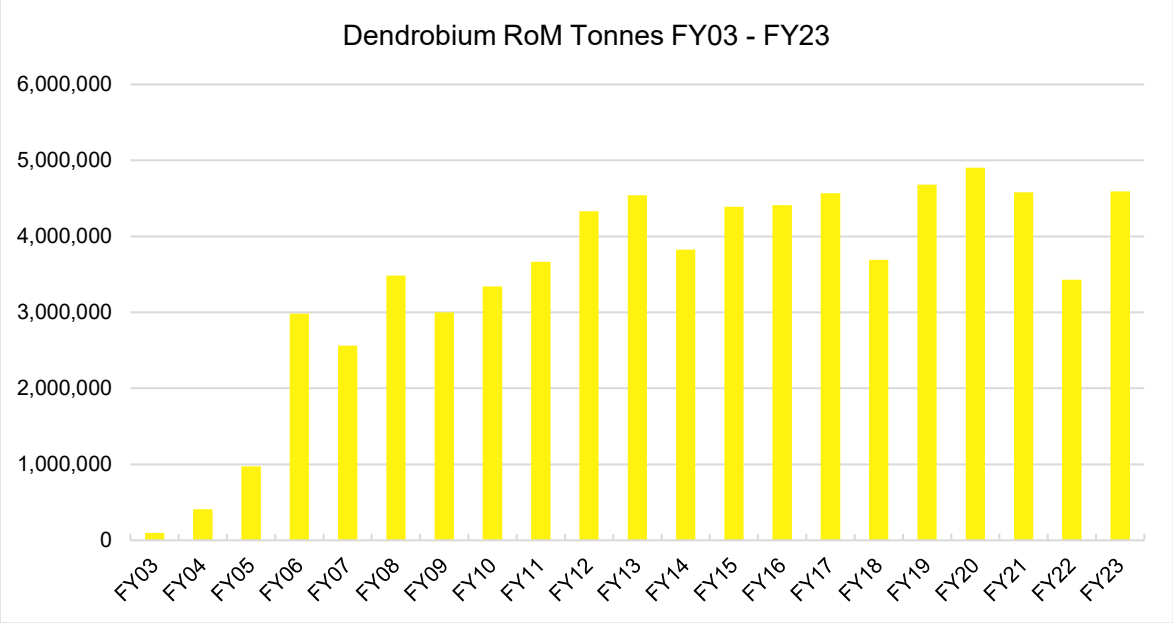


Figure 1: RoM Production for Dendrobium Mine.

The start and finish dates for longwalls in the current Dendrobium mining domain are provided in Table 10.

Table 10: Area 3 Longwall Start and Finish Dates		
Longwall Number	**Start Date**	**Finish Date**
7	4 May 2011	23 Jan 2012
8	24 Feb 2012	29 Dec 2012
9	9 Feb 2013	2 Jun 2014
10	20 Jan 2014	20 Jan 2015
11	18 Feb 2015	26 Jan 2016
12	22 Feb 2016	31 Jan 2017
13	4 Mar 2017	19 Apr 2018
14	22 May 2018	26 Feb 2019
15	9 Apr 2019	22 Jan 2020
16	25 Feb 2020	4 Nov 2020
17	12 Dec 2020	13 Oct 2021
18	2 Dec 2021	17 May 2022
19	20 Jun 2022	29 March 2023
21	26 April 2023	7 August 2023
19A	Est. 17 Nov 2023	Est. 20 May 2024

4.1.2 Cordeaux Colliery

There was no mining at Cordeaux Colliery in the reporting period. The site is under care and maintenance.

4.2 Mineral Processing

4.2.1 Dendrobium Mine

Processing of the RoM coal produced at Dendrobium Mine is undertaken at the DCPP. Coal wash is emplaced at the Appin Mine Coal Wash Emplacement Area (CWEA), directed to beneficial reuse, sold as a low-grade thermal coal or used as engineered fill under Operational Purpose Deductions (OPDs) (see Section 6.19.1.4). The production and waste summary for Dendrobium Mine is outlined in Table 11.

Table 11: Production Summary				
Material	**Approved limit**	**Previous Reporting Period**	**This Reporting Period**	**End of Next Reporting Period[7]**
Waste Rock/ Overburden (Mt)[8]	N/A	0	0	0
RoM Coal/Ore (Mt)	5.2	3.435	4.593	2.671
Coarse reject (Coal Wash Mt)	N/A	0.903	0.925	1.125[9]
Saleable product (Mt)	N/A	2.608	3.355	2.091

4.2.2 Cordeaux Colliery

There was no mineral processing at Cordeaux Colliery in the reporting period. The site is under care and maintenance.

4.3 Ore and Product Stockpiles

4.3.1 Dendrobium Mine

A 140,000-tonne capacity stockpile, located at the KVCLF, is used to store RoM coal prior to it being loaded into trains for transport to the DCPP. Train movements are limited to between 6 am and 11 pm as required by the Consent. During the reporting period, 2,537 trains were loaded at the KVCLF, transporting 4,390,408 tonnes of coal. A summary of train movements for FY23 is included in Table 12.

Table 12: Summary of KVCLF train movements - FY23			
Month	**Tonnes**	**Train Movements**	**Average Train Movements/Day**
Jul-22	459,324	268	8.63
Aug-22	427,871	245	7.92
Sep-22	403,364	231	7.68
Oct-22	318,728	177	5.70
Nov-22	352,376	204	6.81
Dec-22	395,517	225	7.27

[7] Estimate.
[8] Not applicable as Dendrobium Mine is an underground coal mine.
[9] Coal wash figure calculated based on actual/forecast movement of product to its final destination (once its purpose is known) rather than as soon as it is generated at the DCPP, to allow alignment to expected use (and any potential rewashing that may impact the numbers).

Jan-23	411,625	236	7.60
Feb-23	389,829	221	7.90
Mar-23	232,780	132	4.27
Apr-23	83,444	48	1.59
May-23	445,606	267	8.62
Jun-23	469,944	283	9.43
TOTAL	**4,390,408**	**2537**	**AVERAGE = 6.95**

4.3.2 Cordeaux Colliery

There was no product storage at Cordeaux Colliery in the reporting period. The site is under care and maintenance.

4.4 Construction

4.4.1 Dendrobium Mine

4.4.1.1 Lower Portal Road Upgrade

The construction works for the Lower Portal Road were completed during FY23 (Plate 1). This allows additional access in the event of an emergency requiring the use of the secondary roadway and also for repair works to be undertaken on the Upper Portal Road.

Plate 1: Lower Portal Road Upgrade

4.4.1.2 *Upper Portal Road Upgrade*

Minor resurfacing works were undertaken on the Upper Portal Road.

4.4.1.3 *Licence Discharge Point (LDP) 5 Flowmeter and Dewatering Turbidity Sensor*

During FY23, flowmeters were installed on the Dendrobium dewatering pipeline at LDP 5 and at the KVT. The aim of this project is to provide leak detection via flow reconciliation for the pipeline in the event of a pipeline leakage or failure. Alarms are also provided via the SCADA system to automatically alert mine staff to potential issues.

A turbidity sensor, as shown in Plate 2, was installed as part of this project at the KVT and connected to the SCADA system to constantly monitor the water quality being discharged and actively identify potential issues. Some minor amendments are required to the SCADA/alarming system during FY24.

Plate 2: New Turbidity Sensor – KVCLF

4.4.1.4 *Sediment Pond Float installation*

The Pit Top sediment pond uses a pump to transfer water to the GWTP. During FY23, it was identified that the pump was at risk of failure and unable to remove all water from the sediment pond due to being suspended by a float from the top of the pump. On site personnel constructed a steel cage for the pump and attached several floats to raise the intake of the pump to approximately 50 mm below the water surface, adding 150 mm of water depth pumping capacity and preventing sediment intake. As a result, pump life has been extended and a greater volume of water is now removed from the sediment pond on a continuous basis.

4.4.1.5 *Slope Stability Project*

As a result of excessive rainfall throughout FY22, a significant landslip occurred on the western boundary of the site adjacent to the Operations Building. Damage was observed to the personnel transport shelter and bathhouse infrastructure due to soil movement and falling trees.

A specialist engineering consultant was engaged to prepare a design to remediate the slope using soil nails, shotcrete and soil reinforcing mesh (see Plate 3). A specialist contractor commenced works in FY23, with completion due in FY24.

Plate 3: Slope Remediation Works - Dendrobium Pit Top

4.4.1.6 Area 3C Gas Management Infrastructure

Works on the Area 3C gas management infrastructure commenced in FY23, with completion due in FY24. The infrastructure is required for drainage of gas from Area 3C. Works were delayed due to rainfall in FY22 and early FY23, and a temporary plant is required to be installed prior to completion of permanent infrastructure. Once the permanent works have been completed, the disturbed areas of the site without infrastructure will be rehabilitated. Progress as of July 2023 is shown in Plate 4.

Plate 4: Gas Management Infrastructure Progress - July 2023

4.4.1.7 Retaining Wall Replacement

During FY23, works were completed on the replacement of the retaining wall behind the bulk store due to degradation. This involved the removal of the existing concrete, forming and pouring a new wall section.

4.4.1.8 Surface Infrastructure Subsidence Remediation

IMC maintains ongoing engagement with TransGrid to safely manage the 330 kV Transmission Tower assets which are located in Dendrobium Area 3. These towers are influenced by mining induced subsidence movements. In consultation with IMC, TransGrid undertook a comprehensive assessment of mitigation measures required for Tower 14 which was completed in early FY23. During the reporting period LW19 mined past Tower 15 at a horizontal distance of approximately 100 m. Mitigation works were previously implemented for this tower. All towers within the mining area are routinely monitored by IMC throughout the active subsidence period in accordance with the management plan. Subsidence recorded at Tower 15 was well below the predicted level and no safety or serviceability issues occurred throughout the mining period. Other towers recorded minimal subsidence movements. No mitigating works were required for LW21 and only minimal subsidence movements were recorded at the closest towers, as was predicted.

4.4.1.9 LDP 5 Access Improvements

Work was completed during FY23 on the installation of a walkway and formalised sample points at LDP 5 to improve safety during sampling activities, along with a hydraulicly efficient mixer for brine discharge from the Appin North and Appin West Water Treatment Plants (WTPs). These works are shown in Plate 5.

Plate 5: LDP 5 access gate (left) and walkway (right)

4.4.1.10 Minor Improvement Projects

Other improvement projects progressed throughout the FY include:

- Ongoing maintenance to the drainage and greywater treatment systems.
- Dome shelter installation for bulk consumable goods within the warehouse yard.

The bulk diesel and solcenic projects were not progressed to installation in the reporting period. This was due to subsidence concerns with the historical underlying kerosene workings. A self bunded bulk diesel tank has been purchased and is currently being stored at the OSS with installation planned for FY24.

4.4.1.11 Environmental Monitoring

During FY23, five additional surface flow monitoring sites were installed in catchment watercourses around the Dendrobium mining area and reference locations. The sites include the install of a low-profile weir and flume-like halfpipe which directs surface flow through a control of known cross-sectional area. This improves the sensitivity of the control from what would have previously been a wide rockbar control.

Nine groundwater monitoring wells were installed at the Dendrobium Pit Top and at the KVCLF during the reporting period. This was conducted as part of slope stability and closure studies to determine groundwater depths as well as water quality. Several geotechnical boreholes were completed under the same program.

The 14-day Report was transitioned from an Excel workbook to the on-line Environmental Quality Information System (EQuIS) during the reporting period. Previously the 14-day Report was uploaded on a nominal fortnightly basis to the IMC website. With the transition, as data is uploaded to the database and checked, it can then be made available to the public. This reduces the possibility of

data entry errors, allows for data to be published as it is received and also provides improved functionality for external stakeholders to review the data.

4.4.2 KVCLF

Minor improvement projects were completed at KVCLF including:

- Dewatering pipeline upgrades to allow for improved hydraulic efficiency and leak detection. This included the rearrangement of pipework to bypass the break tank at the KVT, along with flowmeter installation at the KVT and LDP 5.
- Sediment removal from the on-site sediment ponds due to large amounts of rainfall in FY22.

4.4.3 DCPP

Several improvement works were undertaken at the DCPP over the reporting period. These included 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.

4.4.4 Cordeaux Colliery

Upgrade of the site's electrical supply began in FY22 and continued in FY23. The upgrade replaces ageing infrastructure that is no longer fit for purpose and aligns the infrastructure with ongoing high voltage maintenance requirements. Works in FY23 included the replacement of distribution boards that supply the Administration Building and Workshop.

Repairs were also undertaken to the retaining wall behind the Primary Separation Lagoon (Plate 6). The work reinforces the ground behind the dam wall and provides structural support to water and sewage pipes that pass behind the dam wall.

Real-time water level loggers were installed at key locations around Cordeaux Colliery. The loggers report through to a website where real-time levels can be viewed. Trigger levels have also been established at the sites, with alert notifications set up to inform key personnel when levels reach key marks. This allows rapid response to potentially hazardous levels.

Plate 6: New retaining wall behind Primary Separation Lagoon at Cordeaux Colliery

4.5 Land Preparation

4.5.1 Dendrobium

Land preparation works were undertaken for the slope stability project as well as for the gas management infrastructure project in the form of vegetation removal and topsoil stripping where required. These works were completed in compliance with the IMC Permit to Disturb process and Construction Environmental Management Plans. No threatened species of flora or fauna were identified within the work zones. Hollow bearing trees were identified nearby to the slope stability project, however they were avoided by the works undertaken.

4.5.2 Cordeaux Colliery

No land preparation works occurred at the Cordeaux Colliery site as mining operations are under care and maintenance.

4.6 Exploration

The boreholes drilled during the reporting period are summarised in Table 13. All these holes coincide with CCL 768, although exploration holes are drilled under exploration titles wherever they are present and applicable. Standard exploration holes typically targeted the Bulli and Wongawilli coal seams extending to the American Creek Coal Member. The purpose of these exploration boreholes was to assess coal thickness, depth of seam, coal quality, gas content, and to assist in determining possible future mining conditions by conducting geotechnical tests on the core samples. Some of these holes were drilled for approvals purposes, not exploration (refer to comments in Table 13).

Shortly after drilling commenced on borehole D-A3C-S17-33 in June 2023, it was discovered that whilst the WaterNSW approval is valid to March 2025, the approval from NSW Department of Planning and Environment (DPE) (MAAG0004533/ RR19249409) was only valid until 1 July 2022 (refer to Section 11.1 for further details).

Plan 8 provides an overview of the locations of the exploration and environmental/mining approvals boreholes drilled across CCL 768 in the FY23 reporting period.

Table 13: Boreholes completed during the reporting period

Title Type	Title No.	Program	Hole Name	Alternative Name	Easting	Northing	Drill Type	Hole Purpose	Borehole Total Depth (m)	Drilling Start Date	Borehole Comments
Mining Lease	CCL 768	Dendrobium - Area 3B	S2379D	AD_5D	288307.3	6191147	Fully cored - Borehole cored from surface to total depth.	Hydrological	126.47	21/03/2023	Dam Safety Committee Aquifer Monitoring (approvals)
Mining Lease	CCL 768	Dendrobium - Area 3B	S2475B	EL5_3	288946.0	6190608.8	Partly cored - Borehole chipped to target depths prior to coring.	Geotech	210.41	7/03/2023	Stress monitoring borehole (approvals)
Mining Lease	CCL 768	Dendrobium - Area 3A	S2642B	LW19a-06B	292321.9	6191943.8	Partly cored - Borehole chipped to target depths prior to coring.	Coal Quality	351.29	8/02/2023	LW19A intrusion investigation - Exploration
Mining Lease	CCL 768	Dendrobium - Area 3A	S2642A	LW19a-06A	292322.2	6191942	Partly cored - Borehole chipped to target depths prior to coring.	Coal Quality	348.29	13/01/2023	LW19A intrusion investigation - Exploration
Mining Lease	CCL 768	Dendrobium - Area 3A	S2642	LW19a-06	292323.5	6191943	Partly cored - Borehole chipped to target depths prior to coring.	Coal Quality	354.49	7/12/2022	Coal Quality Exploration
Mining Lease	CCL 768	Dendrobium - Area 3A	S2641B	LW19a-05b	292232.5	6191907	Partly cored - Borehole chipped to target depths prior to coring.	Coal Quality	360.26	21/11/2022	LW19A intrusion investigation - Exploration
Mining Lease	CCL 768	Dendrobium - Area 3A	S2641A	LW19a-05a	292232.1	6191904	Partly cored - Borehole chipped to target depths prior to coring.	Coal Quality	360.72	2/11/2022	Angled Coal Quality Exploration
Mining Lease	CCL 768	Dendrobium - Area 3A	S2641	LW19a-05	292232.6	6191909	Partly cored - Borehole chipped to target depths prior to coring.	Coal Quality	360.85	19/08/2022	Coal Quality Exploration
Mining Lease	CCL 768	Dendrobium - Area 3B	S2521A	GW18-1A	289232	6190767	Fully cored - Borehole cored from surface to total depth.	Hydrological	287.55	21/04/2023	Post Mining LW18 (approvals)
Mining Lease	CCL 768	Dendrobium - Area 6	S2652	D-S3-01_IMC-CAL	292272	6200192	Partly cored - Borehole chipped to target depths prior to coring.	Coal Quality	504.34	12/07/2023	Geophysical logging calibration and coal quality exploration borehole
Mining Lease	CCL 768	Dendrobium - Area 3A	S2655 (IN PROGRESS)	DE-A1-05	293743.3	6193891	Partly cored - Borehole chipped to target depths prior to coring.	Structure definition	NA	20/06/2023	LW21A intrusion investigation (above seam) – (approvals)
Mining Lease	CCL 768	Dendrobium - Area 3A	S2655A (IN PROGRESS)	DE-A1-05A1	293743.3	6193891	Fully cored - Borehole cored from surface to total depth.	Structure definition	NA	24/07/2023	LW21A intrusion investigation (above seam) – piezometer installation (approvals)
Mining Lease	CCL 768	Dendrobium - Area 3A	S2658 (IN PROGRESS)	DE-A1-02	293667	6194624	Fully cored - Borehole cored from surface to total depth.	Hydrological	NA	26/07/2023	Cordeaux Dam Monitoring (approvals)

5. ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

The actions arising from the previous Annual Review are detailed in Table 14.

Table 14: Actions arising from previous Annual Review

Action Required	Requested by	Where covered in this Report
Construction Activities: • Gas Management infrastructure installation at Ventilation Shaft 2/3 site. • Slope stability remediation to address landslip issues in FY22. • Surface and yard repairs. • LDP 5 access upgrade. • Surface upgrades including installation of workshop domes and pallet racking. • Area 3C ventilation upgrade, including gas drainage plant and booster fan upgrades. • Area 3C power upgrade to satisfy ventilation and gas drainage infrastructure.	IMC	Section 4.4.1.6, Section 4.4.1.5, Section 4.4.1.1, Section 4.4.1.9, Section 4.4.1.10, and Section 12.1.4.
Erosion and Sediment Control: • Improvements and ongoing maintenance to drainage. • Additional site sealing and surface repairs.	IMC	Section 4.4.1 and Section 6.2.
Weed Management: • Renewed focus on weed management at KVCLF and KVRL.	IMC	Section 6.6.1
Noise Management: • Alert/warning system developed and implemented for directional real-time noise monitoring at Dendrobium Pit Top.	IMC	Section 6.8.1.4
Hydrocarbon and Chemical Management: • Preliminary works (footings and base slab) to facilitate installation of the bulk diesel tank and solcenic tanks. • Targeted Site Investigation (TSI) using the results from the Preliminary Site Investigation (PSI).	IMC	Section 4.4.1.10 and Section 6.4.1
Water Management: • Installation of a bypass to allow water from North West Mains (NWM) D2 pump station to be pumped directly to LDP 5, bypassing the old Kemira Workings.		

• Installation of turbidity probe on the dewatering pipeline at the Kemira Valley Break Tank, with alarms to the control room if elevated turbidity levels are detected and a water meter to compare flows at LDP 5 to identify any potential leakage. • Flow meter installation at LDP 5.	IMC	Section 4.4.1.3, Section 4.4.2 and Section 6.3.1.6
Environmental Monitoring: • Installation of seven outstanding surface flow monitoring sites in catchment watercourses around the Dendrobium mining area.	IMC	Section 4.4.1.11
Environmental Management System: • Continue to maintain certification against ISO 14001 in FY23. Environmental Management Plans will be updated, and governance reviews undertaken as required.	IMC	Section 10.1.1, Section 10.1.3 and Section 13.3
Legacy Sites and Rehabilitation: • Removal of contaminated soil from the O'Briens Gap Pump House. • Continued investigation into the removal of redundant infrastructure associated with O'Briens Drift, particularly at the KVCLF.	IMC	Section 8.1.1.2
Community: • Continued community engagement and support of community initiatives.	IMC	Section 9.2.1.1 and 9.2.1.5
Cordeaux Colliery: • Completion of upgrades to the Cordeaux Colliery electrical supply. • Upgrade to the digital reconciliation monitoring system installed on the diesel tank.	IMC	Sections 4.4.4, Section 6.16.2 and Section 12.2
DCPP: • Various works which include 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.	IMC	Section 4.4.3

6. ENVIRONMENTAL PERFORMANCE

6.1 Air Pollution

6.1.1 Dendrobium Mine

Air quality management is an environment aspect within the Environmental Management System for the Dendrobium operation. Dust controls as detailed in the approved Air Quality and Greenhouse Gas Management Plan were implemented during the reporting period.

6.1.1.1 Air Quality Monitoring System

Dendrobium's air quality monitoring program consisted of two real time particulate matter optical photometers during the reporting period as required by the Air Quality and Greenhouse Gas Management Plan and Environment Protection Licence (EPL) 3241.

The results from the photometers are compared to the short term 24-hour average impact assessment criteria of 50 µg/m^3 and the annual impact assessment criteria of 30 µg/m^3.

Dust Deposition Gauges (DDGs) and High-Volume Air Samplers (HVAS) may be used if required to investigate complaints or operational dust related issues, however they are not included in the regular dust monitoring program. These methods will be compared to the annual limit of 4 g/m^2/month and 90 µg/m^3 respectively for deposited dust and total suspended particulate (TSP) as outlined in Table 15. DDGs and HVAS were not utilised in the reporting period.

Results from the air quality monitoring program are reported:

- via the IMC website in the 14-day Report; and
- annually in the EPL Annual Return and Annual Review.

Table 15: Impact Assessment Criteria for Air Quality

Pollutant	Goal	Averaging Period
Particulate matter < 10 mm (PM_{10})	50 µg /m^3	24-hour
	30 µg /m^3	Annual
Total Suspended Particulates (TSP)	90 µg /m^3	Annual
Deposited Dust (insoluble solids)	4 g/m^2	Annual

6.1.1.2 Optical Photometer Results

Dust levels measured by the optical photometers at both KVCLF and Dendrobium Pit Top displayed levels well below the required limits during the reporting period, as shown in Figure 2. In addition to mitigation measures implemented on site, rainfall over the majority of the reporting period has also assisted in the reduction of dust emissions. During the reporting period, the KVCLF unit failed due to a laser error and was removed from service for repair. Daily inspections of the site were completed until a replacement unit was sourced (approximately one week). After being repaired, the original unit was put back into service and the replacement unit removed. As this is the second reporting period for the optical photometers, a direct comparison to long term trends is not possible, however

the results are slightly reduced to that of the previous year, with a similar small increase in levels seen over the warmer months, and lowest levels seen around June and July.

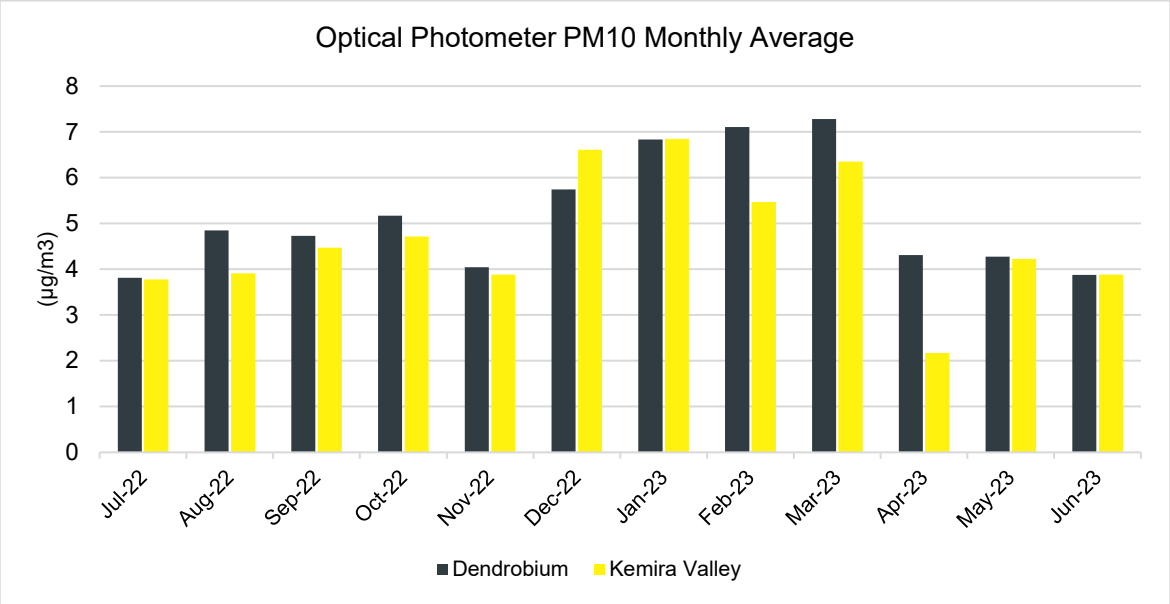


Figure 2: Optical Photometer Results - FY23

A comparison of trends between FY22 and FY23 is provided in Appendix 5.

6.1.2 Cordeaux Colliery

Air quality is not actively monitored at Cordeaux Colliery as there is no coal handling at or coal transport from the site. Trafficable and storage areas are sealed.

6.1.3 Ventilation Shaft 1

No air quality issues are considered relevant for the Ventilation Shaft 1 as the site has been rehabilitated or is covered with gravel. Ventilation Shaft 1 is an intake shaft and therefore there are no dust emissions.

6.1.4 Ventilation Shaft 2/3

Air quality at Ventilation Shaft 2/3 had the potential to be impacted due to the construction of gas management infrastructure. Mitigation measures such as water carts were implemented to reduce dust emissions. Air quality is not actively monitored at the site apart from through site inspections. Further, odour levels are low, and the site is in a remote location. No complaints have been received.

6.1.5 DCPP

Air quality at the DCPP is managed under the BlueScope Steel EPL 6092 with quarterly reporting to BlueScope Steel undertaken. No issues associated with IMC activities at the site were identified during the reporting period.

6.2 Erosion and Sediment

6.2.1 Dendrobium Mine

Erosion and sediment control at Dendrobium is managed in accordance with the approved Water Management Plan. This plan addresses erosion and sediment controls for the Dendrobium Pit Top, KVCLF, Ventilation Shaft 1 and 2/3 sites and the KVRL.

6.2.1.1 Erosion Control

Both the Dendrobium Mine Pit Top and KVCLF predominantly consist of sealed surfaces and vegetated areas. As limited soil is exposed, the potential for erosion is low.

6.2.1.2 Sediment Control

Sediment control structures are inspected and maintained on a regular basis. Sediment is removed from drainage pits along the dirty water drainage system and the GWTP by an industrial vacuum tanker as required. The sediment pond assists in settling out suspended solids before surface water enters the GWTP.

6.2.1.3 Slope Stability

Due to the significant rainfall at the site over FY22 and FY23, the Dendrobium Pit Top experienced significant slope stability issues in the form of landslips in several locations – mostly along the portal road and adjacent to the Operations Building.

Initial “make safe” clean-up was conducted to allow safe site operations to continue. Following this, tree removal was conducted along the slope to reduce the likelihood of further slippage and risk of harm to personnel, infrastructure and equipment. The root balls of the trees were left in situ to aid in slope retention.

An engineering consultancy was engaged to provide a permanent repair solution utilising soil nails, shotcrete and “Greenax” mesh that avoided undercutting the unstable material and will allow vegetation to re-establish. Works commenced in FY23, with completion due in FY24.

6.2.2 Ventilation Shaft 1

Erosion is not a significant issue at the Ventilation Shaft 1 site as disturbed areas have been rehabilitated or stabilised with gravel.

6.2.3 Ventilation Shaft 2/3

Due to the construction of gas management infrastructure, the site has been re-disturbed. A Construction Environmental Management Plan was developed and implemented for the site. Prior to construction, the two existing sediment ponds were enlarged to provide additional capacity for potentially sediment laden runoff. Other sediment controls and structures were installed and were maintained on a regular basis.

6.2.4 Cordeaux Colliery

Erosion is not a significant issue at the Cordeaux Colliery Pit Top site as the majority of the site surface is sealed with stormwater run-off directed to appropriate holding dams and filter systems.

6.2.5 DCPP

Erosion and sediment control at the DCPP is managed under the BlueScope Steel EPL 6092.

The sediment basin at 4-Area was dewatered and cleaned out during the previous reporting period. No additional works were required in this reporting period.

6.3 Surface Water

6.3.1 Dendrobium Mine

6.3.1.1 Mine Subsidence

The surface water monitoring program under the Subsidence Management Plan (SMP) enables Dendrobium to maintain a database of regional water quality and to determine any changes to surrounding water quality. Potential water quality impacts as a result of mining are described in Section 6.14.

6.3.1.2 Mine Site Surface Facilities

The surface water monitoring network for surface facilities consists of five regular sites (see Plan 9) which include sites upstream and downstream of both the Pit Top and Kemira Valley, as well as the mine dewatering LDP 5, located at Marley Place.

The monitoring program includes:

- recording of field observations; and
- analysis of the water by a NATA accredited laboratory covering pH, conductivity, total suspended solids (TSS), metals (specified for LDP 5) and oil and grease.

6.3.1.3 Monitoring and Results

The majority of the monitoring sites are located in natural watercourses that flow adjacent to the Dendrobium Pit Top and KVCLF sites, in particular American Creek and Brandy and Water Creek respectively. Upstream and downstream sites are sampled every two months, while LDP 5 is sampled monthly. Variations in water quality in response to local geology and rainfall were within expectations during the reporting period. Results from the downstream sites are compared to the results from upstream sites at each location. These comparisons are discussed in detail in Sections 6.3.1.4 and 6.3.1.5. Rainfall data for the year is provided in Section 7.2.1.4.

6.3.1.4 KVCLF

During the reporting period, there has been no significant difference between the upstream and downstream results for points Dend 7 (upstream of the KVCLF) and Dend 10 (downstream of the KVCLF) identified in bi-monthly monitoring. Results indicate that the water management system in operation at the KVCLF site is effective with minimal influence on Brandy and Water Creek. The results are summarised in Table 16 and Table 17. There was natural variation in sample results throughout the reporting period. An elevated TSS result was observed for Dend 10 in January and was attributed to natural erosion due to rainfall prior to the sampling event. No evidence of impact from operational activities was observed. Outside of this result, trends for Dend 7 and Dend 10 remained relatively consistent for FY23. pH, electrical conductivity (EC) and Total Suspended Solids (TSS) for the reporting period are shown in Figure 3, Figure 4 and Figure 5 respectively.

During the reporting period, it was identified that a revised upstream monitoring location may be required due to the close proximity of Dend 7 to other site activities. Sampling was undertaken for the proposed location approximately 200 m upstream in conjunction with Dend 7 with results

indicating that it is a comparable location. The new site has now been included in the approved Water Management Plan.

Overall trends show water quality has been stable in relation to the KVCLF site. Graphs depicting long-term trends in water quality are provided in Appendix 5.

Table 16: Summary of Water Quality Results – Dend 7 (Upstream of KVCLF)

Parameter	Units	Min	Max	FY Average
pH	pH units	7.72	8.42	8.02
TSS	mg/L	<5	14	8
Oil and Grease	mg/L	<5	<5	<5
EC	µS/cm	306	491	416

Table 17: Summary of Water Quality Results – Dend 10 (Downstream of KVCLF)

Parameter	Units	Min	Max	FY Average
pH	pH units	7.87	8.68	8.20
TSS	mg/L	<5	26	10
Oil and Grease	mg/L	<5	<5	<5
EC	µS/cm	315	516	433

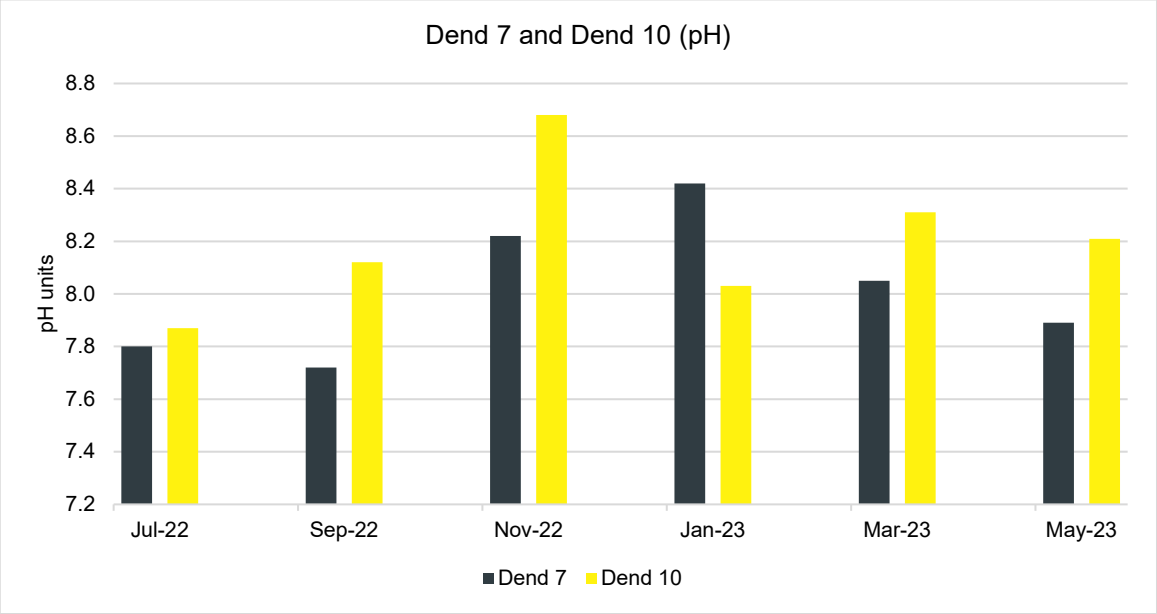


Figure 3: Dend 7 and Dend 10 Results FY23 - pH

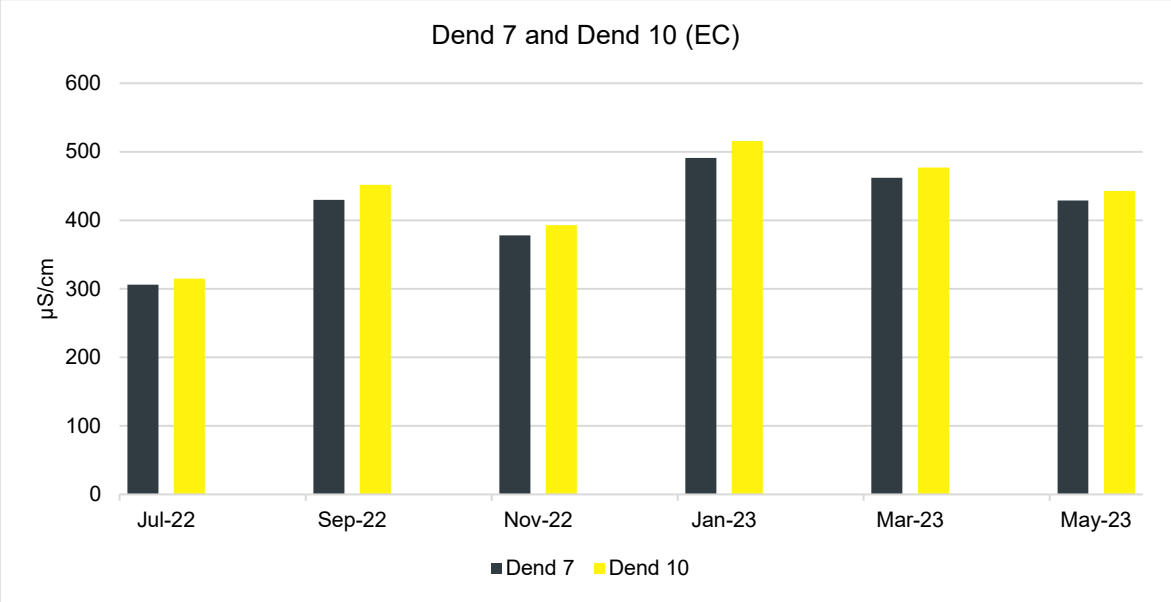


Figure 4: Dend 7 and Dend 10 Results FY23 - EC

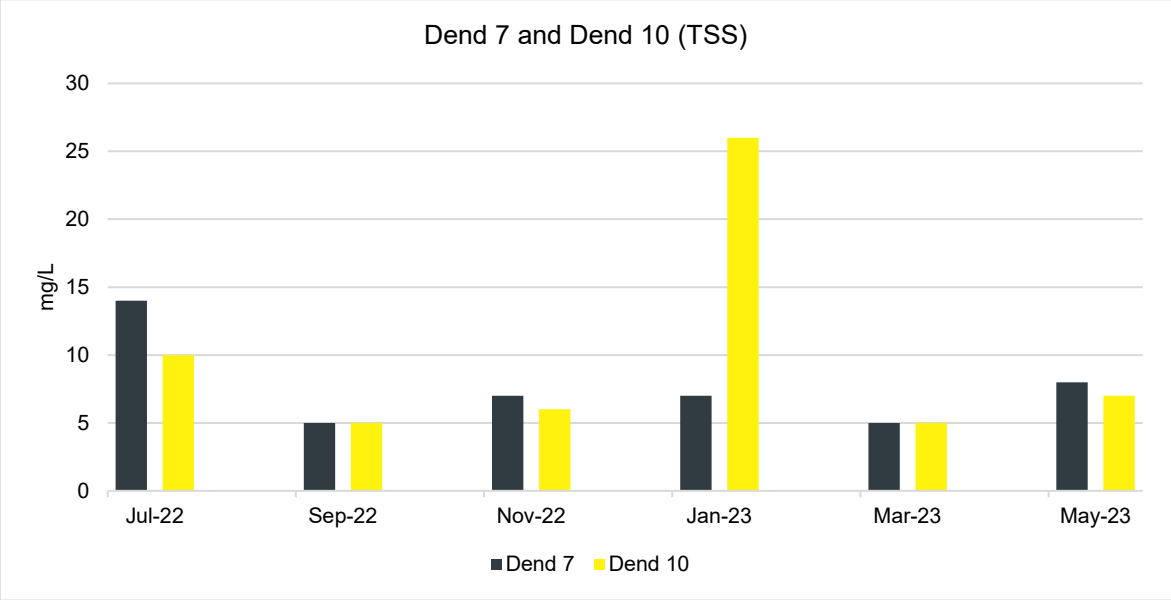


Figure 5: Dend 7 and Dend 10 Results FY23 - TSS

6.3.1.5 Dendrobium Pit Top

A comparison of the water quality results from Dend 12 (upstream of Pit Top) and Dend 13 (downstream of Pit Top) indicate that there is no significant variation in TSS, oil and grease levels, or pH. The results are summarised in Table 18 and Table 19. Trends for pH, EC and TSS for FY23 are shown in Figure 6, Figure 7 and Figure 8 respectively. Overall trends show water quality has been stable in relation to the Dendrobium Pit Top site. Graphs depicting long-term trends in water quality are provided in Appendix 5.

Table 18: Summary of Water Quality Results – Dend 12 (Upstream of Pit Top)				
Parameter	**Units**	**Min**	**Max**	**Average**
pH	pH units	7.81	8.08	7.94
TSS	mg/L	<5	<5	<5
Oil and Grease	mg/L	<5	11	5.86
EC	µS /cm	160	270	228

Table 19: Summary of Water Quality Results – Dend 13 (Downstream of Pit Top)				
Parameter	**Units**	**Min**	**Max**	**Average**
pH	pH units	7.63	8.12	7.94
TSS	mg/L	<5	10	6
Oil and Grease	mg/L	<5	<5	<5
EC	µS /cm	222	376	307

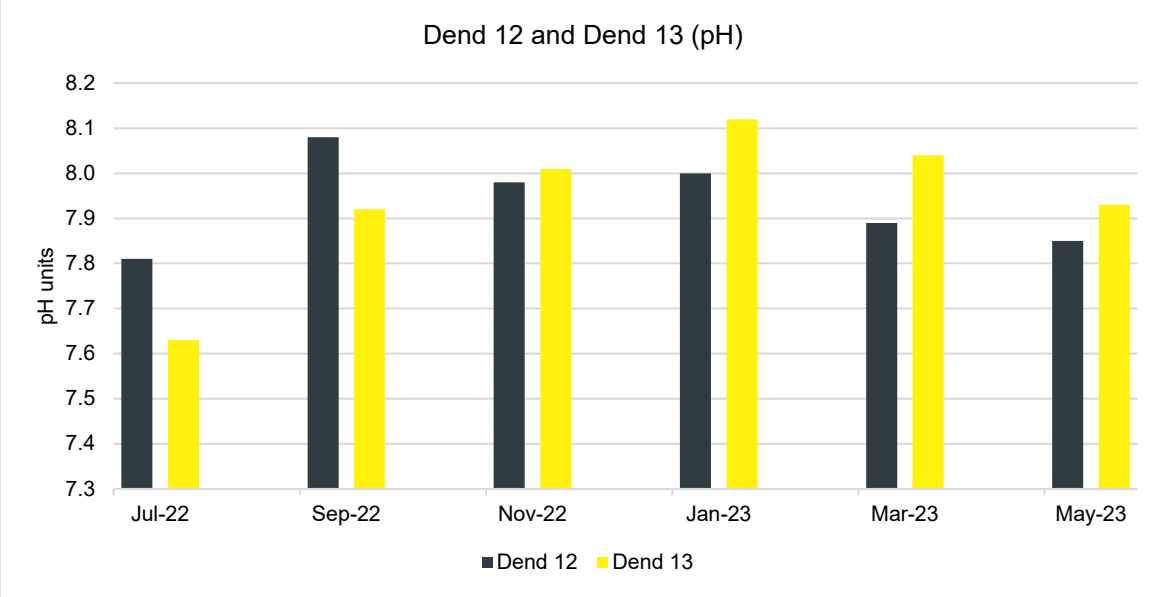


Figure 6: Dend 12 and Dend 13 Results FY23 – pH

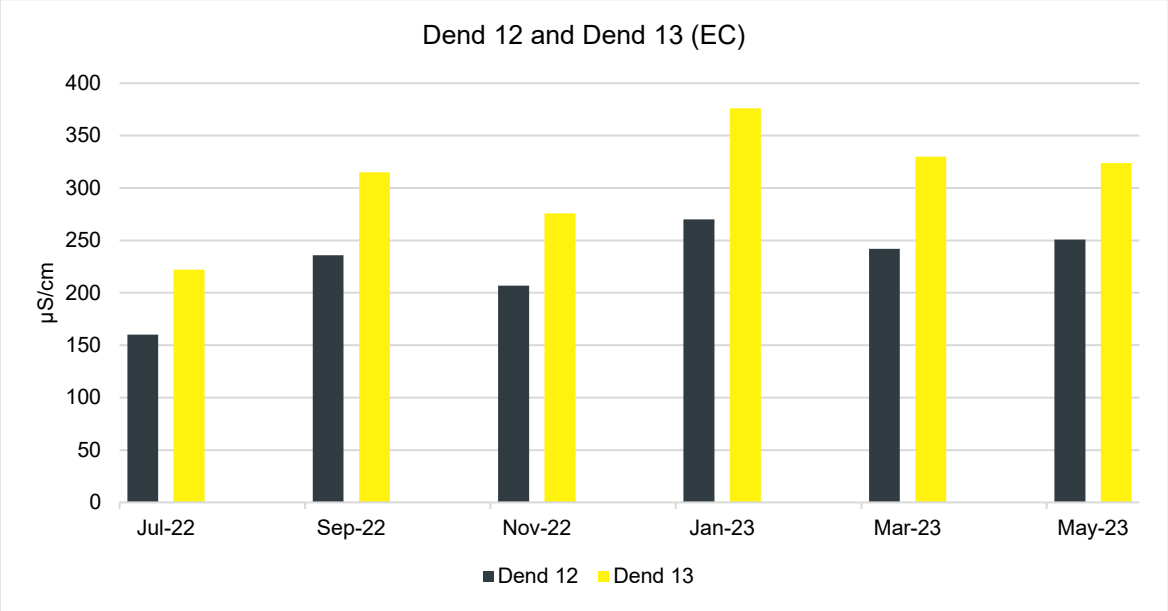


Figure 7: Dend 12 and Dend 13 Results FY23 – EC

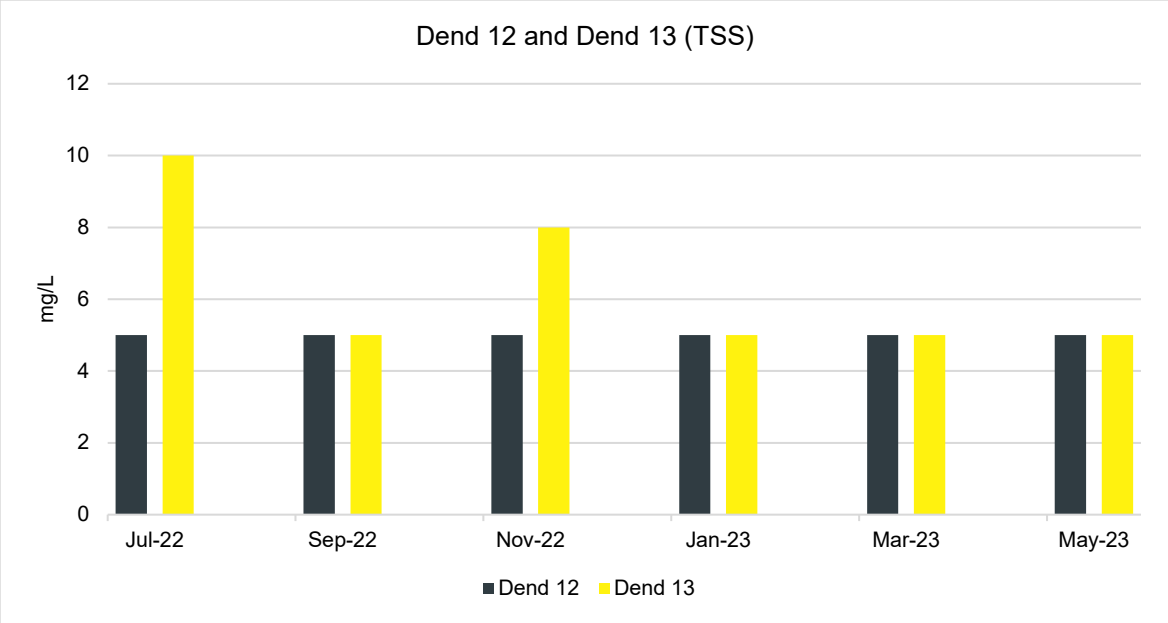


Figure 8: Dend 12 and Dend 13 Results FY23 – TSS

6.3.1.6 Monitoring and Results – LDP 5

Water from the old Kemira Mine workings, mine goafs in Areas 2 and 3 and KVCLF sediment ponds is discharged through LDP 5, located at Marley Place (refer to Plan 9). The mine dewatering system was changed in FY23 with the installation of a bypass to allow water from NWM D2 pump station to be pumped directly to LDP 5, bypassing the old Kemira Workings. This change was implemented the reduce the pressure on an existing pipe range which has been found to be leaking.

A turbidity probe was installed on the dewatering pipeline at the Kemira Valley Break Tank, with alarms to the control room if elevated turbidity levels are detected. A new flow meter was also installed at LDP 5.

Brine from the IMC Appin West and Appin North WTPs is transported by truck to Marley Place and discharged through LDP 5. A total volume of 4,001.33 ML (including 49.34 ML, 26.63 ML and 29.88 ML of brine from the Appin West, Appin North and Temporary Appin North WTPs respectively) was discharged in this reporting period. Trends in water discharge over previous years is provided in Appendix 5.

The monitoring requirements for LDP 5 are provided in the Water Management Plan.

The monitoring results from the LDP 5 sampling program are reviewed monthly. The monitoring results are reported to the relevant external stakeholders via the:

- EPL Annual Return (see Appendix 1);
- Annual Review; and
- IMC website (14-day Report).

A summary of monitoring results for the reporting period against the water quality concentration limits in EPL 3241 is provided in Table 20. The reporting period saw no non-compliances recorded against the EPL water quality concentration limits during the monthly compliance monitoring and is in line with trends from previous reporting periods. The general trends for LDP 5 remained relatively consistent for FY23 as shown in Figure 9 and Figure 10.

Long-term average trends have shown generally stable results within limits. A noticeable increase in zinc concentrations has been observed due to increased sampling during periods of brine discharge. Elevated EC is recorded when brine is being discharged at the time the sample is collected. An increase in TSS is likely as a result of the change in dewatering from the old Kemira workings to the NWM D2 pump station being pumped directly to LDP 5. Graphs depicting trends in water quality over previous years is provided in Appendix 5.

Table 20: EPL Annual Monitoring Summary for LDP 5

Parameter	Units	Min	Average	Max	EPL Limit[10]
Arsenic	mg/L	0.002	0.028	0.116	1.3
EC	µS/cm	1510	4048	10600	N/A
Copper	mg/L	<0.001	0.001	0.002	0.08
Nickel	mg/L	0.011	0.120	0.444	5
Oil and Grease	mg/L	<5	<5	<5	10
pH	pH	8.03	8.23	8.69	6.5 - 9.0
TSS	mg/L	<5	8	16	30
Zinc	mg/L	0.020	0.175	0.311	0.4

A copy of the 2022/2023 EPL Annual Return has been provided as Appendix 1.

[10] Water quality concentration limits for metals are 'dissolved'.

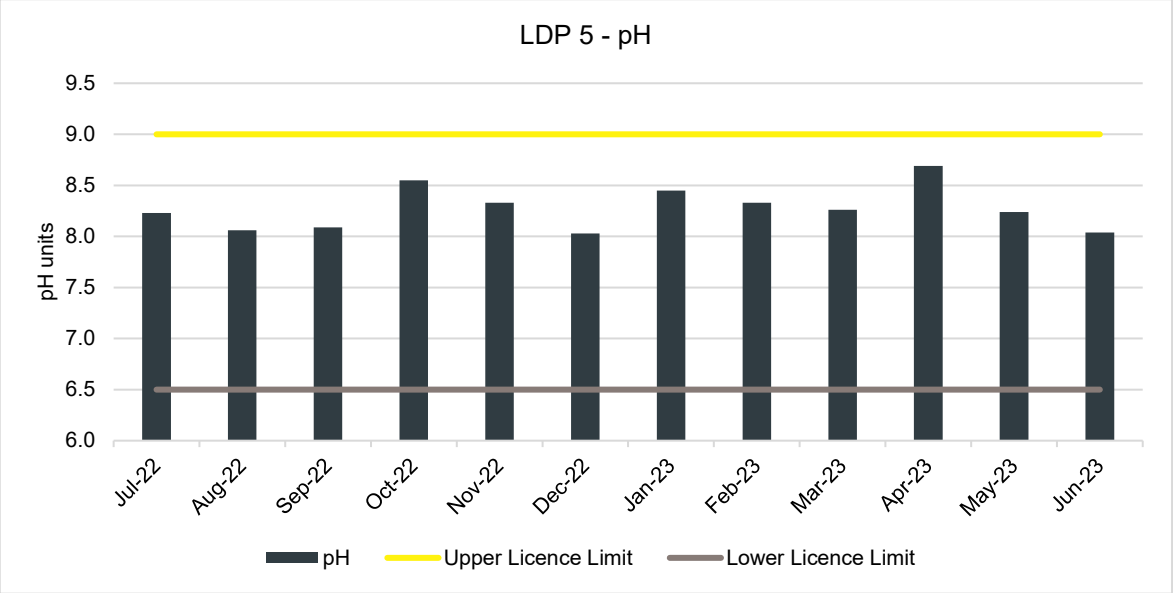


Figure 9: LDP 5 - pH (FY23)

Figure 10: LDP 5 - TSS (FY23)

6.3.1.7 Allans Creek Monitoring Program

The Allans Creek monitoring program continued over the 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 WTPs on Allans Creek, following the commissioning of the WTP at Appin North[11]. 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).

[11] The temporary WTP was commissioned in May 2021 and was decommissioned in December 2022. The Appin North WTP was commissioned in February 2023.

The results of the monitoring and the comparison to the modelling results commenced in FY23 and is planned to be completed in FY24.

6.3.2 Cordeaux Colliery

Due to the cessation of coal mining at Cordeaux Colliery, the amount of dirty water generated at the Pit Top has significantly reduced. Water from the surface areas is captured in the dirty water lagoon then transferred using a pump to the upper-level Primary Stabilisation Lgoon for settlement and is gravity fed through two more dams, the second dam being the Mine Water Holding Lagoon. This water is then transferred to underground mine workings via a gravity fed pipeline, negating the need for surface discharge. The water returned to the mine is of good quality.

During the reporting period approximately 4.0 ML of water was discharged from the Mine Water Holding Lagoon to the underground workings. An upgrade to the flow meter was completed in FY23 to reduce the impact of debris clogging the pipe. A real-time water level sensor was also installed in the Mine Water Holding Lagoon during the reporting period. This allows real-time online access to dam water levels as well as email and SMS alert notifications set at desired trigger levels.

Figure 11 shows the trends for pH and EC of water within the Mine Water Holding Lagoon from 2000 to 2023. Since cessation of underground pumping operations in 2002, water quality in the Mine Water Holding Lagoon has greatly improved (particularly in relation to EC) and remained generally stable. During the reporting period, monitoring results within the Mine Water Holding Lagoon continues to reflect good water quality. The pH ranged between 6.82 and 8.19 and EC ranged between 115 and 219 µS/cm. Oil and grease results were below the limit of reporting for all samples collected in FY23.

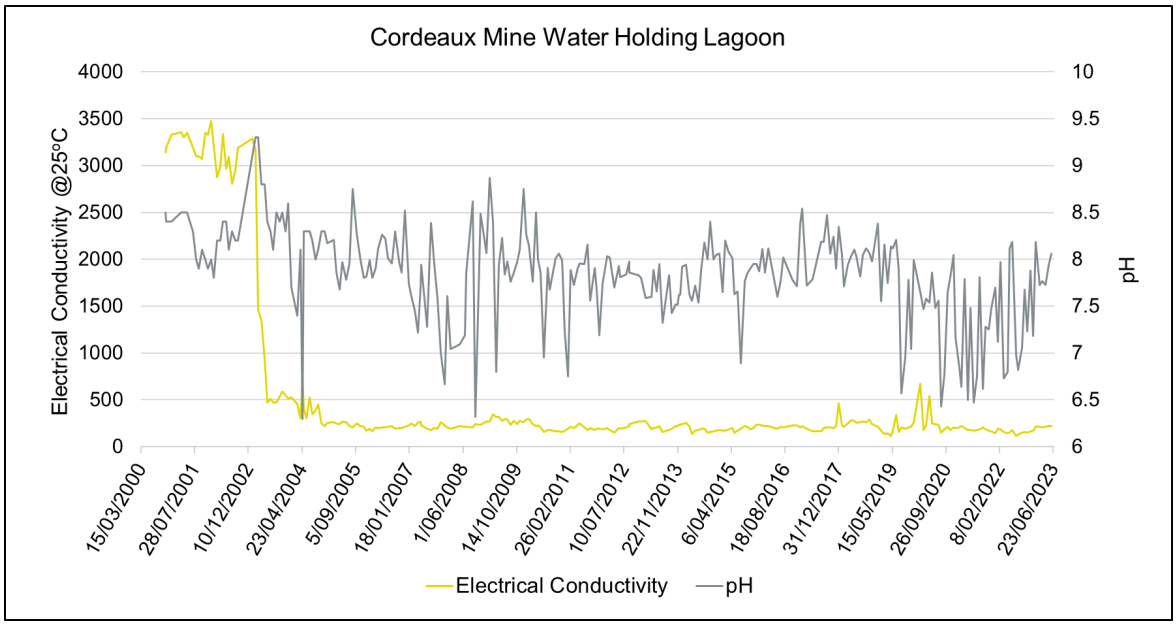


Figure 11: Water Quality Data - Mine Water Holding Lagoon

The clean area catchment run-off from the Cordeaux Pit Top site (including the sealed car parking area) reports to the Sand Filter Lagoon and leaves site to the local environment via the Sand Filter Lagoon underflow. Water quality from this point is analysed on a nominal monthly basis. Water quality analysis for this reporting period shows the discharge water quality was between 7.75 and 8.24 pH units, with EC ranging between 212 and 404 µS/cm. Oil and grease results were below the limit of reporting in all FY23 sampling events. Results from the Sand Filter Lagoon outflow for the period 2000 to 2023 are shown in Figure 12.

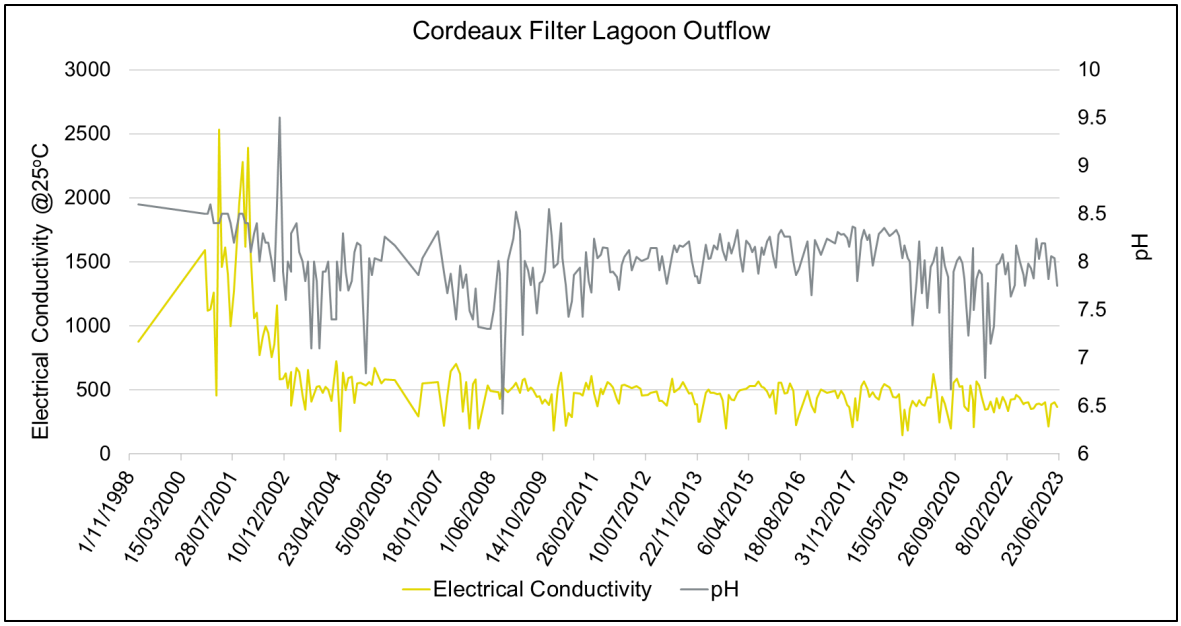


Figure 12: Water Quality Data - Sand Filter Lagoon Outflow

The long-term data suggests that the existing storage capacity and water management is adequate in managing the current activities and rainfall events.

6.3.3 DCPP

Surface water quality at the DCPP is generally managed under the BlueScope Steel EPL 6092. Any runoff from the DCPP enters the Bluescope Coke Ovens Recovery Basin.

6.4 Contaminated Land

6.4.1 Dendrobium Mine

No significant land pollution events occurred during the reporting period at Dendrobium Mine. A PSI was undertaken by GHD in FY22. The PSI involved site inspections and a desktop assessment of previously reported areas of actual or potential contamination on site. A TSI was planned to be undertaken in FY23, using the results from the PSI, however this has been postponed.

6.4.2 Cordeaux Colliery

Cordeaux Colliery has a small, localised area which has been affected by leaching from the slag base at the surface switch yard. This was first noted in 2005 as vegetation in the localised area appeared to have been adversely affected. No further impact has been observed in this reporting period.

Rehabilitation planning for sites will include investigations to identify land contamination. If areas of contamination are identified that require remedial works, this will then be completed in an appropriate manner in accordance with the requirement/agreement of stakeholders and relevant Government agencies.

No additional areas of land contamination were identified in FY23.

6.4.3 Corrimal No. 3 Shaft

On 4 April 2017, IMC identified that two transformers had been vandalised at the Corrimal No. 3 Ventilation Shaft which resulted in the spilling of oil at the site. A clean up notice was issued by

WaterNSW. A Remedial Action Plan (RAP) was submitted and works completed. Refer to previous Annual Reviews for more detail.

A PSI was undertaken by GHD in FY22. A TSI was planned to be undertaken in FY23, using the results from the PSI, however this has been postponed.

Monthly inspections continue at Corrimal No. 3, focussing on weed management, site security and visual observations of sites previously affected by the spill. No environmental issues were identified during the reporting period.

6.4.4 DCPP

Contaminated land at the DCPP is managed under the BlueScope Steel EPL 6092.

A PSI was undertaken by GHD in FY22. The PSI involved site inspections and a desktop assessment of previously reported areas of actual or potential contamination on site. A TSI was planned to be undertaken in FY23, using the results from the PSI, however this has been postponed.

6.5 Threatened Fauna and Flora

6.5.1 Dendrobium Mine

No threatened species were identified on the Dendrobium Pit Top site, KVCLF or Ventilation Shaft 1 or 2/3 sites during this reporting period.

A 2022 report by Niche Environment and Heritage (Niche) determined that there would be no impacts to threatened flora or fauna as a result of the construction of the gas management infrastructure at the Ventilation Shaft 2/3 site.

Results from the flora and fauna monitoring undertaken via the SMP process are detailed in Section 6.14 of this report.

As noted in Section 6.2.1.3, slope stability issues at the Pit Top required the removal of a significant number of trees. The area was assessed and a Permit to Disturb was completed for these works. A 2023 assessment by Niche did not identify any threatened species in the vicinity of the slope stabilisation works at the Dendrobium Pit Top.

6.5.2 Cordeaux Colliery

During the reporting period trimming of branches around the telecommunications infrastructure (GRN, Telstra and Optus) was undertaken as well as minor trimming of small shrubs to improve drivers' line of sight at some Stop and Give-way signs around site.

6.6 Weeds

6.6.1 Dendrobium Mine

Weeds are managed in accordance with the Rehabilitation Management Plan.

Within the Dendrobium Pit Top area, some of the more accessible areas were targeted for weed species removal. This included the removal and/or treatment of Crofton Weed, Lantana, Privet, Ginger Lily and other woody and herbaceous weeds. Activities at the KVCLF targeted accessible areas for Mysore Thorn removal and/or treatment, and mulching biomass for weed control (see Plate 7). Weed treatment was also undertaken along the KVRL.

Due to the significant amounts of rainfall over FY22/FY23, weed treatment and removal efforts were heavily impacted. Ongoing weed management activities are planned for FY24 to effectively manage weeds.

Plate 7: Weed control by mulching biomass - KVCLF

6.6.2 Cordeaux Colliery and Corrimal No. 3 Shaft

Weeds at Cordeaux Colliery are controlled on a routine basis by the site contract gardener through targeted spray activities. Weed growth within the area of the boundary fire break zone is addressed as required.

Weeds at Corrimal No. 3 Shaft are monitored during the monthly site inspection. Areas of concern are highlighted and targeted in periodic weed management campaigns.

6.6.3 Ventilation Shafts 1 and 2/3

Weed management is periodically conducted at Ventilation Shaft 1 and Ventilation Shaft 2/3 as required.

Weed species in the Ventilation Shaft 1 and 2/3 areas remain at very low densities and are generally located in disturbed areas or highly trafficked such as roadways. Inspections have occurred on a regular basis throughout FY23, with no significant actions identified.

6.7 Blasting

6.7.1 Dendrobium Mine

No surface blasting activities were undertaken during the reporting period. Minor blasting activities underground are undertaken using approved management plans.

6.7.2 Cordeaux Colliery

Cordeaux Colliery is under care and maintenance and no blasting was undertaken.

6.8 Operational Noise

6.8.1 Dendrobium Mine

6.8.1.1 Noise Management Strategies

Noise management is an important aspect of the Dendrobium operations as the Pit Top and KVCLF sites are located adjacent to residences in Mount Kembla and Kembla Heights. Quarterly noise monitoring is conducted to satisfy the requirements of the Consent and the approved Noise Management Plan. Noise management measures were implemented as detailed in the Noise Management Plan.

6.8.1.2 Noise Monitoring Program

The program includes noise monitoring of the Pit Top site, the KVCLF and the KVRL operations. Attended quarterly noise monitoring is carried out quarterly at three locations as shown on Plan 9. In FY22, an intermediate site for R39a was introduced to better measure compliance with the noise criteria. R39a is located near a stream and without line of sight to KVCLF, affecting the ability to measure potential noise emissions from operational activities. Instead, measurements are taken at a nearby location with low ambient noise and line of sight to KVCLF. Results are then extrapolated from this point to determine compliance.

Five directional real-time noise monitors are installed at the Pit Top site as a proactive, internal measure to manage noise and investigate complaints (refer to section 6.8.1.4).

Rail haulage noise measurements are completed annually. This monitoring has been undertaken as per the approved Noise Management Plan. Rail noise is also monitored using two fixed noise monitors along the KVRL. The data from the fixed noise monitors is used for investigating complaints.

The results from the attended noise monitoring are compared to the noise criteria for Dendrobium Mine and KVCLF for daytime, evening, and night-time periods as set out in the Consent. The $LA_{eq,15\ min}$ and $LA_{1,1\ min}$ noise impact assessment criteria are provided in Table 21.

Table 21: Monitoring Requirements and Prescribed Limits

Location	Noise Criteria $LA_{eq,15\ min}$ (dBA)			Noise Criteria $LA_{1,1min}$ (dBA)
	Daytime (7 am – 6 pm)	Evening (6 pm - 10 pm)	Night-time (10 pm – 7 am)	
R1	40	40	39	49
R6a	40	40	37	47
R39a	37	35	35	45

Attended noise monitoring was conducted on a quarterly basis throughout the reporting period.

During the reporting period, Dendrobium was generally compliant against the $LA_{eq,15min}$ and $LA_{1,1min}$ criteria, with the exception of:

- One exceedance of evening $LA_{eq,15min}$ criteria at R39a.
- Three exceedances of night-time $LA_{eq,15min}$ criteria at R39a.
- One exceedance of $LA_{1,1min}$ criteria at R6a.

These exceedances were reported to DPE, EPA and adjacent landholders as required and are discussed further in Section 11.

Location R1 (17 High Street)

R1 is located to the north of the Pit Top. Representative $LA_{eq,15min}$ noise results did not exceed the noise criteria during the reporting period. The $LA_{eq,15\text{-}min}$ representative noise results for R1 for FY23 are provided in Figure 13 and annual averages are provided in Figure 14.

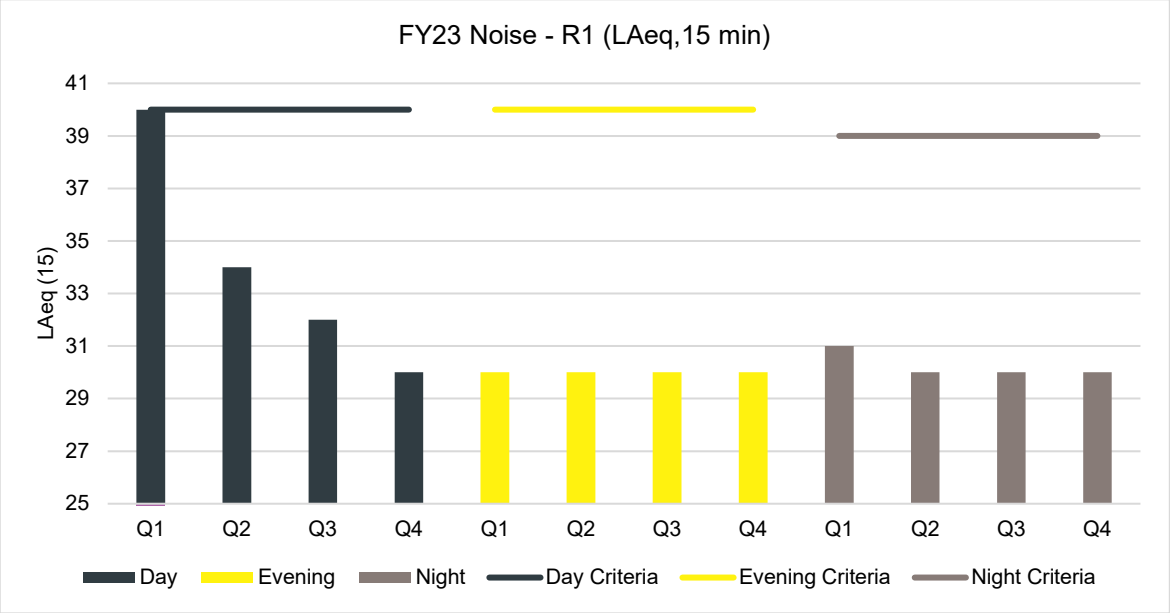


Figure 13: Site R1 Noise Compliance ($LA_{eq,15\ min}$) – FY23

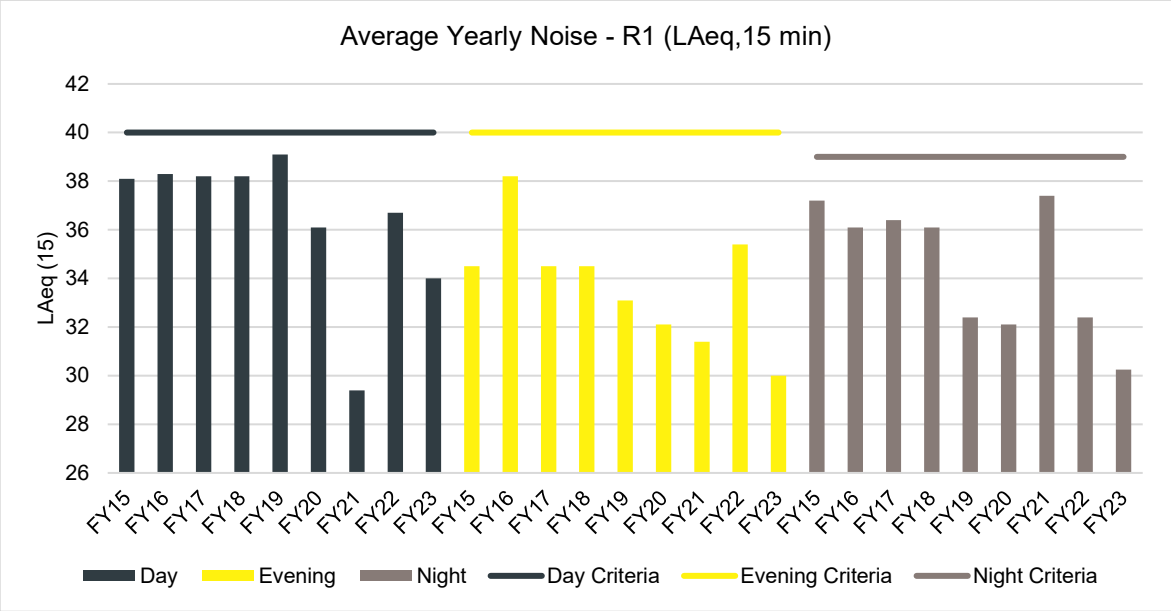


Figure 14: Site R1 Noise Compliance ($LA_{eq,15\ min}$) – FY15 to FY23

Location R6a (374 Cordeaux Road)

R6a is located to the east of the Dendrobium Pit Top. The $LA_{eq,15min}$ representative noise results did not exceed the noise criteria during the reporting period. $LA_{eq\ 15\text{-}min}$ representative noise results for R6a for FY23 are provided in Figure 15 and annual averages are provided in Figure 16.

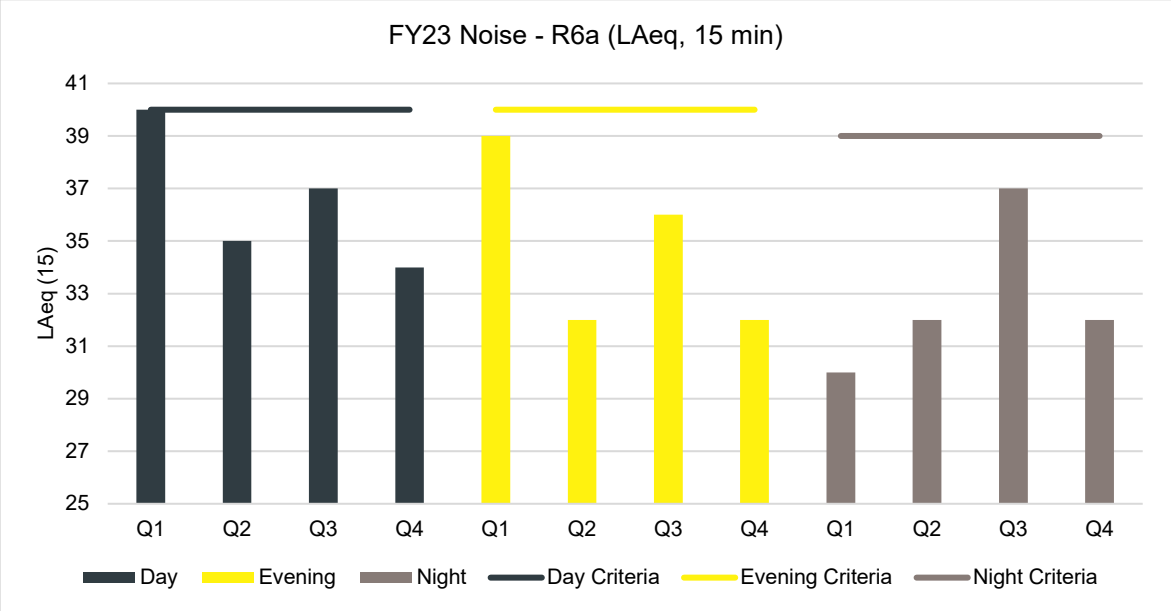


Figure 15: Site R6a Noise Compliance ($LA_{eq,15\ min}$) – FY23

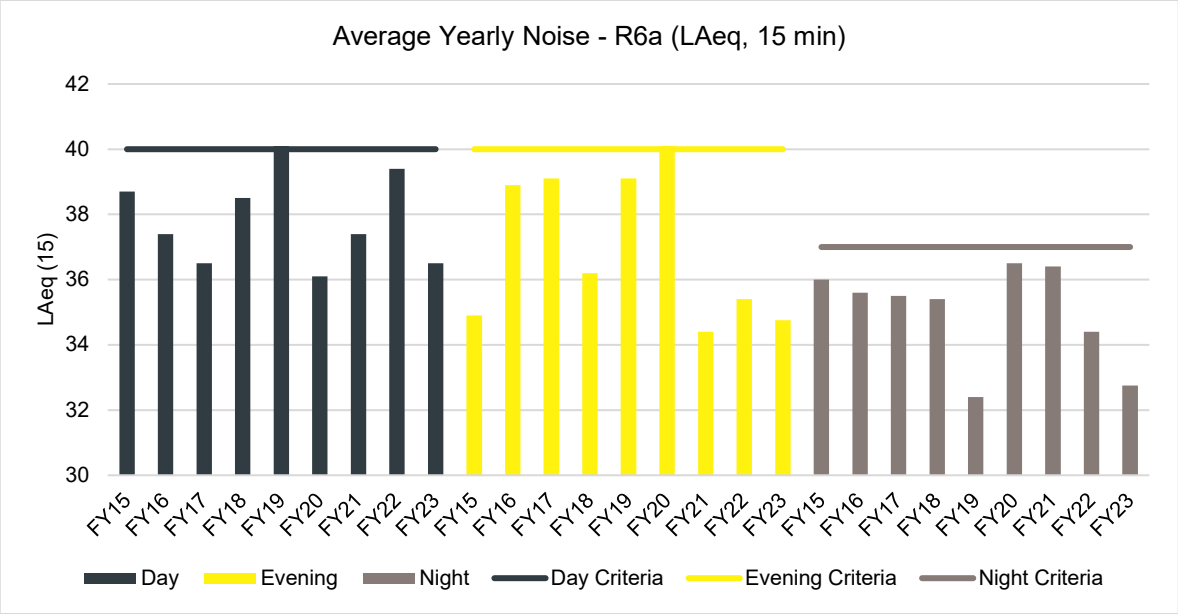


Figure 16: Site R6a Noise Compliance ($LA_{eq,15\ min}$) – FY15 – FY23

Location R39a

R39a is located to the south-east of the KVCLF. There were four exceedances of the $LA_{eq,15\ min}$ noise assessment criteria during the reporting period, with two exceedances on 10 August 2022, one exceedance on 15 February 2023, and one exceedance on 13 May 2023. These exceedances are discussed in Section 11. The $LA_{eq,15\text{-}min}$ representative noise results for R39a are provided in Figure 17 and annual averages are provided in Figure 18.

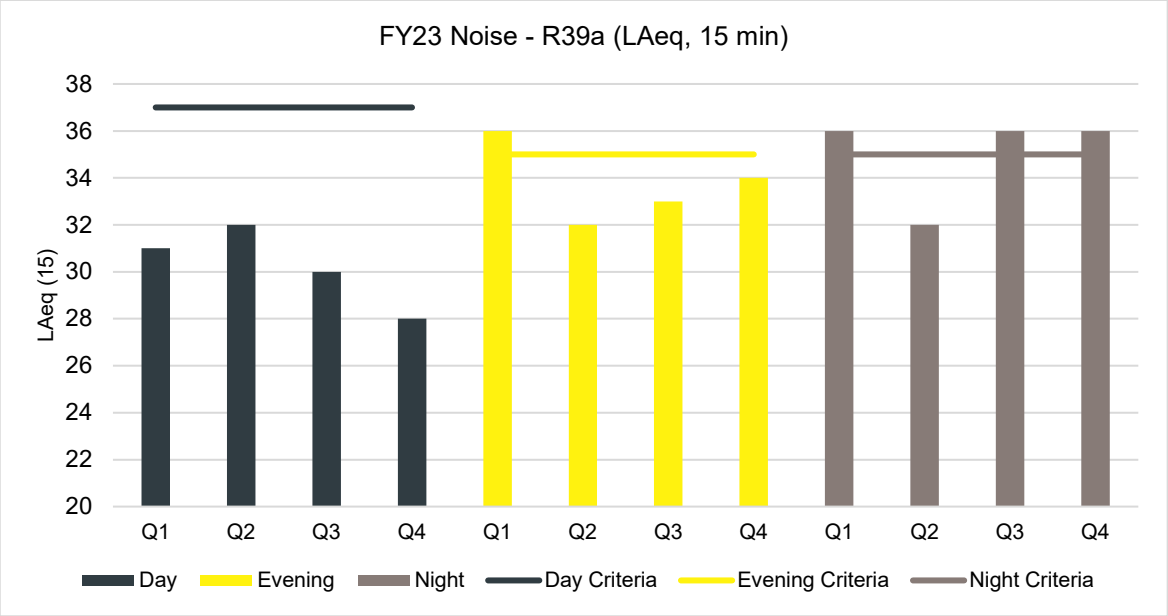


Figure 17: Site R39a Noise Compliance ($LA_{eq,15\ min}$) – FY23

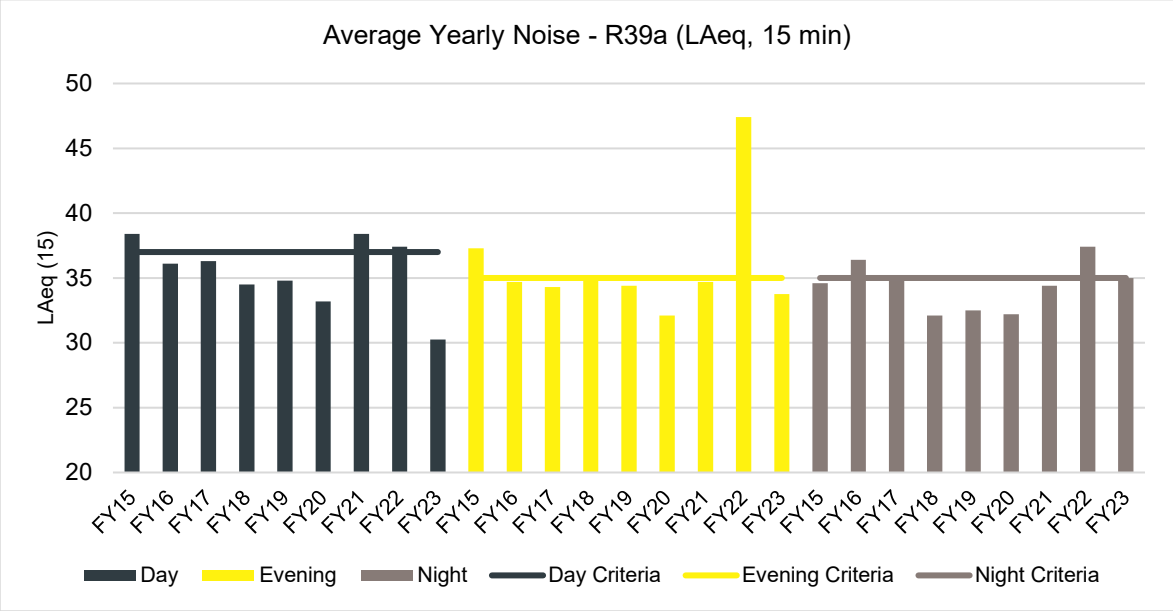


Figure 18: Site R39a Noise Compliance ($LA_{eq,15\ min}$) – FY15 – FY23[12]

[12] Three exceedances of $LAeq_{,15min}$ at location R39a were recorded and reported in FY22, resulting in high average noise level in FY22 compared to other FYs. Detailed assessment is available in the FY22 Annual Review Section 11.

$LA_{1,1\ min}$

There was one exceedance recorded for the $LA_{1,1\ min}$ noise impact assessment criteria at R6a on 10 August 2022. This exceedance is discussed in Section 11. No exceedances or non-compliances were observed at R1 or R39a against $LA_{1,1\ min}$ criteria during the reporting period. $LA_{1,1\ min}$ representative noise results for sites R1, R6a and R39a are shown in Figure 19 and annual averages are provided in Figure 20.

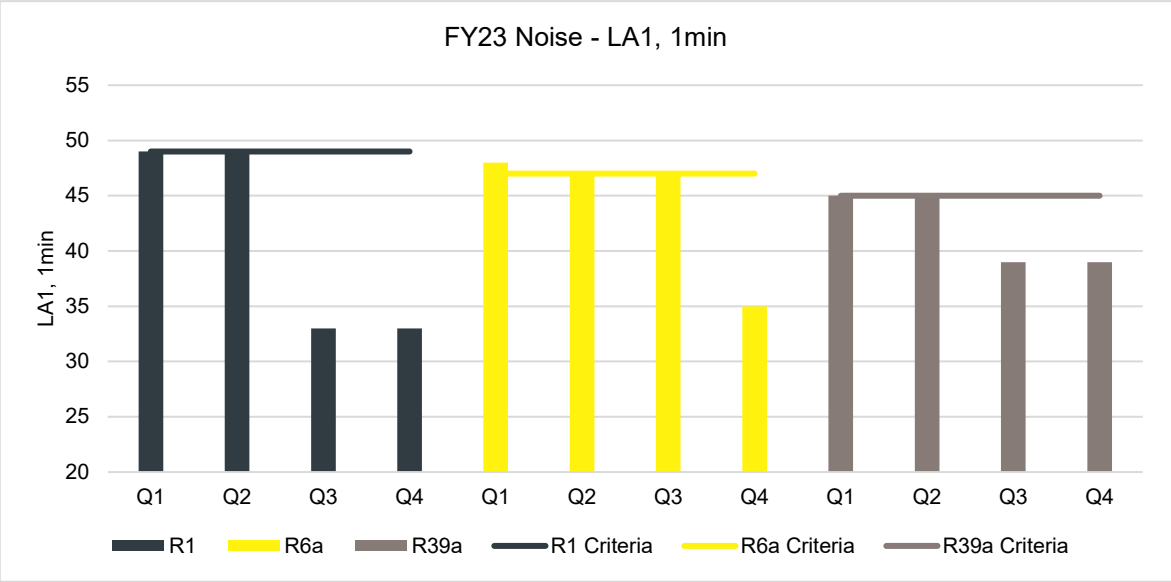


Figure 19: Site Noise Compliance ($LA_{1,1\ min}$) for R1, R6a and R39a - FY23

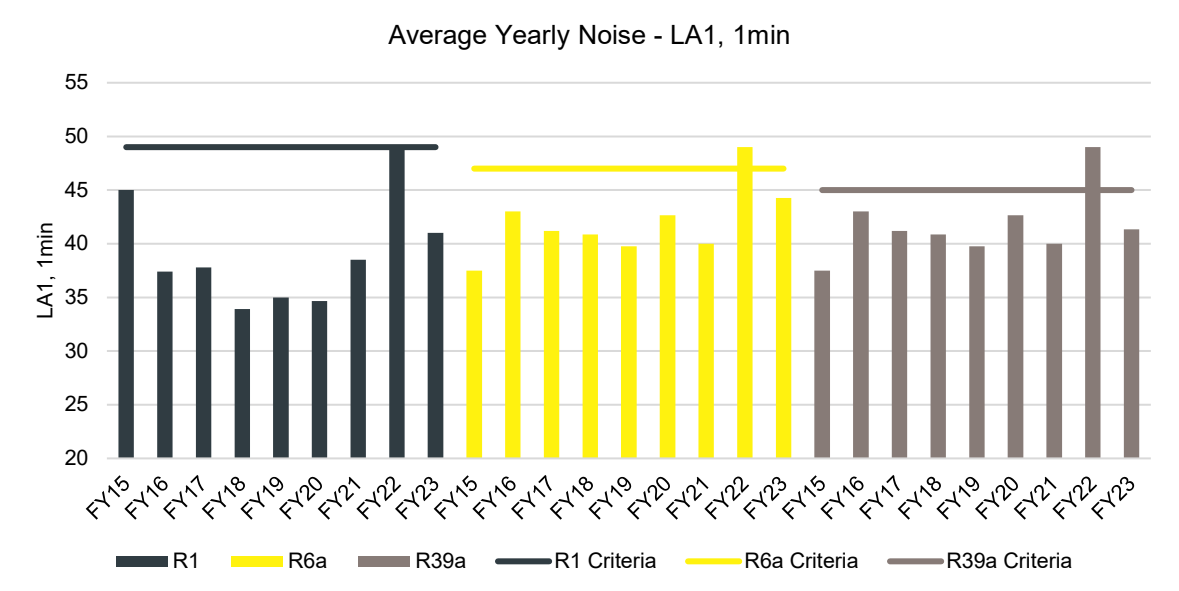


Figure 20: Site Noise Compliance ($LA_{1,1\ min}$) for R1, R6a and R39a FY15 – FY23[13]

[13] During FY22, an exceedance was recorded and reported in July 2021 at R39a, as well as in June 2022 at R6a. No other events were recorded throughout the FY22 reporting period, resulting in the absence of $LA_{1,1min}$ data. Consequently, the average result for FY22 exceeded the mine related assessment criteria.

6.8.1.3 *Rail Haulage*

The rail line is located within 200 m of more than 500 receivers within the Mount Kembla, Cordeaux Heights and Unanderra communities. The track geometry consists of relatively tight curves which can increase the likelihood of squeal events caused by the wheel/track interface and/or brake related issues. Noise issues have been progressively addressed by the Rail Noise Working Group (RNWG) through the below objectives:

- Review noise results and identify rail noise mitigation options.
- Improve targeted track maintenance.
- Develop strategies for positive proactive community engagement.

During previous reporting periods, the RNWG has undertaken numerous rail trials and noise monitoring campaigns to identify noise sources and minimise the rail noise generated in the local area. The work undertaken has been documented in previous Annual Reviews.

Rail noise investigations and actions were ongoing in FY23. They were discussed at the RNWG and some of the actions undertaken included track tamping, grinding and general maintenance to the track.

The RNWG will continue to meet in FY24 to discuss complaints and monitoring results and identify improvement opportunities.

A summary of the rail haulage noise criteria is presented in Table 22. The noise levels from all locomotives in use on the KVRL are required to comply with these noise impact assessment criteria.

Table 22: Rail Haulage Noise Criteria

Operating Conditions	Speed and Location of Measurement	Noise Criteria $LA_{1,1\ min}$ (dBA)
Idle with compressor radiator fans and air conditioning operating at maximum load occurring at idle	Stationary 15 m contour	70 dBA
All other throttle settings under self-load with compressor radiator fans and air conditioning operating	Stationary 15 m contour	87 dBA 95 dBLin
All service conditions	0-50 km/h 15 m from centreline of track	87 dBA 95 dBLin

Annual attended rail haulage noise measurements for the 82-class locomotive (Pacific National 8209) were conducted in September 2022. No exceedances or non-compliances with the noise impact assessment criteria were recorded.

6.8.1.4 *Real-Time Noise Monitoring – Pit Top*

A directional noise monitoring system (DNMS) was installed at Dendrobium Mine in 2021.

The DNMS is comprised of five loggers that provide coverage of the Pit Top entrance, workshop and warehouse areas and Portal Road. The loggers record data on a continuous basis, and assist IMC to identify activities, events and locations that contribute to the site noise level 15-minute average.

Maximum noise level events are displayed for each representative sensitive receiver and are able to be investigated by zooming to a shorter time period. The display at each representative sensitive receiver will include the time of the event.

During the slope stability project, high noise activities such as mulching and rock jack picking were required to be undertaken. The DNMS was observed during these activities to help determine if additional noise mitigation was required. The monitoring did not show a substantial increase in overall site noise levels and no further mitigation measures were required.

An alarm trigger system was proposed to be installed during FY23. A system was designed, however it was later decided not to implement the system due to the decision to withdraw the development application for the DMEP.

6.8.1.5 Noise Investigation – Pit Top

During the reporting period, complaints were received in relation to compressor noise on site. Monitoring was undertaken and it was determined that shielding the compressor would reduce noise levels at nearby residences. Initially, conveyor belting was used around three sides of the compressor on slides to maintain service requirements. Additional monitoring was conducted and it was determined that due to the frequency of the noise, these measures had resulted in limited benefits. Specialised material was then sought and installed, resulting in a 3 dB reduction in overall noise levels, however these measures still allowed a tonal frequency to be emitted. This triggered a site wide noise source audit using frequency scanning tools to identify problematic points on each item of equipment, enabling a refined approach to noise mitigation. Mitigation measures are to be further investigated and, where feasible, implemented over FY24.

6.8.2 Cordeaux Colliery

Noise is not monitored at Cordeaux Colliery as the site is in care and maintenance.

6.8.3 DCPP

As the DCPP is within the BlueScope Steel premises, noise monitoring and management actions are not undertaken by IMC.

6.9 Visual Amenity and Lighting

6.9.1 Dendrobium Mine

Lighting at Dendrobium Mine is managed in accordance with the Lighting Management Plan. The Dendrobium Pit Top site is shielded by established vegetation with minimal stray light leaving the site.

The KVCLF site is shielded within the valley with a majority of lighting is turned off during the night-time period unless work is being carried out on site. No complaints regarding lighting at the KVCLF were received during the reporting period.

A lighting survey was conducted in late FY22 at Dendrobium Pit Top and the KVCLF to verify compliance with Condition 29 of Schedule 4 of the Consent. Results were received in early FY23 and show that lighting at Dendrobium and the KVCLF meet the requirements for Australian Standard *AS 4282:2019 – Control of Obtrusive Effects and Outdoor Lighting*.

6.9.2 Cordeaux Colliery

Cordeaux Colliery is located in bushland with no immediate residential receivers. No complaints regarding lighting were received during the reporting period.

6.9.3 DCPP

As the DCPP is within the BlueScope Steel premises there were no lighting issues identified.

6.10 Aboriginal Heritage

6.10.1 Dendrobium Mine

The Dendrobium Area 3A LW19: Aboriginal Cultural Heritage Assessment sets out the requirements to satisfy the Consent conditions for Aboriginal Heritage management in Dendrobium Area 3A. The LW19 SMP, including the Aboriginal Cultural Heritage Assessment, was approved on 11 March 2021. Details on subsidence impacts to Aboriginal Heritage sites over DA3A are included in Section 6.14.

6.10.2 Cordeaux Colliery

Sites of archaeological and natural significance were identified and assessed as part of previous longwall extraction approval processes. The assessments concluded that no significant effects would occur to the identified features as a result of longwall mining at Cordeaux Colliery.

Archaeological assessments and surveys were conducted in 2003 in relation to surface rehabilitation works planned for the Cordeaux sites. The assessments and surveys identified no items of aboriginal significance that will be disturbed by the potential rehabilitation activities.

6.11 Natural Heritage

6.11.1 Dendrobium Mine

Items of natural heritage are identified in the SMP process. Details regarding natural heritage and European Heritage are reported in Section 6.14 of this report.

6.11.2 Cordeaux Colliery

Natural heritage is not considered a current issue at Cordeaux Colliery as the site is in care and maintenance.

6.12 Spontaneous Combustion

6.12.1 Dendrobium Mine

Spontaneous combustion has not been an issue at Dendrobium Mine. The coal characteristics at Dendrobium Mine are unlikely to lead to spontaneous combustion.

6.12.2 Cordeaux Colliery

There are no coal extraction or handling activities undertaken at Cordeaux Colliery and therefore there is no risk of spontaneous combustion.

6.13 Bushfire

6.13.1 Dendrobium Mine

During the reporting period, bushfire mitigation works were undertaken as required as described in the Bushfire Management Plan.

Asset Protection Zones maintained around surface facilities include:

- 28-38 Harry Graham Drive – Kembla Heights; and
- northern side of Cordeaux Road – Mount Kembla.

Fire Trails maintained around surface facilities include:

- containment line southern side of Dendrobium Mine Pit Top;
- Benjamin Road Fire Trail – Kembla Heights; and
- Stones Road Fire Trail – Kembla Heights.

Bushfire suppression sprays were installed at the Dendrobium Pit Top during FY20 to improve asset protection.

6.13.2 Cordeaux Colliery

Bushfire management at the Cordeaux Pit Top includes the maintenance of a fire break around the site boundary and of the extensive firefighting water pipeline (with booster pump facility) around the site. A tanker filling station for charging the fire line has been installed in proximity to the fire pump.

Clearing of excessive vegetation from within the pit-top boundary fire break zone is completed as required, determined by annual inspections. To reduce the risk of bush fires occurring due to contact with live power lines, line clearing is undertaken to selectively clear vegetation with the potential to encroach on power lines.

Prior to the onset of the summer months each year, IMC undertakes inspections of the property boundaries to determine appropriate bush fire mitigation and hazard reduction works to be undertaken prior to the hotter and drier summer months of the bushfire season. Sections of trees overhanging the Cordeaux Colliery site perimeter were identified during the previous reporting period and were trimmed during FY23. Trimming of branches around the telecommunications infrastructure (GRN, Telstra and Optus) was undertaken during FY23.

The Rural Fire Service radio repeater is located in the personnel and materials tower at the Cordeaux Pit Top site.

6.14 Mine Subsidence

6.14.1 Dendrobium Mine

Mining using the longwall method results in subsidence (lowering) of the land surface. Dendrobium Mine has an approved SMP for each mining area (1, 2, 3A, 3B and 3C) which describes the ongoing program of subsidence monitoring and management. These SMPs were developed in accordance with Condition 7 of Schedule 3 of the Consent.

The management of subsidence is undertaken in consultation with the Dendrobium Community Consultative Committee (DCCC), WaterNSW, Dams Safety NSW, NSW Resources Regulator, Mining, Exploration and Geoscience (MEG) and DPE, including the Biodiversity, Conservation and Science (BCS) Division. The implementation of the plan relates to monitoring and management of natural features, including:

- Surface water and groundwater.
- Landscapes, including steep slopes, cliffs, land suitability and areas prone to erosion or flooding.
- Terrestrial and aquatic ecology.
- Aboriginal and European Heritage.
- Infrastructure (built features).

LW19 extraction commenced on 20 June 2022 and was completed on 29 March 2023. LW21 extraction commenced 25 April 2023 and as of 30 June 2023 had extracted 645 m. Mine subsidence monitoring and reporting was carried out in accordance with the approved SMP for Area 3A, Area 3C and supporting management plans.

The monitoring program for LW19 and LW21 is defined by the Area 3A and 3C SMPs and supporting management plans which include:

- Dendrobium Area 3A and 3C Asset Protection Plan.
- Dendrobium Area 3A and 3C Swamp Impact, Monitoring, Management and Contingency Plans (SIMMCPs).
- Dendrobium Area 3A and 3C Watercourse Impact, Monitoring, Management and Contingency Plans (WIMMCPs).
- Dendrobium Area 3A and 3C Aboriginal Cultural Heritage Management Plan.
- Area 3A and 3C SMPs.
- Waterfall 54 Management Plan.
- Sandy Creek Waterfall Management Plan.

A summary of monitoring commitments for this reporting period are provided in Appendix 7. Additional information is provided in the LW19 End of Panel (EoP) report, Area 3A SMP and supporting management plans, which can be accessed from the IMC website at link.

The LW19 EoP was published in early FY24.

6.14.1.1 Subsidence Movements

Subsidence movements resulting from the extraction of LW19 were measured at the following survey points and lines:

- Wongawilli Creek Closure Lines.
- Sandy Creek Waterfall Closure Lines.
- Dendrobium Area 3B and Avon Dam 3D monitoring points.
- 330kV transmission line monitoring points.
- Tributary Cross Lines.
- Swamp Cross Lines.
- Airborne Laser Scanner (ALS) of the area.

Subsidence parameters measured during the extraction and at the completion of LW19 were generally similar to or less than what was predicted within the Area 3A SMP (MSEC, 2023). For further detail on the subsidence movements measured for LW19, refer to the LW19 EoP Report. This report can be accessed on the IMC website at link.

6.14.1.2 Landscape Features

The IMCEFT conducted detailed monitoring and inspections on landscape features including swamps, watercourses, rock outcrops and the general area within Dendrobium Area 3A and 3C. This monitoring was conducted in accordance with the Dendrobium Area 3A SMP, WIMMCP (dated February 2021), the SIMMCP (versions dated February 2021 and addendum dated June 2021) and the Dendrobium Area 3C SMP, WIMMCP (dated August 2020) and the SIMMCP (dated August 2020).

Monitoring of water levels, water flow, water quality and key landscape features was also conducted by specialist consultants.

Eighty-eight new surface impacts, and updates to existing impacts, were identified by the IMCEFT during the FY23 reporting period. Impacts were observed within watercourses and landscape features such as access tracks, cliff lines and steep slopes. A summary of observed impacts over the reporting period is provided in Appendix 7.

For more information on landscape impacts, refer to the LW18 and LW19 EoP Report on the IMC website at link.

6.14.1.3 Surface Water

HGEO (hydrogeologist consultants) completed an assessment of pre-, during and post-mining data after the completion of LW19 (HGEO, 2023). An additional report will be completed for LW21 in FY24.

No new water quality TARPs were triggered in the review period; however, water quality TARPs remain triggered at Lake Avon tributary site LA4_S1 for EC, pH and dissolved oxygen (DO) as a result of impacts related to Area 3B mining.

At many stream monitoring sites, including reference sites, water EC has decreased since 2020 due to higher-than-average rainfall and a significant increase in runoff. Similarly, DO has trended higher due to higher flows and stream turbulence.

Over the last three years, new or recurrent iron staining has been noted on Wongawilli Creek, WC21, LA5, WC14, WC15 and SC10C, extending down to Sandy Creek. These increases in iron staining are partly related to increasing groundwater levels due to high rainfall. It is expected that the occurrence of iron seeps will decline as drier conditions return.

The effects of mining subsidence on surface water hydrology were assessed. TARP triggers for surface water hydrology were identified at Donalds Castle Creek (DCS2, DCU), DC13 (DC13S1), WC21 (WC21S1), WC15 (WC15S1), LA4 (LA4S1), LA3 (LA3S1), LA2 (LA2S1) and SC10 (SC10S1) and Sandy Creek (SCL2/GS2122205). Water flow performance measures were met for LW19.

For more information on surface water, refer to the LW19 EoP Report on the IMC website at link.

6.14.1.4 Wongawilli Creek

During the extraction of LW19, a gas release was observed on Pool 50 (DA3A_LW19_029, dated 18/01/2023). The observation triggered a Level 1 TARP. The gas release wasn't active on the latest inspection in the monitoring period.

6.14.1.5 Upland Swamps – Shallow Groundwater and Soil Moisture

LW19 mined beneath and/or passed within 400 m of five swamps: Swamps 12, 15a, 15b, 148 and 34 (HGEO, 2023).

A shallow groundwater TARP trigger was identified in Swamp 15a following the analysis of shallow groundwater data. Following specialist analysis, triggers were identified at Swamps 12, 15b and 148.

Soil moisture TARP triggers were identified in Swamps 15a, 15b and 148 following the analysis of soil moisture data. Following specialist analysis, a trigger was also identified at Swamp 12.

Additionally, although outside of the active mining area, Swamp 35b in Dendrobium Area 3B recorded a Level 3 Shallow Groundwater Trigger during the reporting period.

For more information on shallow groundwater and soil moisture, refer to the LW19 EoP Report on the IMC website at link.

6.14.1.6 Aquatic Ecology

The aquatic ecology monitoring program is based on a Before, After, Control, Impact (BACI) design that provides a measure of variability at Impact and Control sites before, during and after extraction. This enables changes in the key indicators associated with mining-related impacts to be distinguished from natural variability.

Monitoring is undertaken in Wongawilli Creek and Sandy Creek tributaries; WC15, WC13, WC14 and WC17, SC10, SC10A, SC10B and SC10C and comparable Control sites.

No TARPs were triggered with respect to Wongawilli Creek during LW19 as there has not been a loss in aquatic habitat during the latest survey or previously for longer than one year.

Only relatively minor impacts were observed in watercourses following commencement of extraction of LW19. These were iron staining in WC14, WC15, and in bushland adjacent to Wongawilli Creek, a gas release in WC Pool 50, and an extension of a previously identified rock fracture in WC14. No changes in water quality in watercourses were identified (HGEO 2023). Localised iron staining in WC14 and WC15 would not be associated with significant impacts to aquatic habitat and biota given these ephemeral / intermittent tributaries provide aquatic habitat of limited value and represent a very small component of the total aquatic habitat in the Dendrobium Mine area.

Although flow diversions may occur due to the fracture in WC14, any reduction in availability and connectivity of aquatic habitat and associated impacts to aquatic biota in the naturally ephemeral / intermittent WC14 would also be minor. In the absence of changes in water quality in Wongawilli Creek associated with the gas release in Pool 50, and any change in aquatic habitat noted during the recent aquatic ecology surveys in Wongawilli Creek in April and June 2023, any associated impacts to aquatic ecology are expected to be negligible.

For more information on aquatic ecology, refer to the LW19 EoP Report on the IMC website at link.

6.14.1.7 Terrestrial Ecology and Swamps

An annual terrestrial ecology report was prepared for 2022 (Niche, 2023) and forms the basis of assessment for the LW19 EoP Report.

The 2022 iteration of the monitoring program largely identified a continuation of the trends identified in recent monitoring years (Niche 2021, Niche 2022a). Trends across swamps indicate declining Total Species Richness (TSR) post-mining for the majority of Impact swamps and Control swamps. Compositional changes show trends of the loss of flora species, generally (but not entirely) those with a preference for ‘wet environments’. While it is reasonable to expect natural species turnover to occur at a swamp, the overall patterns of change are suggestive of either declining swamp condition (die back or die off of swamp dependent species), or vegetation community transition. Many trending declines in TSR and species detection appear to have commenced either pre- or at some years post-mining. In addition to this, the declining TSR levels and swamp extents recorded at the Control swamps are indicative of other factors that may be contributing to declining swamp conditions, at least in terms of the metrics applied in the terrestrial ecology monitoring program.

The assessment of performance measures suggest that impacts are being detected at the Impact monitoring swamps utilised in the program, although there is variation across the varying TARPs and TARP levels that have been triggered to date. All of the ten Impact monitoring swamps are considered at risk of potential impacts based upon their proximity to mining activity. In 2022, eight of the ten Impact monitoring swamps recorded at least one TARP trigger.

The Control creeks for Littlejohn’s Tree Frog (LJTF) monitoring in general were found to have a higher quality of breeding habitat for LJTF and were presumably chosen at the beginning of the program due to the known population of breeding adult records of LJTF and habitats. Analysis to date has identified that where pre-mining frog detection data is available, detection was statistically lower at Impact transects than the Control transects, indicating this disparity in Control and Impact transect pre-dates mining effects. Significantly above average rainfall conditions in 2022 ameliorated some of the observed impacts previously recorded (e.g. flocculant and reduced pool levels). Despite this, the findings of the 2022 iteration of the monitoring program are largely consistent with previous years, with several Impact monitoring transects showing reduced habitat conditions, or reduced LJTF detection in the post-mining period. In 2022, TARP levels were triggered at seven of the fourteen Impact transects monitored as part of the program.

For more information on terrestrial ecology, refer to the LW19 EoP Report on the IMC website at link.

6.14.1.8 Cultural Heritage

Following the extraction of LW19, an inspection of Aboriginal Heritage sites within the LW19 study area (as defined in Niche 2022) was conducted from 26 to 28 April 2023. Two out of the eight Aboriginal Heritage sites within the LW19 study area had observable impacts from subsidence related movements due to the extraction of LW19.

Sandy Creek Road 21 (AHIMS ID#52-5-0273) has horizontal fracturing along the inner lower lip and lower back wall of the shelter measuring 10 m in length, stretching from the southern end of the shelter, and terminating 30 cm below Art Panel 2. No direct impacts to the art were observed.

DM15 (AHIMS ID#52-2-3639) has newly recorded vertical fracturing which partially runs through Art Panel 1 Motif 1. An area of fresh spalling and exfoliation was identified approximately one metre above Art Panel 1 Motif 1, along with minor new block fall from the eastern lip of the shelter overhang (associated with the upper termination of the vertical fracture). This minor block fall has not impacted the art or the structural integrity of the shelter.

In accordance with the Cultural Heritage Management Plan for LW19, these changes were reported to Registered Aboriginal Parties (RAPs), HeritageNSW and DPE, and a site management plan to assess the impact to the sites and discuss any measures that could be taken to mitigate further impact to the sites is being co-developed with the RAPs. Site inspections were organised with the RAPs on 26-28 April 2023 and a geotechnical assessment of the sites was completed on 5 June 2023.

For more information on cultural heritage, refer to the LW19 EoP Report on the IMC website at link.

6.14.1.9 Summary of Impacts

The observed impacts were generally less than, similar to or consistent with those predicted in the assessments undertaken prior to mining. A summary of the observed impacts and triggers during the reporting period is provided in Appendix 7. For further detail on impacts associated with LW19, refer to the LW19 EoP Report. The locations of the surface impacts identified in the reporting period are shown in Plan 15.

6.14.2 Cordeaux

Due to the time elapsed since the last longwall panels were extracted at Cordeaux Colliery, the continued effects of subsidence will be negligible to nil and pose no threat to the safety of infrastructure or the public.

6.15 Hydrocarbon Contamination

6.15.1 Dendrobium Mine

Hydrocarbon bunded areas utilised during the reporting period were located:

- along the Pit Top Portal Road;
- at the rear of the workshop; and
- at the diesel refuelling/solcenic storage area.

Bunds are in place at all hydrocarbon facilities. Bunded areas are checked weekly and are pumped out when required to maintain sufficient capacity. In addition to the permanent bunded areas, portable bunds are used for transient storage or transportation of oils and fuels around the site. Spill kits and/or bins containing absorbent material are located around the site in areas where there is a

higher potential for spillage. Surface personnel are made aware of the locations of these spill kits and absorbent material bins in their work area. The contents of the spill kits and the oil absorbent material bins are checked on a regular basis.

In this reporting period, a second self-bunded hydrocarbon storage container (as shown in Plate 8) was installed along the Portal Road.

Plate 8: Hydrocarbon Storage Container

There were no externally reportable incidents of hydrocarbon contamination in the reporting period associated with Dendrobium Mine.

Following the identification of a bund modification at Appin East during FY22, a bund audit was undertaken throughout the IMC operations in March 2022. A follow up audit was conducted in March 2023, with actions closed out where improvements had been implemented.

6.15.2 Cordeaux Colliery and Corrimal No. 3 Ventilation Shaft

IMC implemented and actioned a RAP following a transformer oil spill as a result of vandalism at the Corrimal No 3 Ventilation Shaft during a previous reporting period (refer to Section 6.4.3).

During FY22, a bund audit was undertaken throughout the IMC operations, including Cordeaux Colliery Pit Top, to verify the compliance of chemical and hydrocarbon storage facilities. A number of improvement opportunities were identified, leading to corrective actions being progressively implemented to rectify identified issues. Most actions were closed out during FY23, with one remaining, involving investigation of drainage from the bund of an electrical transformer.

6.16 Hazardous Material Management

6.16.1 Dendrobium Mine

6.16.1.1 Explosives

A Licence to Store Explosives is in place for the Dendrobium premises. Limited quantities of explosives were stored at Dendrobium over the reporting period.

6.16.1.2 Radiation Gauges

One radiation gauge was located at the KVCLF site in FY23. The gauge was removed on 21 September 2022 by a licenced contractor. The radiation licence was not renewed.

6.16.1.3 Dangerous Goods

The dangerous goods kept at Dendrobium Mine include compressed gases, flammable and combustible liquids and corrosive substances. Volumes stored are below the manifest quantities to require a Dangerous Goods Licence to be issued by SafeWork NSW.

A Site Emergency Information Container is installed adjacent to the front gate in accordance with legislative requirements. This information box includes the site manifest along with Safety Data Sheets (SDSs) for each of the dangerous goods kept on site.

6.16.1.4 Combustible Liquids

Dendrobium Pit Top has two bulk combustible liquid storage tanks, one for diesel and one for solcenic oil (~16100 L). These materials are delivered to site by tanker. These are stored generally in accordance with the requirements of *AS 1940-2017: The storage and handling of flammable and combustible liquids*.

6.16.1.5 Other Substances

IMC assesses new substances before their use on site by completing a Substance Evaluation Form and a risk assessment (based on the hazardous nature of the substance). SDSs and substance evaluations are available electronically from ChemAlert. Regular inspections of the storage sites are undertaken to check compliance with relevant standards.

6.16.2 Cordeaux Colliery

Cordeaux Colliery has an underground diesel tank (42,000 L holding capacity) and minor volumes of gas cylinders, and transient stores of oils/lubricants.

The diesel fuel is brought to site by fuel tankers. A bulk diesel fuel system has been installed utilising underground tank storage with locked bowser delivery. The majority of fuel used is for exploration equipment and field vehicles. Cordeaux Colliery has a Fuel System Operations Plan (FSOP) for the underground diesel tank. Tank integrity testing and an analysis of the surrounding groundwater has been completed as required. The results confirm the absence of any leaks/contamination. A digital reconciliation monitoring system is installed on the diesel tank to better account for fuel-in and fuel-out of the system to assist in monitoring any fuel loss that could be attributed to tank leakage. This system was planned to be upgraded in FY23 however the upgrade has been postponed to FY24.

During the reporting period a bund was installed around the diesel filling point (Plate 9). This serves to contain any spills while filling vehicles and tanks and direct them to the large undercover bund directly adjacent to the filling point. From here contaminated liquid can be removed from the dedicated sump.

Plate 9: Newly constructed bunding of diesel filling point, Cordeaux Colliery

6.16.3 DCPP

6.16.3.1 Hazardous materials

Hazardous materials management at the DCPP is consistent with the standards practiced at Dendrobium Mine. SDSs and substance evaluations are available electronically from ChemAlert. Waste oil is collected on site and transported to a recovery waste management service.

6.16.3.2 Radiation Gauges

There are ten gauges located in the DCPP that contain radiation regulated materials. The radiation regulated materials are licenced and maintained as per the legal requirements. All radiation regulated materials are housed in appropriate containers and are inspected and tested in accordance with legislative requirements.

6.17 Methane Ventilation

6.17.1 Dendrobium Mine

The underground mine workings are ventilated by drawing fresh air into the mine (intake air) via the Dendrobium Mine Portal Tunnel, KVT, and Ventilation Shafts 1 and 2. The ventilation air drawn through the mine is extracted via the No. 3 Shaft Ventilation Fans.

Three mine ventilation fans are installed at the No.3 Shaft site with nominally two fans operating at any time. Mine ventilation air was drawn through the mine during the reporting period at an average rate of 248 m^3/s with the discharge air (mine vent air) having an average concentration of methane (CH_4) of 0.11% and an average concentration of carbon dioxide (CO_2) of 0.21%.

A summary of Scope 1 and Scope 2 greenhouse gas (GHG) emissions during the reporting period for Dendrobium Mine and Cordeaux Colliery is provided in Table 23 and Figure 21. GHG emissions between FY15 and FY23 are shown in Figure 22. Cordeaux Colliery emissions are approximately 1.43% of the total emissions in FY23. Fluctuations in GHG emissions over FY23 are associated with increased or decreased production.

Table 23: GHG Emissions – Dendrobium Mine and Cordeaux Colliery – FY23

Pollutant	Units	FY22 Total	FY23 Total
Scope 1 emissions	kt CO_2-e	236.66	257.97
Scope 2 emissions	kt CO_2-e	63.46	72.34
Total	kt CO_2-e	300.12	330.30

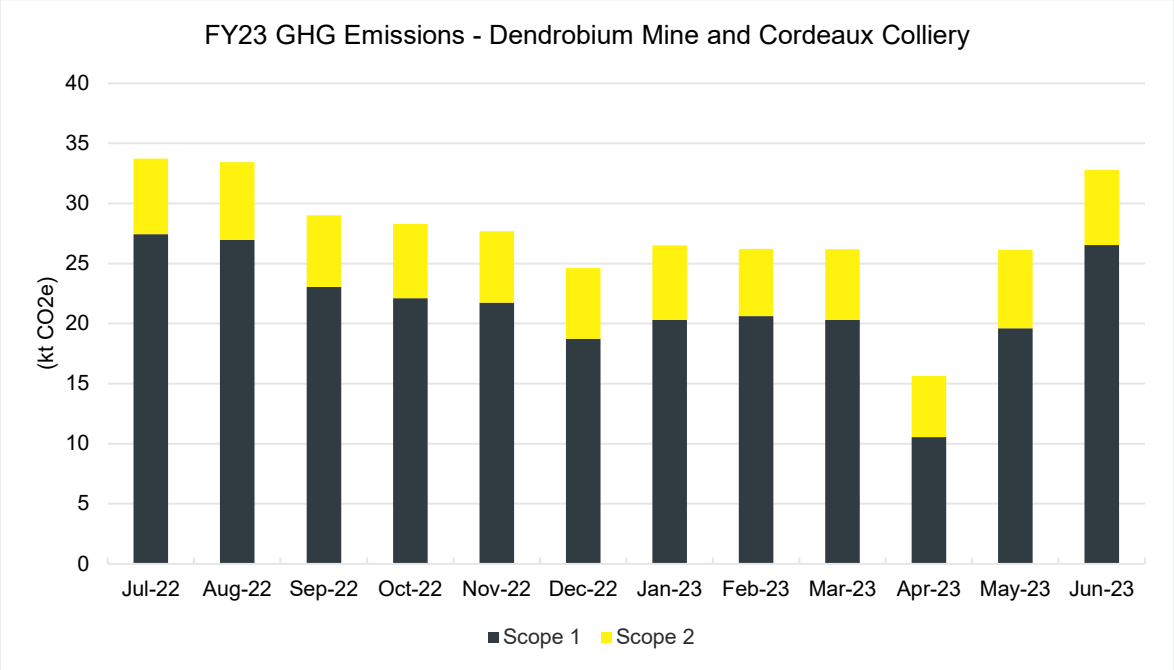


Figure 21: Dendrobium Mine and Cordeaux Colliery GHG emissions for FY23

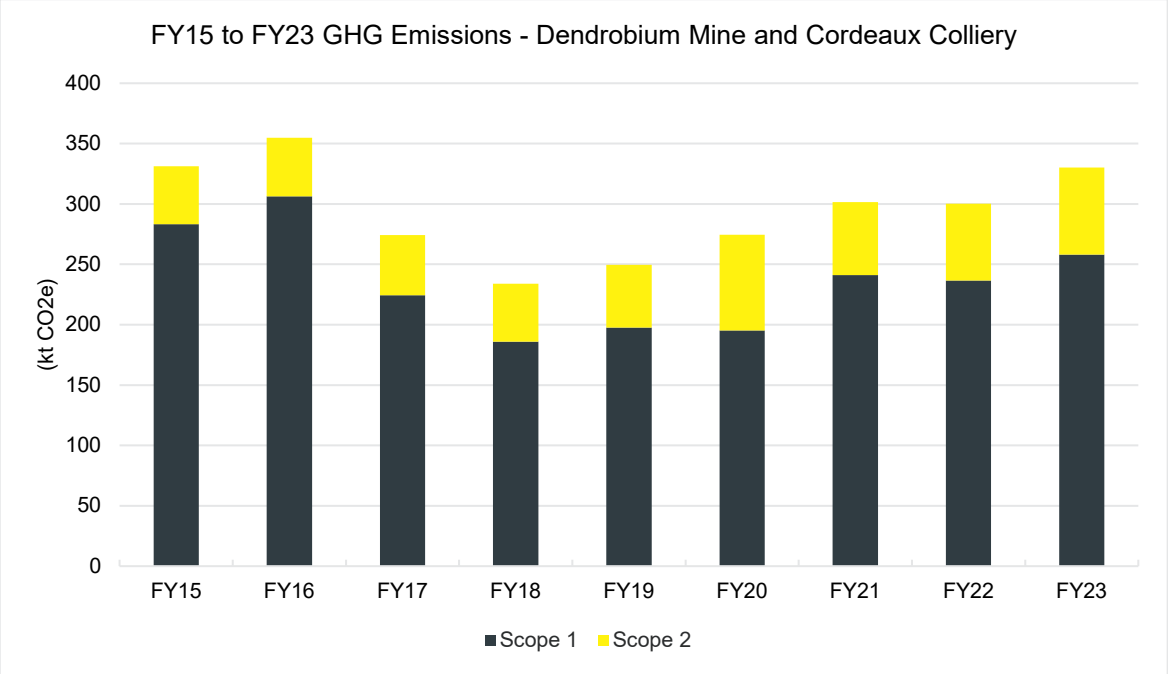


Figure 22: Dendrobium Mine and Cordeaux Colliery GHG emissions for FY15 to FY23

The current methodology for the calculation of GHG emissions and reporting at IMC is consistent with approved guidelines from the Clean Energy Regulator for Continuous Emissions Monitoring (CEM). The potential to convert from the current methodology to Periodic Emissions Monitoring (PEM) and whether such shift in methodology would result in more accurate and consistent monitoring is currently being investigated. Following conclusion of the investigations, any material changes to reported GHG emissions at IMC will be updated accordingly.

6.17.2 Decarbonisation Strategies

South32 has established greenhouse gas emission targets. Since setting these, IMC has supported achievement of the short-term target of maintaining Scope 1 emissions at FY15 levels through to the end of FY21. IMC is now working to progressively reduce emissions, supporting South32's Group-wide medium-term target (to halve operational GHG emissions by 2035 compared to the FY21 baseline) and long-term goal (net zero operational and Scope 3 GHG emissions by 2050), noting South32's Group-wide decarbonisation strategy to meet the medium-term target and long-term goal has been developed at a whole-of portfolio and guidance level. The goal of net zero operational GHG emissions by 2050 aligns South32 with the Paris Agreement, as well as the NSW aspirational target for 2050.

During FY19, IMC completed a concept level study that proposed a phased roadmap of projects with the aim of delivering the goal of net zero by 2050 through a combination of increased gas capture, treatment of ventilation air methane (VAM), and offsetting. During FY20, work towards delivering key projects associated with the roadmap began. In FY23, this work has focussed primarily on increasing the proportion of fugitive emissions generated by longwall production at Appin Mine that are captured by the gas drainage system and reticulated to abatement facilities (either power generation or flaring). This is measured by the post drainage capture efficiency (PDCE) metric. Dendrobium Mine has relatively low methane emissions in comparison to Appin Mine, which is why methane abatement at IMC is focussed on Appin Mine emissions.

For further information on the measures and projects being implemented at Appin Mine, refer to the Appin Mine Annual Review available on the IMC website at link.

6.17.3 Cordeaux Colliery

Cordeaux Colliery had no methane drainage extraction plant to support its underground gas management activities. Following cessation of mining (the site is in care and maintenance), the emissions to the atmosphere via the main mine ventilation fans significantly decreased. The mine ventilation fans were shut down and the shafts temporarily sealed in December 2003. Underground fugitive emissions through Cordeaux Colliery are based on estimation as per the National Greenhouse and Energy Reporting (Measurement) Determination 2008 Section 3 Method 1.

6.18 Public Safety

6.18.1 Public Safety around Operational Areas

Public and workplace safety is a major consideration for IMC. Safety risks and control mechanisms associated with the Dendrobium and Cordeaux operations are provided in Table 24.

Table 24: Safety Risks and Control Mechanisms

Potential Safety Risk	Control Mechanism
Safety on site	Dendrobium The Dendrobium facilities and the Pit Top site has 24-hour surveillance of the front car park and entry areas. Fencing of the sediment ponds at both the Pit Top and KVCLF sites minimises the potential for injury to the public. Site personnel are required to undertake an induction which outlines the accountabilities and responsibilities in regard to safety whilst working on site, which enables them to gain access to site via the swipe card system. Prior to visitors entering the Pit Top/KVCLF area they are required to contact the Illawarra Access Controller (IAC) at the turnstile/gate or their site contact to gain access to the site. From this point the visitor is accompanied by their site contact. On-site additional safety information is shared via: • safety training and awareness sessions for all personnel working on site which allow for two-way communication between management and the workforce; • pre-shift safety discussions and Toolbox Talks; • posters and TV screens presenting safety information located around the site; • periodic business updates including email and newsletter material distributed to workers; and • various meeting forums that include safety as an agenda item in addition to a dedicated site HSE Committee meeting. Risk assessments are required to be undertaken prior to undertaking work. This includes the use of Take 2s. Safety procedures are also in place and available.

	Cordeaux The Cordeaux Colliery Pit Top area is enclosed by a chain wire security fence around the perimeter of the site. The main site access gates are locked at all times that IMC personnel are not in attendance. Visitors must contact the IAC or their site contact at the turnstile to gain access to the site. From this point the visitor is accompanied by their site contact. Access to the site is via boom gates and turnstiles requiring a site access pass. At risk infrastructure on site is maintained to reduce the risk to the general public. The site is currently under care and maintenance. When closure of the site occurs (at a time not yet determined), the site will be left in a permanently safe condition to the satisfaction of relevant authorities. Remote sites (including Corrimal #3 shaft) have remained fenced and locked during this reporting period. A monthly inspection is completed at Corrimal #3 shaft which assesses site security.
Road Safety	Dendrobium A Drivers' Code of Conduct is in place at Dendrobium to specify appropriate driver behaviour for all those who drive through the village to the mine including employees, contractors and truck transports, as required by the Consent and Traffic Management Plan. The Code of Conduct is communicated to personnel during the site induction and copies are periodically distributed to major suppliers and transport companies. Compliance with the Code of Conduct is enforced. Cordeaux Lane alignment and roadway markings are present at the Cordeaux Colliery entrance on Picton Road to provide for safer traffic movements when entering and exiting the site.
Rail Safety	Dendrobium The rail facilities are fenced (where possible), with the main sites patrolled on a regular basis by a contracted security firm. Signage and security cameras are in place. Site inspections are undertaken to maintain safety systems. Community newsletters and letter box drops are used to communicate relevant safety information to the public.

6.18.2 Public Safety around mining areas

The current Dendrobium longwall mining activities are occurring within WaterNSW land. IMC has developed procedures for working around and accessing potentially unstable ground. The controls are outlined in the document 'Working Around Rock Falls, Cliff Lines and Unstable Areas' (ICAP0145). The controls currently in place are listed in Table 25.

Table 25: Safety Risks and Control Mechanisms – WaterNSW land	
Potential Safety Risk	**Control Mechanism**
Rock falls	There is restricted access into the Special Area. Signs are installed around potentially unstable areas that may be impacted by mining. Spatial data is installed on field tablets highlighting areas to avoid. Set distances are in place to remain back from hazardous features. New hazards or movements identified around unstable areas must be reported to the supervisor and discussed with the team. Barricading/ safety tape are placed as required. Unstable areas are not to be accessed during active subsidence. IMC employees and contractors working around potentially unstable areas are required to complete the Site Induction, Emergency Response Training and 4WD training, maintain active communications and utilise the sign-in and sign-out process.

6.19 Waste Management

6.19.1 *Dendrobium Mine*

6.19.1.1 General Waste

General waste bins are transported from Dendrobium Pit Top to Cleanaway's depot at Unanderra. The waste is then tipped onto a sorting pad and is directed into its correct waste stream for recycling or disposal. Waste specific skips are in place for scrap steel, timber, oil drums and particulate filters. Dendrobium Mine's main solid waste streams, the volume of waste recycled and disposed of, and the recycling efficiency for Dendrobium Pit Top is provided in Table 26 and Table 27 respectively.

Table 26: Waste Streams and Total Volumes					
Waste Stream	**Treatment / Disposal**	**Volume (tonnes)**			
		FY20	FY21	FY22	FY23
Timber	Recycled off site	141.2	60.7	22.0	81.5
Cardboard and paper	Recycled off site	5.3	5.7	5.8	9.8
Steel and scrap metal	Recycled off site	243.3	195.4	235.9	198.7
Commingle	Recycled off site	5.0	3.8	2.9	2.5
General waste (ResourceCo)	Recycled off site	689.4	594.3	781.0	666.5
Particulate (diesel) filters	Off-site treatment and disposal in landfill	191	358.6	374.1	186.8
General waste	Landfill	73.59	101.5	99.9	98.6
Electronic waste	Recycled off site	0.026[14]	0.2[15]	1.9[16]	2.3[17]

Table 27: Recycling Efficiency for Reporting Period[18]		
Total Recycled (tonnes)	**Total Removed from Site (tonnes)**	**% Recycled**
959.0	1244.4	77%

6.19.1.2 Waste Reduction and Recycling

In FY19, IMC and its main waste contractor began redirecting wastes from landfill to reduce the waste footprint of IMC. A Cleanaway and ResourceCo joint venture Resource Recovery Facility, located in Wetherill Park, processes dry non-recyclable waste. Combustible materials are turned into Processed Engineered Fuel (PEF), diverting approximately 94% of waste material from landfill. The PEFs, Low Calorific Value (CV) and High CV, comply with the requirement of the Clean Energy Regulator under the Emissions Reduction Fund.

Waste generated on site in FY23 was 1244.4 tonnes. 951.9 tonnes of the total waste were classified as general waste, of which 666.5 tonnes were diverted for recycling at ResourceCo and the remaining 285.4 tonnes was disposed as landfill. Redirecting this general waste to the recycling

[14] Recorded e-waste disposed at the Regional Operations Centre (ROC) via the University of Wollongong (UoW) e-waste bin. E-waste is recycled by an external recycling vendor.
[15] 68 kg was disposed at the Regional Operations Centre (ROC) via the University of Wollongong (UoW) e-waste bin. 136 kg was disposed via Certified Environmental Disposal services provided by DXC.
[16] Volume across IMC. All electronic waste is processed (recycled or disposed of) by ACT Logistics.
[17] Volume across IMC. All electronic waste is processed (recycled or disposed of) by ACT Logistics. Excluded from waste volume calculations.
[18] Excluding electronic waste.

facility is an alternative end-of-life treatment and final disposal of products opportunity. Approximately 77% of total waste was recycled off-site during the reporting period. Waste to landfill has reduced largely due to the reduced use of particulate filters (see Figure 23).

During the reporting period, testing of particulate filters indicated that they were now suitable for disposal as general waste. Filters on site are still segregated and disposal is undertaken as general waste with an increase in testing frequency. If the additional testing indicates that the filters are no longer general waste, disposal can then be easily reverted to the previous disposal methodology.

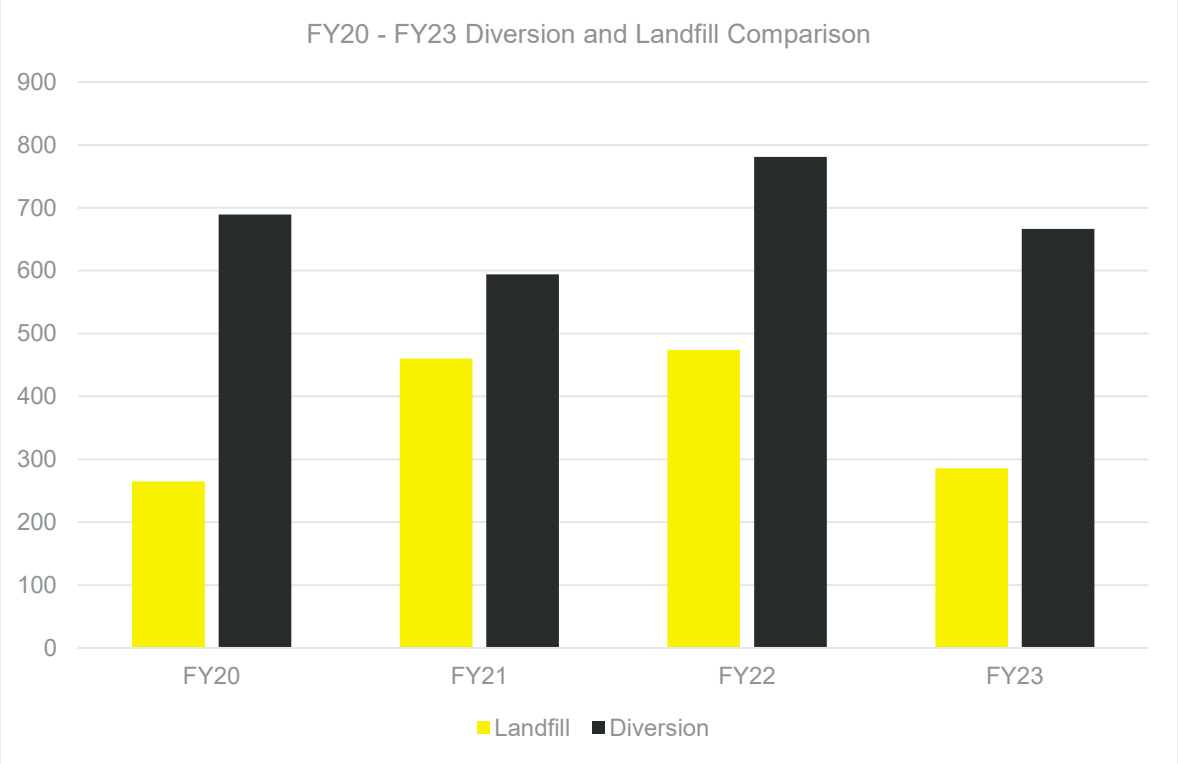


Figure 23: Recycled and landfill waste streams for FY20 - FY23

6.19.1.3 Oil and Grease Containment and Disposal

Oil and grease produced on-site is transported from the Pit Top for processing by a licenced contractor off-site. Oil sumps and traps are in place and are periodically inspected by site personnel and emptied as required by a licenced contractor. Hydraulic oil is separated from oily water volumes via a licenced contractor. Oil and grease volumes removed from site during the reporting period are included in Table 28.

Table 28: Oil and Grease Volumes – Dendrobium Mine

Waste Stream	Volume (tonnes)	
	FY22	FY23
Oil	41	40
Oily water/Sludge	1.6	8.2
Solcenic Oil	72.1	70.8

6.19.1.4 Coal Wash Management

Coal wash is a by-product of processing RoM coal. During FY23, a total of 1.08 Mt of coal wash was emplaced at the Appin Mine CWEA. This was comprised of 0.62 Mt of coal wash from the WCCPP, 0.20 Mt from the DCPP, and 0.25 Mt of stockpiled DCPP material from previous years.

The current approved design of Stage 3 CWEA provides 29.3 Mt of coal wash emplacement with an expected emplacement life of approximately ten years as of June 2023 (based on projected coal wash volumes). A review of the design is anticipated to be included in the next revision of the CWEA Management Plan. The concept design for the Stage 4 CWEA indicates an estimated capacity of 26 Mt of coal wash emplacement.

Table 29 outlines the nominal capacity and status of each of the coal wash emplacement areas.

Table 29: CWEA – Capacity and Status

Emplacement Stage	Estimated Capacity (Mt)	Emplacement Status
1	4.6	Complete
2	20.8	Complete
3	29.3	Current
4	26	Not Yet Commenced

During the reporting period, IMC diverted approximately 0.42 Mt of coal wash from the DCPP 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. IMC has agreements with property developers, that should continue to see large volumes of coal wash diverted for beneficial uses. Coal wash was utilised at the Spring Farm Parkway in FY23, and this will continue in FY24. IMC continues to develop a pipeline of major projects that will require engineered fill for the next five years.

Coal wash from the DCPP had been stored at Appin North in various stockpiles since 2019 pending approval for use in OPDs or for beneficial reuse. In FY23, an audit of coal wash management was completed by the EPA. The EPA required waste levy monthly reports to be amended and submitted to reflect the volume of stockpiled material that had been stored for greater than two years on site, and an outstanding levy contribution was paid. Emplacement of the stockpiled material continued in FY23.

The IMC Coal Wash Road Base Project planning continued during the reporting period.

Considerable work continues to be carried out on the alternative uses of coal wash, including ongoing monitoring of potential contaminants when coal wash is used for landfill or emplacement. This work has been reported in previous Annual Reviews.

IMC will continue to be involved in research, the development of, and implementation of alternative uses for coal wash in order to minimise the volume of coal wash emplaced at the CWEA in the future.

Approximately 225 kt of reprocessed coal wash was transported to PKCT for export during FY23 as a low-grade thermal coal. The product is used for power generation and the production of cement after blending with high CV thermal coal. Anticipated sales in FY24 are estimated at 245 kt.

During the reporting period IMC continued to support Australian Coal Industry Research Program (ACARP) Research Project C29016 Southern Coalfield Coal Washery Reject Characterisation and Classification, including management strategies for applications in Civil Engineering. The final report was published in June 2023 and is available for download on the ACARP web site (https://www.acarp.com.au/).

6.19.2 Ventilation Shaft 1

No activities are undertaken at Ventilation Shaft 1 and therefore there was no waste generated.

6.19.3 Ventilation Shafts 2/3

During the reporting period, 30 m^3 of waste generated at the Ventilation Shaft 2/3 site was removed from the site as construction/mixed waste.

6.19.4 DCPP

Waste at the DCPP is managed under the BlueScope Steel contract with Veolia Waste Management.

6.19.5 Cordeaux Colliery

6.19.5.1 General Waste

General waste produced at Cordeaux Colliery was negligible throughout the reporting period as the site is on care and maintenance and the waste generated is predominantly from personnel utilising offices on site. There was a reduction in waste going to landfill during FY23 as the adoption of waste being recycled through ResourceCo improved following a review of waste management and improvement plan in the previous reporting periods. Cleanaway Waste Management Services attend site to remove waste. The amount of waste from Cordeaux Colliery for FY23 and a comparison to previous reporting periods is shown in Table 30. Waste such as cardboard, paper and batteries are set aside for recycling or reuse.

Table 30: General Waste Volumes for Reporting Period – Cordeaux Colliery

Waste Stream	Treatment/ Disposal	Volume (tonnes)			
		FY20	FY21	FY22	FY23
Commingle	Recycled off site	2.3	8.8	2.5	2.1
General/Store Waste	Landfill	22.7	24.6	23.1	5.2
General Waste (ResourceCo)	Recycled off site	0	0	14.3	34.3
Cardboard	Recycled off site	0	0	0.3	2.8
Oily Water/Sludge	Treated off site	0	8.5	0	93.5
Timber	Recycled off site	3.7	0	0	0
Steel	Recycled off site	0	0	14.2	8.5

6.19.5.2 Sewage Treatment / Disposal

All sewage effluent is transported off site by a licenced contractor for treatment and disposal. During the reporting period 308.5 kL was removed from Cordeaux Colliery.

6.19.5.3 Oil and Grease Containment and Disposal

No bulk oils or greases are stored on site. Oil sumps and traps remain in place and are periodically inspected by site personnel and emptied as required by a licenced contractor. During the reporting period 93.5 tonnes was removed from site. This significant increase from previous years was due to the implementation of a drillings muds disposal procedure which directs the disposal of muds that exceed specific water quality guidelines to be disposed via a licensed waste contractor. During the reporting period there was a significant number of drilling muds loads being disposed of via this method, most notably due to surface-to-inseam drilling operations.

7. WATER MANAGEMENT

7.1 Groundwater

7.1.1 Dendrobium Mine

The Dendrobium Mine groundwater monitoring program was undertaken during the reporting period as defined in the approved Water Management Plan and Groundwater Monitoring Plan under the SMP, and Avon and Cordeaux Reservoirs Notification Area Management, Closure and Contingency Plan. The purpose of the program is to analyse the water quality and quantity within the mine and mining area to satisfy health, safety and environmental aspects of the Consent and South32 Policies and Standards. The plans were developed in consultation with Dams Safety NSW, DPIE (now DPE), WaterNSW, and the Department of Resources and Energy (now Resources Regulator).

Water sampling is performed underground with samples analysed on-site and at NATA accredited laboratories. Mine water usage, water flows and volumes within the mine are analysed and reported regularly (i.e. on a monthly basis). Surface and underground vibrating wire piezometers are utilised to monitor groundwater response to mining. Monthly reports are prepared and submitted to Dams Safety NSW, WaterNSW and DPE summarising water quality and the water balance at Dendrobium. During the reporting period, Dendrobium operated under a Principal TARP as outlined in the Avon and Cordeaux Reservoirs DS Notification Area Management, Closure and Contingency Plan. During the reporting period, the water balance was above the Level 1 trigger from July 2022 to February 2023 and returned to the 'Normal' level in March 2023. Actions were taken as per the Principal TARP in the management plan (Figure 24).

Total Underground Water Balance Coupled with Sampling and Analysis

Flow rates averaged over 7 day period	CHARACTERISTICS OF LEVEL	POSSIBLE REASONS	ACTIONS	ACTION BY	NOTIFICATION
NORMAL	≤ 0.5 ML/day stored water and ≤9ML/day total water imbalance	N/A	▪ No remedial action necessary ▪ Monthly review meeting	**No Special Action Required**	None necessary
Level 1	> 0.5 to ≤1.0 ML/day stored water or >9 to ≤11ML total water imbalance and/or Unacceptable secondary monitoring alarm	▪ Intersection of 'conduit' to stored water source ▪ Increased groundwater make ▪ Normal Wongawilli seam water 'make'	▪ Advise DS and WaterNSW. ▪ Review all other monitoring inputs for anomalies, likely sources and 'conduit' path. ▪ Assess the need for increased sampling frequency and/or pumping capacity. ▪ *Assess the need to seek expert advice re appropriate remedial solution or other water reduction strategy*	**Manager Approvals**	▪ Water Balance Review Team ▪ DS and WaterNSW (notification within 24 hours of confirmation)
Level 2	>1.0 to ≤1.9ML stored water or >11 to ≤13 ML/day total water imbalance	▪ Intersection of 'conduit' to stored water source ▪ Increased groundwater make	▪ Advise DS and WaterNSW. ▪ Review requirement for increased sampling and reporting frequency. ▪ Consider Incident Management Team activation. ▪ Review pumping and production strategy as necessary. ▪ *Formulate and implement a water reduction strategy.* ▪ *Seek expert advice re appropriate remedial solution or other water reduction strategy.*	**Manager Approvals**	▪ Water Balance Review Team ▪ DS and WaterNSW (immediately on confirmation)
Level 3	>13ML/day total water imbalance	▪ Increased groundwater make	▪ Advise DS and WaterNSW. ▪ Review Level 2 sampling and reporting frequency. ▪ Activate Incident Management Team ▪ Modify production and pumping strategy to suit.	**General Manager**	▪ Water Balance Review Team ▪ IMT ▪ DS and WaterNSW (immediately on confirmation)
Unacceptable Stored Water	>1.9ML/day stored water	▪ Intersection of 'conduit' to stored water source	▪ *Advise DS and WaterNSW.* ▪ *Activate IMT* ▪ *Stop Longwall and Development production* ▪ *Adopt contingency measures from Level 2* ▪ *Mobilise mitigation and sealing strategies* ▪ *IMT and review team meetings daily – seek DS input*	**General Manager**	▪ Water Balance Review Team ▪ IMT ▪ DS and WaterNSW (immediately on confirmation)

▪ Note: Water Balance Volumes exclude Area 2 Rainfall related events

▪ *Actions in Blue Italic are only for Stored Water*

Figure 24: Cordeaux Principal Response Flowchart in Avon and Cordeaux Reservoirs DS Notification Area Management, Closure and Contingency Plan.

A summary of the mine water balance for the reporting period is provided in Figure 25.

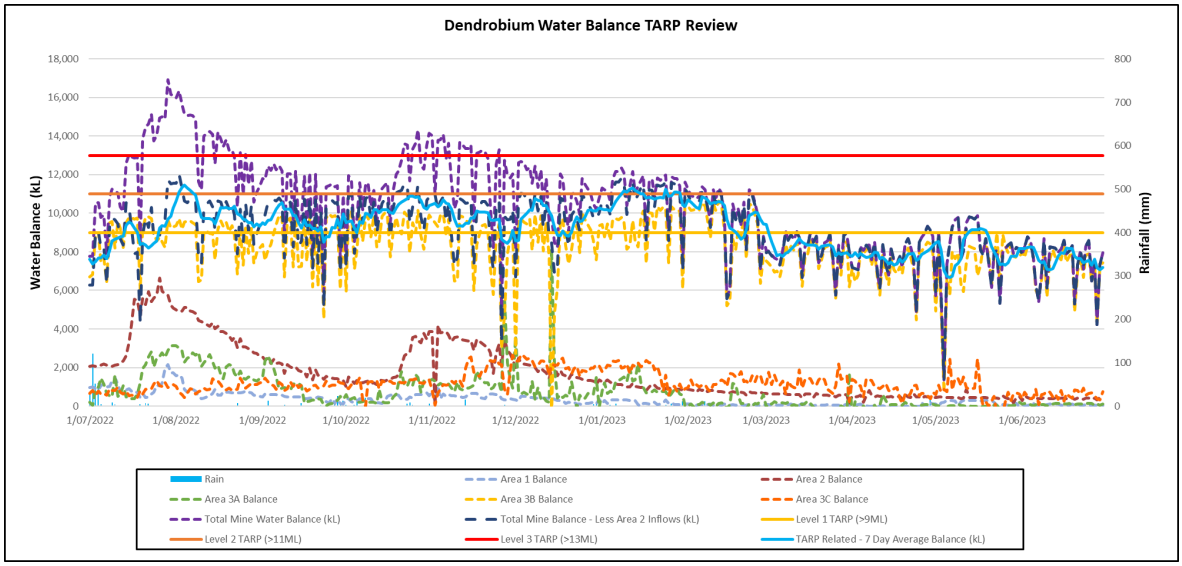


Figure 25: Dendrobium Mine Water Balance – FY23

The TARP-related water balance has increased since March 2022 due to significant rainfall events. The increased water balance was expected since Area 3B pumps have been running at a high capacity to dewater Area 3B goaf water. There is correlation between increased water in Area 3B goaf and excessive rainfall events based on the recorded monitoring data. Area 3B has a delayed response to rainfall of approximately two months following significant rainfall events. With the significant amount of rain in 2022, the water level has increased in Area 3B. A temporary Flygt pump was installed in June 2022 to assist with the extraction of water from Area 3B. The installation of this pump has allowed for an increase in the pump out rate.

The groundwater reporting to the mine workings during normal conditions is largely characteristic of coal measure and associated strata water. This water is higher in salinity and age based on water chemistry and isotope analysis. Water samples from inflow events have been typical of near seam coal and shale water. Geochemistry, and isotope analysis is conducted monthly to determine probabilistic proportions of any modern rain or dam water entering the workings. Fluctuations in the water balance were largely a result of significant rainfall events. The water balance for the reporting period is shown in Table 31.

Table 31: Water Balance Statistics for the reporting period

Statistic	Total Water Balance	7 Day average Water Balance Less Area 2 Inflows (TARP related)	Units
Mean	10,361	9,209	kL/day
Maximum	16,929	11,477	kL/day
Minimum	1,357	6,658	kL/day
Total	3,781,636	3,361,442	kL

Mining of LW19 resulted in continued depressurisation of the target coal seam and overlying strata. The observed changes in groundwater levels are in line with (or less than) numerical model predictions that support mining approvals.

As expected, the greatest depressurisation is within the Wongawilli Coal Seam and deeper strata and decreases with height above the seam.

Between 2015 and 2020, a series of monitoring bores were installed along the barrier zone between Lake Avon reservoir and Area 3B. Mining of LW19 resulted in continued depressurisation of the target coal seam and overlying strata in line with numerical model predictions. Importantly, for piezometers installed in the barrier zone between Lake Avon and Area 3B, observed head is similar to, or higher than, the numerical model prediction. Therefore, the model predictions are generally accurate as of LW19 or tend to over-estimate groundwater drawdown.

7.1.2 Cordeaux Colliery

A total of 3.989 ML was transferred from the surface to Cordeaux underground workings during the reporting period. This is a decrease from the previous reporting period (5.596 ML) and in line with a decrease in total rainfall recorded at the site in FY23, compared to the previous 12-month period. Some water that would have been transferred to underground workings was instead used in Exploration operations.

7.2 Surface Water

7.2.1 Dendrobium Mine

Underground and surface operations at Dendrobium utilise a combination of potable and recycled mine water.

7.2.1.1 Potable Water Use

Potable mains water, supplied by Sydney Water, is currently used for the longwall hydraulic roof supports (emulsions used underground require high quality water for batching) and surface amenities such as the kitchen and bathhouse facilities. Potable water is also used for fire suppression sprays installed in FY20, which are connected to the fire water tank. Potable water usage for the reporting period for underground was 4.68 ML, which is a 9% increase compared to the previous reporting period. The total potable water used for both underground and surface operations was 56 ML for the reporting period.

7.2.1.2 Recycled Water Use

Recycled water is sourced from the Nebo Workings and used for various purposes on the surface and for underground operations. In this reporting period, a total of 511.55 ML of recycled water was used. These purposes include:

- Surface Operations:
    - Dust suppression along the Portal Road.
    - Cleaning of vehicles and equipment in the wash down bay.
    - General hose down.
    - Cleaning and firefighting.
- Underground Operations:
    - Secondary support activities.
    - Development and production units.
    - Dust suppression and firefighting supply.

7.2.1.3 Surface Water Management

Surface water runoff is separated into three streams at the Pit Top site. The three streams include, clean water, oily water and site runoff. At the KVCLF, surface water is separated into two streams, which include clean water and site runoff. Detail on these streams is available in the Water Management Plan, available on the IMC website using this link.

The Pit Top sediment pond and KVCLF sediment ponds are managed in accordance with the Water Management Plan.

Runoff from O'Brien's drift is classified as clean water therefore runoff is diverted into the natural drainage systems.

7.2.1.4 Rainfall

Rainfall recorded in the Dendrobium Mine area at the DA3B weather station during the reporting period was 1652 mm, a decrease when compared to the previous reporting period in which 2274.5 mm rainfall was recorded. Most of FY23 experienced below average rainfall, with the exception of the first week of July which recorded 40% of the annual rainfall total for FY23. Daily rainfall for the weather station at DA3B is displayed in Figure 26. Annual rainfall data for FY11 to FY23 is displayed in Figure 27.

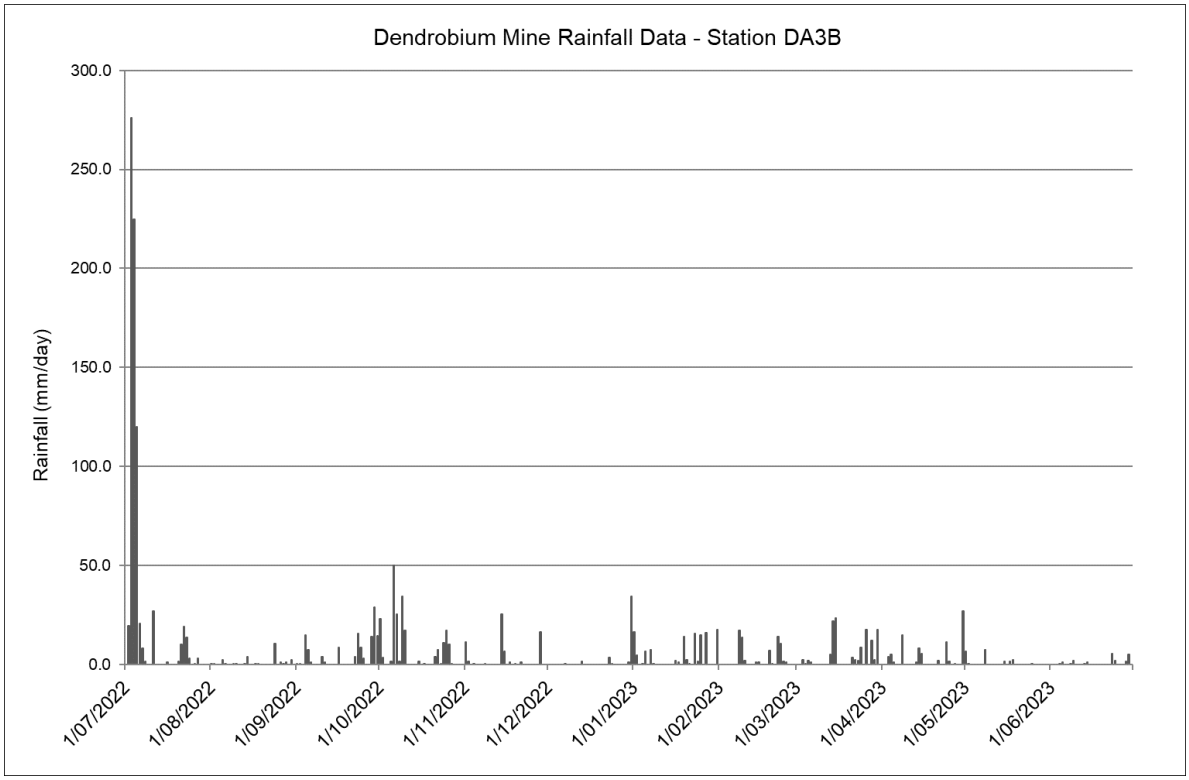


Figure 26: Dendrobium daily rainfall data for FY23

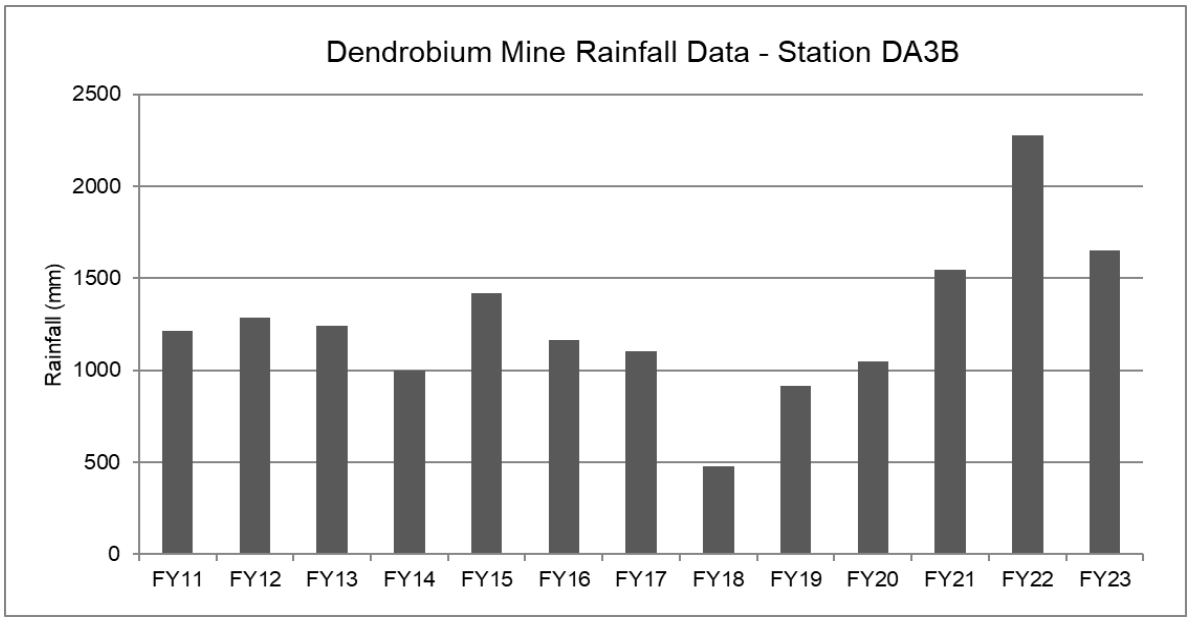


Figure 27: Annual rainfall data for Dendrobium - FY11 to FY23

7.2.2 Cordeaux Colliery

7.2.2.1 Water Supply and Use

Potable water use at Cordeaux Colliery is generally for personal consumption and toilet facilities. Potable water is brought to site by road tanker as required. During the reporting period the potable water used by site was 0.182 ML.

7.2.2.2 Surface Water Management

The surface facilities at Cordeaux Colliery have been designed to prevent water run-off from the site entering WaterNSW land. The design provides effective treatment of run-off from potentially dirty areas such as the coal bins, workshop area and machinery hard-stand areas. Drainage from these areas is directed to the Primary Separation Lagoon. The clean and dirty water surface drainage circuits of the site remain in place.

As the site is on care and maintenance, the amount of dirty water generated from the surface areas has significantly reduced. Water from hardstand areas is captured in the Primary Separation Lagoon then transferred by pump to the upper-level Primary Stabilisation Lagoon for settlement. The water is then transferred to underground mine workings from the Mine Water Holding Lagoon via a gravity fed pipeline. This arrangement negates the requirement for any surface discharge. The water returned to the mine is essentially of good quality, containing no contaminants. Details of the monitoring and transfer volumes are provided in Section 7.1 of this report.

Runoff from the Corrimal Shaft sites is classified as clean water therefore runoff is diverted into the natural drainage systems.

7.2.2.3 Rainfall

Rainfall for the Cordeaux surface facilities is recorded on a daily basis from a rainfall gauge located at the Cordeaux Colliery Pit Top. The Cordeaux site received a total of 1649 mm of rainfall during the reporting period, which was a decrease from the previous reporting period (1962 mm). Low rainfall was recorded for most of the reporting period with the exception of the first week of July, which recorded 46% of the annual rainfall total for FY23. Annual rainfall recorded at the Cordeaux Colliery rain gauge is displayed in Figure 28. Figure 29 shows the annual total rainfall recorded for FY11 to FY23.

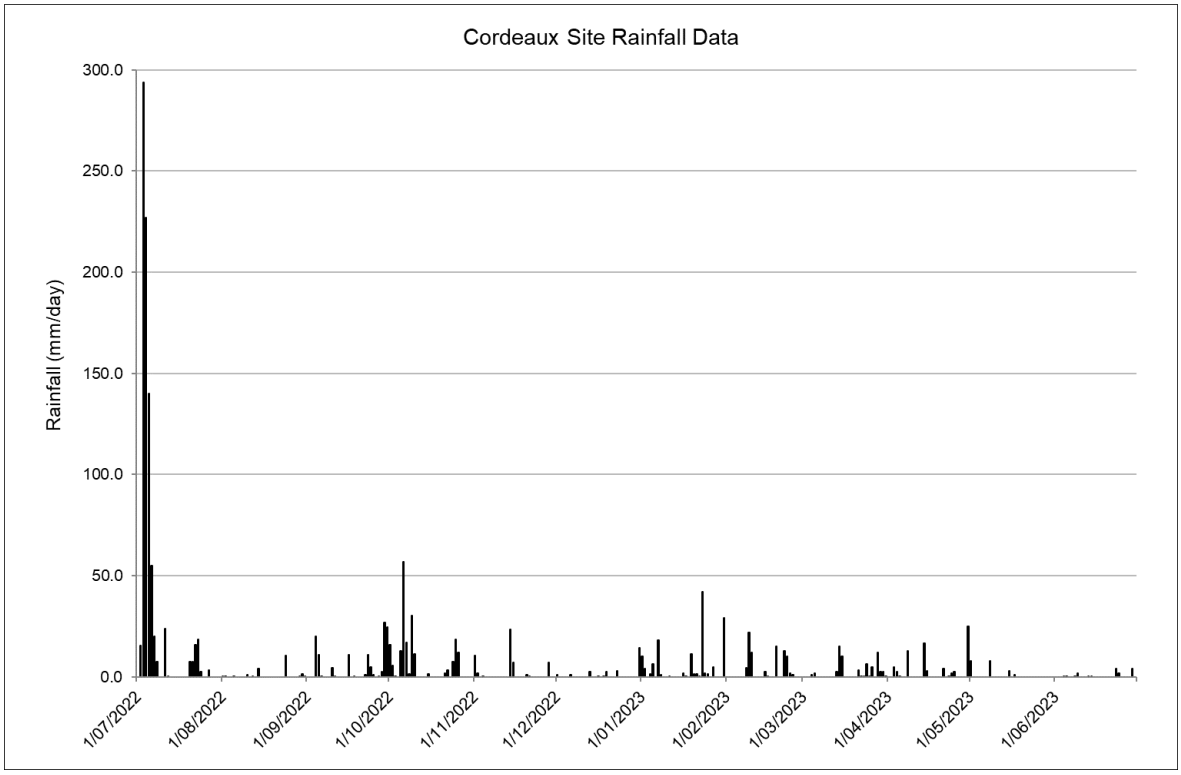


Figure 28: Cordeaux FY23 daily rainfall - site rain gauge

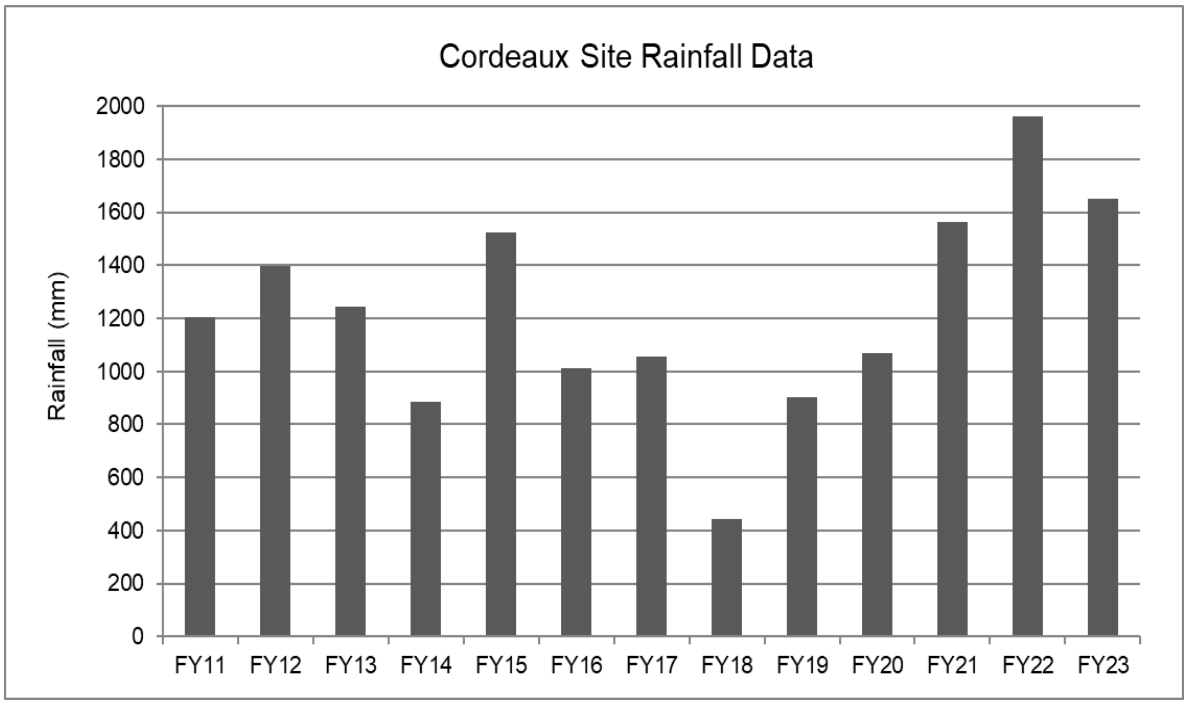


Figure 29: Cordeaux annual rainfall - FY11 to FY23

7.2.3 Ventilation Shafts 1, 2 and 3

No water usage or capture occurs on the Ventilation Shaft 1 site. Rehabilitation of disturbed areas has been undertaken at Ventilation Shaft 1.

The Ventilation Shaft 2/3 site uses potable water transported in via water cart to supply kitchen and ablution block facilities with water. Construction water is obtained from the on-site sediment ponds, or from potable water trucks during periods of low rainfall.

Due to their location within WaterNSW Special Areas, the surface facilities at the ventilation shafts have been designed to control sediment entering the surrounding WaterNSW land by capturing stormwater from disturbed areas and directing this water to sediment ponds. The sediment ponds were extended in the reporting period for the gas management infrastructure project.

7.2.4 DCPP

Industrial water is supplied by Sydney Water mains via the BlueScope Steel water network. Industrial water consumption in FY23 was 246,427 kL, compared to 290,383 kL in FY22.

The stockpile operations reuse water from the sediment dams (No. 4 Area). Industrial water is used to 'top up' the systems as required due to water loss on vehicles and to the environment.

Potable water is supplied to the DCPP by Sydney Water mains via the BlueScope Steel water network. Potable water consumption in FY23 was approximately 4,988 kL, which is based on the assumption of 466 litres per person per day.

Water produced from the DCPP is managed through the BlueScope Steel EPL. IMC advises BlueScope Steel if discharges of water from the DCPP occur.

7.3 Water Licences

Dendrobium Mine has a Water Supply Works Approval and four water access licences. Water take at Dendrobium Mine for FY23 is shown in Table 32.

Note: 1 unit = 1 ML.

Table 32: Water Take – Dendrobium Mine

Water Licence Ref No.	Water Sharing Plan, Source and Management Zone	Entitlement (units)	Total (ML)
10AL118771	Greater Metropolitan Region Groundwater Sources Sydney Basin South Groundwater Source Nepean Management Zone 3	75	0
10AL119249	Greater Metropolitan Region Groundwater Sources Sydney Basin Nepean Groundwater Source Nepean Management Zone 2	3962	3774
10AL123124	Greater Metropolitan Region Groundwater Sources Sydney Basin Nepean Groundwater Source Nepean Management Zone 2	3653	0
10AL123125	Greater Metropolitan Region Groundwater Sources Sydney Basin Nepean Groundwater Source Nepean Management Zone 2	1840	0

7.4 Compensatory Water

No compensatory water was supplied to other users during the reporting period.

8. REHABILITATION

8.1 Rehabilitation for the Reporting Period

8.1.1 Dendrobium Mine

8.1.1.1 Rehabilitation Management Plan (RMP)

A RMP was developed in FY22 to meet the requirements of the Form and Way documents published by the Resources Regulator. Rehabilitation objectives, a final landform and rehabilitation plan and a Forward Plan were submitted to the Resources Regulator Portal. The rehabilitation objectives and final landform and rehabilitation plan were not accepted by the Resources Regulator in March 2023 and were resubmitted in June 2023.[19] Rehabilitation criteria will be submitted in FY24.

The forward work plan and schedule is available in the Dendrobium and Cordeaux RMP, available using this link. Executing the rehabilitation work remains subject to the outcomes of these investigations and studies, as well as external and internal approval processes.

8.1.1.2 Rehabilitation Activities – FY23

Investigations and studies continued into the removal of redundant infrastructure associated with O'Briens Drift, particularly at the KVCLF. These included a Hazardous Building Materials Survey, engineering for belt removal and design work associated with the Endeavour Energy powerline relocation.

An application for part cancellation of CCL 768 was submitted in December 2022 for the area of land covered by Stage 2 of the Mount Kembla Mine Memorial Pathway. IMC considers that the area has been successfully rehabilitated to the agreed final land use. A response has not yet been received from the Resources Regulator.

Contaminated soils were removed from the footprint of the O'Briens Gap pump house during the reporting period. Validation testing and backfilling was also completed.

The rehabilitation security cost estimate for the Dendrobium operations was reviewed during the reporting period. No major changes to the existing security estimate were identified, although increased costs associated with future rehabilitation at the Ventilation Shaft 2/3 site due to the construction of gas management infrastructure were identified. A copy of the latest security cost estimate is provided as Appendix 2[20].

An Annual Rehabilitation Report is required to be submitted to the Resources Regulator in accordance with Clauses 9 and 13 of Schedule 8A of the *Mining Regulation 2016*. A copy of this report is provided as Appendix 9.

Analogue sites were established for the Dendrobium Pit Top, KVCLF, Ventilation Shaft 1, Ventilation Shaft 2/3 and the Cordeaux Pit Top in FY23 (two for each site). A baseline assessment of all ten analogue sites was undertaken and baseline data collected for future comparison with each of the five sites and to enable the identification of suitable species for use in rehabilitation (seed and tube stock). Soil chemistry, soil microbial activity and soil health attributes from each of the analogue sites was also assessed. Further, observations of erosion, slope instability or other landscape attributes that may influence the sites rehabilitation success were also collected whilst on site. A monitoring program has not yet been established.

[19] Rehabilitation objectives were approved in September 2023.
[20] The RCE is Commercial in Confidence and is only provided to the Resources Regulator.

8.1.1.3 *Exploration*

Exploration site rehabilitation takes place progressively at the cessation of drilling. Rehabilitation typically involves the removal of any added crushed sandstone used to build up the drilling pad, and subsequent brush-matting to encourage vegetative restoration. Rehabilitation of bushland is monitored for success over several years.

Some sites have groundwater monitoring instrumentation installed and these sites will be fully remediated at the completion of the monitoring program. All rehabilitation is conducted according to the relevant Review of Environmental Factors documentation related to each activity, as well as in accordance with any additional conditions imposed by WaterNSW activity approvals.

Exploration rehabilitation across CCL 768 in FY23 was primarily focussed on the rehabilitation of sites drilled in FY22 and FY23. The rehabilitation status of completed FY23 boreholes is captured in Table 33.

Table 33: Rehabilitation status of completed FY23 boreholes

Hole Name	Alternative Name	Rehabilitation Status
S2379D	AD_5D	Site remains open for ongoing monitoring.
S2475B	EL5_3	Rehabilitated, but track remains open for monitoring on site AD_5D/S2379.
S2642B	LW19a-06B	Rehabilitation completed and being monitored.
S2642A	LW19a-06A	Rehabilitation completed and being monitored.
S2642	LW19a-06	Rehabilitation completed and being monitored.
S2641B	LW19a-05b	Rehabilitation completed and being monitored.
S2641A	LW19a-05a	Rehabilitation completed and being monitored.
S2641	LW19a-05	Rehabilitation completed and being monitored.
S2521A	GW18-1A	Rehabilitated.
S2652	D-S3-01_IMC-CAL	Rehabilitated, but not grouted (with approval) due to hole purpose (calibration hole for geophysical logging equipment).

8.1.1.4 *Subsidence*

Subsidence impacts associated with underground mining operations, predominantly soil cracking, were monitored and reported as they were identified. Where these cracks occurred on access tracks, they were repaired with backfilling and/or regrading. Cracks identified in bushland were monitored to verify they remediated naturally to avoid additional ground and vegetation disturbance. Where there is a potential safety risk to workers walking near these sites, signage and caution tape is put in place. Details of remediated sites is included in the latest EoP Report. Any ongoing changes to these impacts will be rehabilitated as required.

The WC21 and Donalds Castle Creek Rehabilitation Plan was approved by the Department following extensive consultation with various agencies. The trial rehabilitation program commenced in FY23 with drilling and grouting of the two pools in WC21. These trial works were completed in FY23 and post-grouting monitoring of pool water levels is underway, with results due to be reported in FY24.

8.1.1.5 *Rehabilitation monitoring*

No rehabilitation monitoring was undertaken in the reporting period at surface facilities as no recent rehabilitation has been undertaken.

The O'Briens Gap Switchyard final report was submitted to the Resources Regulator in FY23.

Subsidence remediation monitoring is undertaken when travelling along tracks where remediation activities have occurred.

8.1.2 Cordeaux Colliery

No rehabilitation was undertaken at the Cordeaux Colliery Pit Top site during the reporting period.

Cordeaux is to remain on care and maintenance in the immediate future, until longer-term options can be fully developed and approved.

A Hazardous Building Materials Survey was undertaken for the Corrimal No. 3 site and Cordeaux Pit Top redundant coal bins. Planning is underway for their removal.

8.2 Biodiversity Offsets

No new biodiversity offsets were sourced over the reporting period. Details of offset properties previously purchased and offset strategies developed are provided in previous Annual Reviews.

No offset credits were retired over the reporting period, however Biodiversity Credits were purchased (BCF424) for the Area 3C gas management infrastructure project.

9. COMMUNITY

9.1 Community Complaints

9.1.1 Dendrobium Mine

IMC operates a 24-hour Community Call Line (free call 1800 102 210) and a general email address illawarracommunity@south32.net. The call line and email address enable the community to request and provide feedback about operational activities and lodge complaints on any aspect of the Dendrobium Mine operations. The call line number and email address have been advertised throughout the reporting period in correspondence distributed to the community including the IMC website, newsletters, and community portal www.community.south32.net.

A complaint received by IMC in any format will be investigated and resolved with assistance from the relevant operational personnel. Feedback is provided by the Community Team to the complainant during the investigation and regarding the outcome of the complaint. Community complaints must be responded to within 24 hours of the complaint being received. Some complaints require ongoing investigation and remedial action to address the nature of the complaint. Information regarding a complaint and the outcome is provided publicly on the IMC website and to the DCCC, IMC management and government agencies on a regular basis.

For the reporting period, Dendrobium Mine received 24 community complaints in comparison to 52 community complaints in FY22. The decrease in complaints is related to increased proactive communications to the community regarding mining activities and a reduction in machinery movements during longwall changeout. The notification area for proactive communications was extended to all properties along Cordeaux Road. Proactive updates are distributed to the community via email, letter, or social media and communicated to the DCCC. No complaints were received during April, May, and June 2023.

A summary of complaints received in FY23 is provided in Appendix 4. This report details the nature of the complaint, investigation, and outcome.

The breakdown of complaints received in FY23 was:

- Noise – Pit Top (46%)
- Noise – Rail Operations (33%)
- Traffic (13%)
- Environment (4%)
- Other (4%)

Five complaints related to noise, five related to parking on Cordeaux Road and one related to lighting were received under Grievance 0045671.[21]

Figure 30 highlights the complaints by issue and month. An increase for the months of December and January was related to a compressor operating that became more audible during the period (refer to Section 6.8.1.5). Improved noise management in FY23 has also contributed to a reduction in complaints.

[21] Complaints received under the grievance are not counted against the number of complaints.

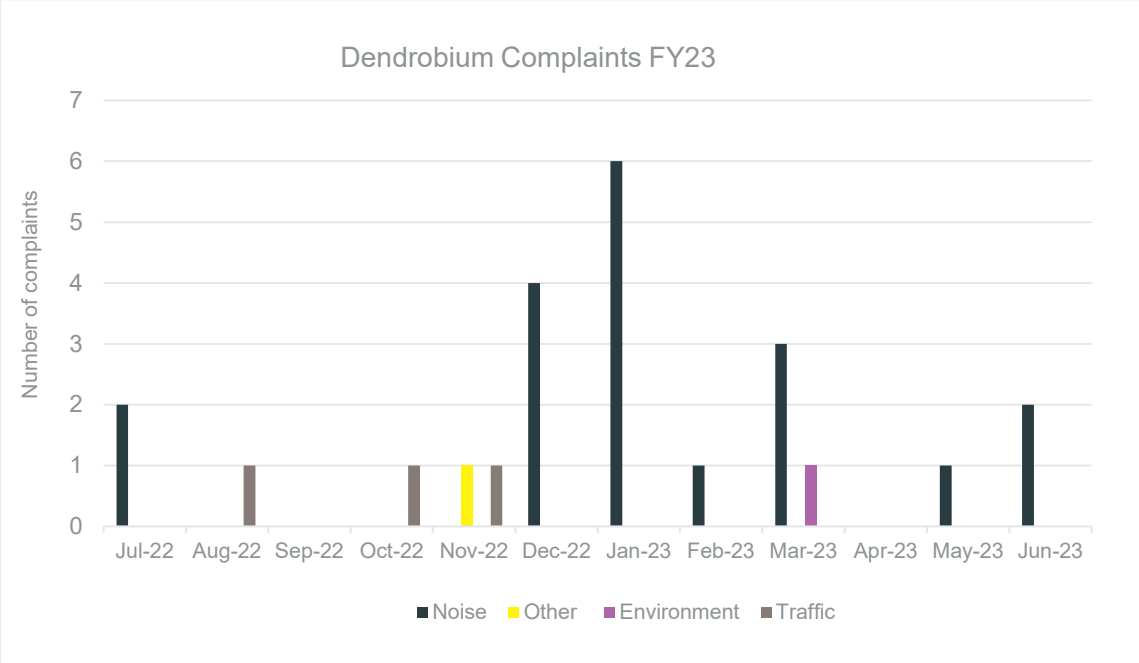


Figure 30: Dendrobium Community Complaints by Issue - FY23

The complaints received in the period FY19 to FY23 are shown in Figure 31.

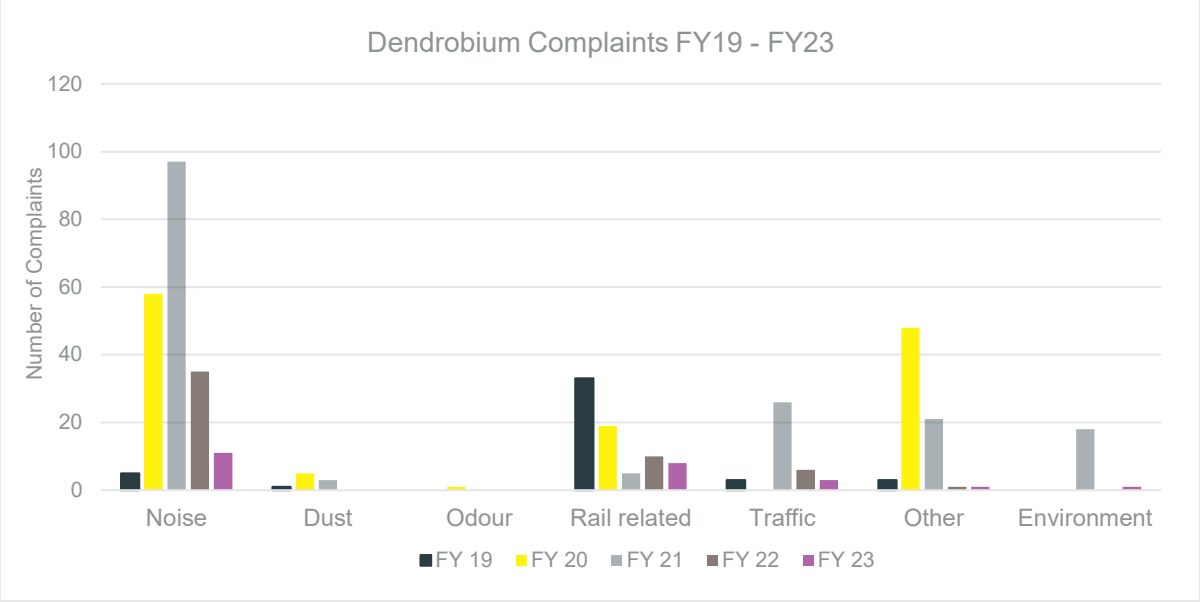


Figure 31: Dendrobium Community Complaints FY19 – FY23

9.1.2 Cordeaux Colliery

There were no community complaints for Cordeaux Colliery received during the reporting period.

9.2 Community Liaison

9.2.1 Dendrobium Mine

9.2.1.1 Community Consultation

Due to the location of the Dendrobium Pit Top facilities and KVCLF, it is essential that frequent and effective communication occurs between mine personnel and residents of Mount Kembla and surrounding areas. IMC takes a proactive approach to community consultation endeavouring to advise residents of issues in advance, including scheduled construction activities or unusual traffic movements. The consultation occurs using a variety of methods including:

- community newsletters and other letterbox drops;
- email notifications;
- DCCC meetings;
- Dendrobium Community Enhancement Committee (DCEC) meetings;
- Community Portal (www.community.south32.net);
- participation in community events and activities;
- IMC Facebook Page;
- Community Perception Surveys; and
- individual landholder visits/meetings.

9.2.1.2 DCCC

The DCCC was established in January 2002 in accordance with Condition 9 of Schedule 8 of the Consent. The DCCC provides a mechanism to bring the community, environmental groups, local councils and IMC together:

- to establish good working relationships between the company, the community and other stakeholders in relation to Dendrobium Mine;
- for the ongoing communication of information and discussion of mining operations and the environmental performance of the mine;
- to discuss community concerns and review the resolution of community complaints;
- to discuss communication of relevant information on the mine and its environmental performance to the wider community, including results of environmental monitoring, environmental management reports and the results of audits; and
- to work together towards outcomes of benefit to the mine, immediate neighbours and the local and regional community.

The DCCC is nominally comprised of 14 members including an Independent Chairperson, local community members, environmental group representatives, representatives from Wollongong City Council and Wollondilly Shire Council and IMC representatives.

A summary of information presented to the DCCC during the reporting period included, but is not limited to:

- longwall operations and development activities;
- SMPs/Extraction Plans (EPs);
- approval processes and updates (including the DMEP);
- environmental compliance and management;
- EoP Reports;
- community complaints and community programs; and

- general community issues.

Copies of minutes from the DCCC meetings are available on the IMC website at: link.

9.2.1.3 Newsletters and Information Sheets

During the reporting period, IMC distributed community newsletters to the local community (Mount Kembla, Kembla Heights and communities located along the KVRL) covering a range of topics including:

- operations updates, including longwall and development progress;
- environmental improvement works;
- events and organisations supported by Dendrobium Mine and IMC;
- the DMEP; and
- DCCC and DCEC activities, including information on inspections and projects supported.

9.2.1.4 Dendrobium Community Enhancement Program (DCEP)

The DCEP was established in 2002 to facilitate funding for community projects with a vision to create a strong community and positive environment for the residents in the zone of influence of Dendrobium Mine. Since inception, IMC has contributed over $1.9 million to the fund and continues to contribute three cents per saleable tonne of coal from the Dendrobium operations (adjusted for CPI).

The program is administered by the DCEC which is comprised of an independent Chairperson, community representatives and IMC representatives. The DCEC met regularly during the reporting period, with extraordinary meetings also convened to conduct business planning and review of operations.

Local projects and activities supported by the DCEP in FY23 included:

- 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.

Organisations in the local community are encouraged to apply for funding. Applications for funding under the DCEP are assessed against a range of selection criteria. The application form and selection criteria can be accessed using this link.

9.2.1.5 *Other Partnerships*

IMC has supported community initiatives and undertaken community engagement in FY23. This includes, but is not limited to, partnerships with University of Wollongong Science Space, the Clontarf Academy, Ride Wollongong, Illawarra Women's Trauma Recovery Centre, Illawarra Local Aboriginal Land Council, and Symbio Wildlife Park (koala conservation).

This partnership between Symbio Wildlife Park and South32 is about making generational changes surrounding awareness and conservation of Koalas and Australian native wildlife, combined with achieving measurable objectives around community and workplace engagement, conservation outcomes and education. Starting with the Macarthur and Illawarra Regions, the end goal is to make a national, and even international impact, and contribute to saving Australian native species from extinction.

Funding for the Ngayagang Yanba Project previously reported in FY22 is being repurposed for a similar waterways project planned in FY24.

9.2.2 *Cordeaux*

No specific community liaison was undertaken for Cordeaux Colliery during the reporting period.

10. INDEPENDENT AUDITS

10.1 Environmental Audits

During this reporting period the performance of Dendrobium's Environmental Management System was assessed in a comprehensive series of audits as detailed in Table 33. A Governance Review process is in place as part of the ISO 14001 certification. This process involves reviewing relevant environmental management plans in accordance with the schedule and incorporates both a desktop review and in-field verification. If non-conformances are identified during audits, they are recorded and tracked via the action tracking system utilised by IMC.

Table 34: Environmental Audits undertaken during the reporting period

Date	Type	Internal	External	Comments
June 2023	Annual ISO 14001		X	Surveillance audit. Undertaken by SAI Global.
June 2023	Self-Assessment	X		Self-assessment of compliance with the South32 Environment and Climate Change Standard.
April - Sept 2023	Reasonable Assurance Audit	X	X	Review of externally reported GHG and water data.
Ongoing	Management plan Governance Reviews	X		Conducted internally as a part of ISO 14001 certification.

10.1.1 *ISO 14001*

The IMC Environmental Management System has been certified to the International Standard ISO 14001:2015 since June 2003. ISO 14001 Certification for Dendrobium Mine, DCPP and Cordeaux Colliery was maintained following an external surveillance audit during June 2023. No non-conformances were identified.

The auditing process requires demonstration of adequacy of systems to manage environmental aspects and impacts related to site activities. The systems audited include legal compliance, document control, records, corrective action, monitoring and control, training and management of risks.

10.1.2 Environment and Climate Change Standard (ECCS)

An updated version of the ECCS was released in December 2022.

The Self Assessment for the South32 ECCS for this reporting period was conducted by IMC personnel. It was found that the requirements of the ECCS are largely in place.

Improvement opportunities identified in the 2nd Line Assurance Health Check in May 2022 were addressed in FY23.

10.1.3 Governance Reviews

The following internal Governance Reviews were conducted for Dendrobium Mine and Cordeaux Colliery during the reporting period:

- Dendrobium Mine Noise Management Plan;
- Dendrobium Mine Water Management Plan;
- Dendrobium Mine Pollution Incident Response Management Plan – EPL 3241;
- Dendrobium Mine Air Quality and Greenhouse Gas Management Plan;
- Dendrobium Mine Waste Management Plan; and
- Cordeaux Mine Pollution Incident Response Management Plan - EPL 611.

From these, the majority of corrective actions raised were administrative. Corrective actions were raised in the action tracking system utilised by IMC and closed out as required. Changes required to the respective management plan as a result of the Governance Review are recorded in the Management Plan Review Log, for incorporation into the relevant management plan during the next review.

10.1.4 Independent Environmental Audit (IEA)

Environmental Resources Management Australia Pty Ltd (ERM) completed an IEA of the Consent and associated management plans in October 2020. The primary purpose of the audit was to satisfy Condition 6 of Schedule 8 of the Consent, which requires the commissioning of an IEA every three years, unless the Planning Secretary directs otherwise.

All actions to address non-compliances and observations identified during the IEA were closed out in the previous reporting period.

The next IEA is scheduled to be completed before 31 December 2023.

10.1.5 KPMG Reasonable Assurance Audit

KPMG undertakes a reasonable assurance audit for National Greenhouse and Energy Reporting (NGER) and water data annually. The FY23 audit commenced in April and is expected to be completed in September 2023.

10.2 Environmental Risk Register

Environmental risks associated with the site operations are recorded in the Environmental Aspects and Impacts Register. The Environmental Aspects and Impacts Register is reviewed regularly and is the basis of the Environmental Improvement Plan.

11. INCIDENTS, NON-COMPLIANCES AND EXCEEDANCES DURING THE REPORTING PERIOD

11.1 Site Compliance – Dendrobium

During the reporting period, Dendrobium Mine was generally compliant with legislation and approvals as listed in Section 3. Non-compliances and exceedances of criteria recorded during the reporting period are listed in Table 35 and Table 36 respectively. It is noted that an exceedance of criteria is not necessarily classified as a non-compliance. Non-compliance against legislation has also been included in this section.

Enforcement action in the reporting period is noted in Table 37.

The Dendrobium Mine Compliance Report, which reports compliance against the conditions in DA 60-03-2001, is attached as Appendix 3.

Table 35: Non-compliances during the reporting period

NC1	
Non-compliance	Forward Program for rehabilitation activities was not uploaded to IMC website within allocated timeframes.
Date	2 December 2022.
Details of non-compliance	Clause 16 in Schedule 8A of the *Mining Regulation* requires the lease holder to publish the Forward Program on its website. The Resources Regulator identified during an audit that the Forward Program was not available. It is required to be published within 14 days following submission.
Location	N/A
Cause of non-compliance	The requirement for the submission and publishing of a Forward Program is a new process. It was not identified when the Forward Program was submitted that it was also required to be published.
Actions taken to mitigate adverse effects of non-compliance	The Forward Program was published as soon as it was identified that it was not available on the IMC website. The Forward Program had been developed and had been submitted to the Resources Regulator.
Actions taken to prevent reoccurrence	A review of obligations in the IMC obligation management system was undertaken to prevent reoccurrence.

NC2	
Non-compliance	Exploration borehole was drilled outside of the period of the approval.
Date	9 June 2023.
Details of non-compliance	IMC holds mining lease CCL 768 and overlying exploration lease AUTH 143. In 2019 IMC sought and obtained approval for twenty borehole sites and associated access tracks known as Survey 17. The approval (MAAG0004533 / RR19249409) was sought under CCL 768 by lodging an ESF4 form along with a Review of Environmental Factors and an amendment to the Mining Operations Plan (MOP) to incorporate Survey 17. Separate approval for Survey 17 was obtained from WaterNSW on 22 November 2019. Works associated with Survey 17 commenced in July 2020 with eight of the 20 exploration boreholes completed well within a year. After two years of exploration activities being prioritised on other projects, the Survey 17 boreholes were added to the drilling schedule recommencing late FY23. An Official Caution was issued by the Resources Regulator on 7 July 2023.
Location	Special Area above Dendrobium Mine.
Cause of non-compliance	Shortly after drilling commenced on borehole D-A3C-S17-33 in June 2023, it was discovered that whilst the WaterNSW approval is valid to March 2025, the approval from NSW Department of Planning & Environment (MAAG0004533/ RR19249409) was only valid until 1 July 2022.
Actions taken to mitigate adverse effects of non-compliance	Drilling on borehole D-A3C-S17-33 ceased. The Resources Regulator were notified.
Actions taken to prevent reoccurrence	Actions identified to prevent reoccurrence included, but are not limited to: • 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.

Table 36: Exceedances of criteria during the reporting period

EX1	
Exceedance	Exceedances of the noise impact assessment criteria in Condition 1 of Schedule 4 of the Consent were recorded at R39a, located near the KVCLF.
Date	10 August 2022.
Details of exceedance	The representative noise data indicated exceedances of the $L_{Aeq,15\ min}$ impact assessment criteria in Condition 1 of Schedule 4 of the Consent in the following periods on 10 August 2022: • In the evening period (8.00 – 8:15 pm), a noise level of 36 dBA was recorded, which is 1 dBA above the impact assessment criteria of 35 dBA. • In the night-time period (11.00 – 11.15 pm), a noise level of 36 dBA was recorded, which is 1 dBA above the impact assessment criteria of 35 dBA. Note that for the determination of compliance, the NSW Industrial Noise Policy states in Section 11.1.3: *A development will be deemed to be in non-compliance with noise consent or licence condition of the monitored noise level is more than 2dB above the statutory noise limit specified in the consent or licence condition.*
Location	Receiver R39a, KVCLF.
Cause of exceedance	The exceedances at R39a were likely to be caused by conveyor operations and were strongly influenced by westerly winds at the time of the monitoring.
Actions taken to mitigate adverse effects of non-compliance	Mitigation at the time of monitoring is limited where the site is operating normally and in accordance with noise predictions in the environmental assessments.
Actions taken to prevent reoccurrence	There were no specific actions identified as a result of the exceedances.
EX2	
Exceedance	An exceedance of the $L_{A1,1\ minute}$ noise impact assessment criterion in Condition 1 of Schedule 4 of the Consent was recorded at R6a.
Date	10 August 2022.
Details of exceedance	An exceedance of the $L_{A1,1\ minute}$ impact assessment criterion in Condition 1 of Schedule 4 of the Consent was recorded at R6A on 10 August 2022 in the period of 12.00 – 12.15 am. A noise level of 48 dBA was recorded, which is a 1 dBA exceedance of the 47 dBA criterion.

	Note that for the determination of compliance, the NSW Industrial Noise Policy states in Section 11.1.3: *A development will be deemed to be in non-compliance with noise consent or licence condition of the monitored noise level is more than 2dB above the statutory noise limit specified in the consent or licence condition.*
Location	R6a, located adjacent to 374 Cordeaux Road.
Cause of exceedance	The cause of the exceedance was a private vehicle leaving the car park near the sediment pond. The vehicle lost traction on gravel on the access road that was under maintenance.
Actions taken to mitigate adverse effects of non-compliance	There were no options for mitigation at the time of the event.
Actions taken to prevent reoccurrence	As noted, the access road was under maintenance. Sealing of the access road has been completed.
EX3	
Exceedance	Exceedance of the noise impact assessment criterion in Condition 1 of Schedule 4 of the Consent was recorded at R39a, located near the KVCLF.
Date	15 February 2023.
Details of exceedance	The representative noise data indicated an exceedance of the $L_{Aeq,15\ min}$ impact assessment criterion in Condition 1 of Schedule 4 of the Consent. The exceedance was recorded in the night-time period (10:15 – 10:30 pm) on 15 February 2023. A noise level of 36 dBA was recorded, which is 1 dBA above the impact assessment criterion of 35 dBA. Note that for the determination of compliance, the NSW Industrial Noise Policy states in Section 11.1.3: *A development will be deemed to be in non-compliance with noise consent or licence condition of the monitored noise level is more than 2dB above the statutory noise limit specified in the consent or licence condition.*
Location	Receiver R39a, KVCLF.
Cause of exceedance	The exceedances at R39a were likely to be caused by conveyor operations and was influenced by a change in wind direction from the evening to night-time period.
Actions taken to mitigate adverse effects of non-compliance	Mitigation at the time of monitoring is limited where the site is operating normally and in accordance with noise predictions in the environmental assessments.

Actions taken to prevent reoccurrence	There were no specific actions identified as a result of the exceedance.
EX4	
Exceedance	Exceedance of the noise impact assessment criterion in Condition 1 of Schedule 4 of the Consent was recorded at R39a, located near the KVCLF.
Date	13 May 2023.
Details of exceedance	The representative noise data indicated an exceedance of the $L_{Aeq,15\ min}$ impact assessment criteria in Condition 1 of Schedule 4 of the Consent. The exceedance was recorded in the night-time period (11:30 - 11:45 pm) on 13 May 2023. A noise level of 36 dBA was recorded, which is 1 dBA above the impact assessment criteria of 35 dBA. Note that for the determination of compliance, the NSW Industrial Noise Policy states in Section 11.1.3: *A development will be deemed to be in non-compliance with noise consent or licence condition of the monitored noise level is more than 2dB above the statutory noise limit specified in the consent or licence condition.*
Location	Receiver R39a, KVCLF.
Cause of exceedance	The exceedance at R39a was likely caused by conveyor operations and was due to a temperature inversion for a short period.
Actions taken to mitigate adverse effects of non-compliance	Mitigation at the time of monitoring is limited where the site is operating normally and in accordance with noise predictions in the environmental assessments.
Actions taken to prevent reoccurrence	There were no specific actions identified as a result of the exceedance.
EX5	
Exceedance	An exceedance of the performance measure for Waterfall 54 was recorded. Condition 13 of the Area 3B SMP Approval provides for *Negligible environmental consequences including: no rock fall occurs at the waterfall or from its overhang*. This was reported in the FY22 Annual Review as a *likely* exceedance pending further investigation.
Date	Between 6 and 28 October 2021.
Details of exceedance	The IMCEFT undertook a detailed inspection at the base of Waterfall 54 on 2 August 2022. During the inspection a minor rockfall was observed. The Waterfall 54 Technical Committee met on 5 August 2022 and reviewed

	photographs of the waterfall and concluded that the rockfall occurred between 6 and 28 October 2021 and was likely associated with LW17 extraction. The rockfall site had an approximate length of 3 m, depth of 1.5 m and height of 1 m and was screened from view by dense vegetation as well as the safety setback for the observation point during previous surveys. It appears that this was an isolated rockfall and there are no concerns that the structural integrity of the waterfall has been impacted. This rockfall constitutes an exceedance of the performance measure for Waterfall 54. Condition 13 of the Area 3B SMP Approval provides for negligible environmental consequences including: no rock fall occurs at the waterfall or from its overhang.
Location	Waterfall 54, located in the Special Metropolitan Area.
Cause of exceedance	Extraction of Longwall 17.
Actions taken to mitigate adverse effects of non-compliance	IMC made the decision to stop LW17 short of the approved finish line at cut through 3 on or around 6 September 2021. As of 8 September 2021, there remained approximately 30 m of extraction to reach cut through 3 marking the revised completion of mining. As expected, valley closure continued associated with LW17 after the completion of mining. The valley closure stabilised around early 2022.
Actions taken to prevent reoccurrence	IMC will continue to monitor landscape features during longwall mining operations and use subsidence prediction modelling to meet the performance measures. The measurements and observations for Waterfall 54 will be used to update predictive methods for Dendrobium Mine. A meeting was held between DPE and IMC to discuss the rockfall and DPE subsequently advised in a letter dated 9 May 2023 that in consultation with WaterNSW and any other agency such as 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.

Table 37: Regulatory action during the reporting period

Regulatory Action	Detail
Official Caution	An Official Caution was issued by the Resources Regulator for drilling an exploration borehole outside of the period of the approval. Refer to NC1.
Warning Letters	None issued.
Penalty Notices	None issued.
Enforceable Undertakings	An Enforceable Undertaking was agreed between IMC and the Natural Resources Access Regulator (NRAR) on 30 June 2023 to regularise surface water take from Dendrobium Mine for the 2018 to 2023 water years.

	Dendrobium Mine is located within the Greater Metropolitan Water Sharing Plan area, which commenced in 2011. Prior to the implementation of the Water Sharing Plan, existing mines were not required to hold surface water licenses under the Water Act 1912 (NSW) for incidental/indirect water take. Therefore, no surface water entitlements were made available to mines when the Water Sharing Plan came into effect. In March 2013, Section 60I of the Water Management Act 2000 was introduced, clarifying that mines taking or diverting water from a water source as a result of mining activities must be licensed for that water take or diversion. However, the rules of the Water Sharing Plan did not allow or have sufficient entitlements to permit the obtaining of surface water licenses to comply with Section 60I. Additionally, trading rules prevented IMC from acquiring these licenses from WaterNSW. Recognising the need to address this issue, the NSW Government announced its intention to develop a new licensing regime in 2020 specifically accounting for surface water usage by Southern Coalfield mines. The necessity for a licensing regime of this nature was identified in 2013 following the implementation of parts of the Water Management Act. This issue has been rectified by the recent updating of the Water Licencing Regime from the State Government in March 2023. IMC have contributed $5.6 million since 2014 to account for passive water take resulting from underground activities at Dendrobium Mine. NRAR alleged that Dendrobium Mine had taken surface water without the appropriate license. To reach a resolution, IMC agreed to an enforceable undertaking. This undertaking will not only address the allegations but also result in a benefit to the local community.
Prosecution Proceedings	None commenced.

11.2 Site Compliance – Cordeaux

During the reporting period, Cordeaux Colliery was compliant with legislation and approvals as listed in Section 3.

12. ACTIVITIES PROPOSED IN THE NEXT REPORTING PERIOD

12.1 Dendrobium Mine

12.1.1 Mine Operations

During the next reporting period, Dendrobium will undertake longwall mining in Area 3C (LW21)[22] and Area 3A (LW19A). Development will continue in Area 3A and 3C Gates, Corrimal Mains and Pioneer Mains.

On 15 August 2023 DPE approved the SMP for LW19A. The Approval required an increase in the setback from a large swamp to the east of the longwall (Swamp 15A), requiring an adjustment to the start of the longwall position.

IMC submitted the SMP Application for Longwall 19A to the NSW Government in October 2022 as part of the standard mining approvals process. This LW19A Application included a 61 m setback from Swamp 15A, which is greater than the setback for the previously approved LW19 with a 22 m setback from the same swamp.

As part of the approvals process DPE sought advice from the Independent Advisory Panel, who in August 2023 recommended the setback be increased from 61 m to a minimum of 120 m.

LW19A has been redesigned to satisfy the approval requirements, with work being undertaken in FY24 to drive the new installation face. The start of LW19A has been delayed until mid-November.

Applications to modify the Development Consent are planned to be submitted in FY24.[23]

12.1.2 DCPP

Various works will continue over the next reporting period, including further structural repairs, guarding compliance, re-sheeting, handrails and ladder repairs and replacements, thickener upgrade, conveyor fire protection systems maintenance, stop motor isolator replacement and cable tray upgrades.

12.1.3 Exploration

Planned exploration activities for FY24 include six exploration boreholes.

Monitoring boreholes related to approvals will continue to be implemented in FY24 in support of ongoing Dendrobium mining operations. Five approvals boreholes are planned which include post-mining monitoring boreholes, a shaft investigation hole and groundwater boreholes proximal to underground workings.

No seismic operations are planned for FY24.

The proposed location of exploration boreholes planned for FY24 are shown in Plan 14.

12.1.4 Construction Activities

The following projects will be progressed in the next reporting period:

[22] As at the date of submitting the Annual Review, LW21 has been completed.
[23] Details not available at end of reporting period pending finalisation of applications and environmental assessments.

- Area 3C ventilation upgrade, including gas management infrastructure installation at Ventilation Shaft 2/3 site.
- Area 3C power upgrade, including power pole and conductor replacement in various areas around Dendrobium Mine.
- Slope stability remediation to address landslip issues in FY23, including the main carpark.
- Surface and yard repairs.
- Surface upgrades including installation of workshop domes and pallet racking.

12.1.5 Environmental Management

12.1.5.1 Weed Management

On-going weed management will continue at KVCLF and KVRL. There will be a renewed focus in FY24 (pending suitable weather) following the significant rainfall in FY22 hampering weed control efforts. Significant progress was made during FY23 with spraying and mulching occurring.

12.1.5.2 Noise Management

Additional noise mitigation is planned to be installed at the Pit Top air compressors following results of noise source auditing.

12.1.5.3 Hydrocarbon and Chemical Management

A self-bunded diesel tank is planned to be installed during FY24. A temporary tank has arrived on site allowing the changeover to progress.

12.1.5.4 Surface Flow Monitoring

Additional surface flow monitoring sites are proposed in catchment watercourses around the Dendrobium mining area. The sites include the install of a low-profile weir and flume-like halfpipe which directs surface flow through a control of known cross-sectional area. This improves the sensitivity of the control from what would have previously been a wide rockbar control.

12.1.5.5 Groundwater Monitoring

Development is planned of the groundwater wells installed at the Dendrobium Pit Top and KVCLF during FY23. Sampling will be undertaken following development. The groundwater monitoring program will be incorporated in the Water Management Plan in the next review.

12.1.5.6 Infrastructure Subsidence Mitigation Measures

Transmission towers located within the LW19A and LW22 areas of subsidence influence will be managed in FY24 using a similar approach to the LW19 mitigation works, in consultation with TransGrid.

12.1.5.7 Environmental Management System

Dendrobium Mine will continue to maintain certification against ISO 14001 in FY24. Environmental Management Plans will be updated and governance reviews undertaken as required.

12.1.6 Rehabilitation

The following activities under the Legacy Sites and Rehabilitation Program are planned for FY24:

- Reporting and close out for the O'Briens Gap Pumphouse.
- Pre-demolition activities for O'Briens Drift including belt removal and power line relocation.
- Planning for commencement of demolition of the O'Brien's Drift Winder Building.

12.1.7 Community

IMC will continue to undertake community engagement and support community initiatives in FY24. This will include, but not be limited to, Kembla Community Visioning Project being facilitated by the Wollongong City Council, general inform on activities from the mine, and supporting community-led events.

12.2 Cordeaux Colliery

During the next reporting period, Cordeaux Colliery mining operations will remain on care and maintenance.

Upgrade of the site's electrical supply aims to be completed in FY24. The upgrade aims to replace ageing infrastructure that is no longer fit for purpose and align the infrastructure with ongoing high voltage maintenance requirements. Works include:

- Installation of a pole-mounted transformer and installation of underground low voltage cabling to the Administration building, Workshop and Communications Huts (pending capital approval). The work is also required to remove electrically powered equipment from a Zone 2 Hazardous Area recently confirmed in a Hazardous Area Audit of site.
- Upgrade of digital reconciliation monitoring system on the diesel tank to better account for fuel-in and fuel-out of the system to assist in monitoring any fuel loss that could be attributed to tank leakage.
- Replacement of Primary Separation Lagoon pump motor starter.
- Replacement of Administration building's internal electrical distribution boards.

Planning for the commencement of demolition activities for the Cordeaux Pit Top Coal Bins and Corrimal No. 3 Coal Bins will progress in FY24.

13. REFERENCES AND ASSOCIATED DOCUMENTS

13.1 References

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality- Volume 1, Chapter 3 (2000).
- Dendrobium Mine Development Consent DA 60-03-2001 (as modified).
- Environment Protection Licence 3241.
- Environment Protection Licence 611.
- IMC, Avon and Cordeaux Reservoirs Dams Safety Notification Area Management, Closure and Contingency Plan.
- IMC, Air Quality Monitoring.
- IMC, Cordeaux Colliery Environmental Management Plan.
- IMC, Dendrobium Area 3C Aboriginal Cultural Heritage Management Plan.
- IMC, Dendrobium Mine Air Quality and Greenhouse Gas Management Plan.
- IMC, Dendrobium Mine Bushfire Management Plan.
- IMC, Dendrobium Mine Environmental Management Strategy.
- IMC, Dendrobium Mine Landscape Management Plan.
- IMC, Dendrobium Mine Lighting and Visual Amenity Management Plan.
- IMC, Dendrobium Mine Noise Management Plan.
- IMC, Dendrobium Mine Pit Top Yard Dust TARP 2021.
- IMC, Dendrobium Mine Traffic Management Plan.
- IMC, Dendrobium Mine Waste Management Plan.
- IMC, Dendrobium Mine Water Management Plan.
- IMC, Dendrobium Mine and Cordeaux Colliery Rehabilitation Management Plan.
- IMC, Swamp Impact, Monitoring, Management and Contingency Plan.
- IMC, Watercourse Impact Monitoring, Management and Contingency Plan, Dendrobium Area 3B.
- JBS&G, Remedial Action Plan - Corrimal No 3 Ventilation Shaft Picton Road, NSW (Rev 3).
- MSEC, End of Panel Subsidence Monitoring Review Report for Dendrobium Longwall 19. MSEC1345 (2023).
- HGEO, 2023. Dendrobium Mine End of Panel groundwater assessment for Longwall 19 (Area 3A) (No. 23214), Report by HGEO Pty Ltd for South32 Illawarra Metallurgical Coal.
- HGEO, Dendrobium Mine – End of Panel Surface Water and Shallow Groundwater Assessment for Longwall 19 (Area 3A). D23215. Report by HGEO Pty Ltd for South32 Illawarra Metallurgical Coal (2023).
- IMC, Watercourse Impact Monitoring, Management and Contingency Plan, Dendrobium Area 3A.IMC, Swamp Impact, Monitoring, Management and Contingency Plan, Dendrobium Area 3A.

IMC, Dendrobium 3B Longwall 19 End of Panel report.Niche, Dendrobium Colliery Longwall 19 End of Panel Report – Aboriginal Cultural Heritage Assessment (2023).

- Niche, 2023. Dendrobium Areas 3A and 3B: Terrestrial Ecology Monitoring Program Annual Report 2022. Prepared for South32 Illawarra Metallurgical Coal. Project number 7290. Dated 25 July 2023.
- Niche, 2021. Dendrobium Areas 3A and 3B: Terrestrial Ecology Monitoring Program Annual Report 2020. Prepared for South32 Illawarra Metallurgical Coal. Project number 5805. Dated 29 April 2021.
- Niche, 2022a. Dendrobium Areas 3A and 3B: Terrestrial Ecology Monitoring Program Annual Report 2021. Prepared for South32 Illawarra Metallurgical Coal. Project number 6639. Dated 28 April 2022.
- NSW Department of Planning and Environment (2015). Annual Review Guideline, Post approval requirements for State Significant Developments, October 2015.
- Dendrobium Mine – Plan for the Future: Coal for Steelmaking – Submissions Report (2020).

13.2 Acronyms used in Annual Review

Acronyms used in the Annual Review are provided in Table 38.

Table 38: Acronyms used in Annual Review

Acronym	Definition	Acronym	Definition
ACARP	Australian Coal Industry Research Program	KVCLF	Kemira Valley Coal Loading Facility
ALS	Airborne Laser Scanner	KVRL	Kemira Valley Rail Line
BACI	Before, After, Control, Impact	KVT	Kemira Valley Tunnel
BCS	Biodiversity, Conservation and Science Division	LDP	Licence Discharge Point
CCL	Consolidated Coal Lease	LJTF	Littlejohn's Tree Frog
CEM	Continuous Emissions Monitoring	LW	Longwall
CH_4	Methane	m	metre
CO_2	Carbon dioxide	MEG	Mining and Exploration Group
CO_2-e	Carbon dioxide equivalent	µS	micro Siemen
CPI	Consumer Price Index	mg	milligram
CV	Calorific Value	ML	Mining Lease or megalitre
CWEA	Coal Wash Emplacement Area	MOP	Mining Operations Plan
DCCC	Dendrobium Community Consultative Committee	Mt	Million tonnes
DCEC	Dendrobium Community Enhancement Committee	NATA	National Association of Testing Authorities
DCEP	Dendrobium Community Enhancement Program	NGER	National Greenhouse and Energy Reporting
DCPP	Dendrobium Coal Preparation Plant	NRAR	Natural Resource Access Regulator
DDG	Dust Deposition Gauge	NSW	New South Wales

DMEP	Dendrobium Mine Extension Project	NWM	North West Mains
DO	Dissolved Oxygen	OEH	Office of Environment and Heritage (now BCS)
DNMS	Directional Noise Monitoring System	OPD	Operational Purpose Deduction
DPE	Department of Planning and Environment[24]	OSS	Offsite Storage Facility
DPIE	Department of Planning, Industry and Environment[25]	PDCE	Post Drainage Capture Efficiency
EA	Environmental Assessment	PEF	Processed engineered fuel
EC	Electrical Conductivity	PEM	Periodic emissions monitoring
EFT	IMC Environmental Field Team	PKCT	Port Kembla Coal Terminal
EIS	Environmental Impact Study	PM_{10}	Particulate matter 10 microns
EoP	End of Panel	PSI	Preliminary Site Investigation
EPL	Environment Protection Licence	RAP	Remedial Action Plan
EP	Extraction Plan	RCE	Rehabilitation Cost Estimate
EPA	Environment Protection Authority	RMP	Rehabilitation Management Plan
EQuIS	Environmental Quality Information System	RNWG	Rail Noise Working Group
FY	Financial Year	RoM	Run of Mine
g	gram	SDS	Safety Data Sheet
GHG	Greenhouse Gas	SIMMCP	Swamp Impact, Monitoring, Management and Contingency Plan

[24] Previously DPIE
[25] Previously Department of Planning and Environment, Department of Planning, Department of Urban Affairs and Planning

GWTP	Grey Water Treatment Plant	SMP	Subsidence Management Plan
HVAS	High Volume Air Sampler	TARP	Trigger Action Response Plan
IAC	Illawarra Access Controller	TSP	Total Suspended Particulate
ICHPL	Illawarra Coal Holdings Pty Ltd	TSI	Targeted Site Investigation
IEA	Independent Environmental Audit	TSR	Total Species Richness
IMC	South32 Illawarra Metallurgical Coal	TSS	Total Suspended Solids
IPC	Independent Planning Commission	UoW	University of Wollongong
ISO	International Standards Organisation	VAM	Ventilation Air Methane
km	kilometre	WTP	Water Treatment Plant
kt	kilotonnes	WIMMCP	Watercourse Impact, Monitoring, Management and Contingency Plan
kV	kilovolt		

13.3 Management Plans

The Management Plans required by the Dendrobium Mine Development Consent DA 60-03-2001, EPL 3241 and EPL 611 and their status are provided in Table 39.

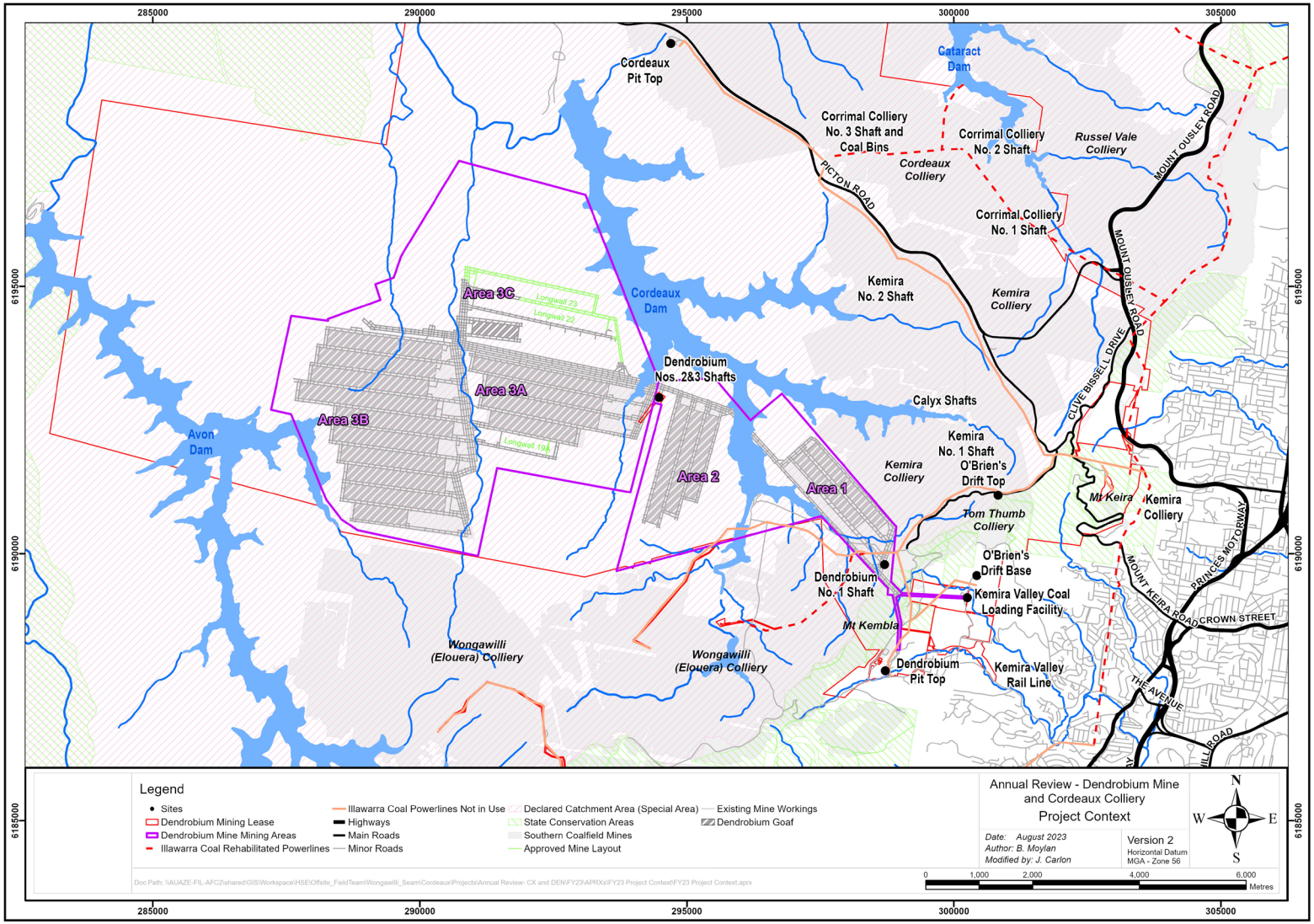
Table 39: Management Plans

Management Plan	Approved Date [26]	Next Review
Air Quality and Greenhouse Gas Management Plan	9/08/2023	1/08/2026
Bushfire Management Plan	18/08/2021	18/08/2024
Environmental Management Strategy	1/08/2023	1/08/2026
Landscape Management Plan	10/08/2021	1/08/2024
Lighting and Visual Amenity Management Plan	15/05/2023	6/03/2026
Noise Management Plan	19/09/2022	1/08/2025
Pollution Incident Response Management Plan EPL 3241	16/02/2023	30/11/2023
Pollution Incident Response Management Plan EPL 611	25/01/2023	24/11/2024
Rehabilitation Management Plan: Dendrobium Mine and Cordeaux Colliery	30/06/2023	30/06/2025
Traffic Management Plan	29/05/2021	1/04/2024
Waste Management Plan	1/06/2021	1/06/2024
Water Management Plan	9/08/2023	4/08/2026

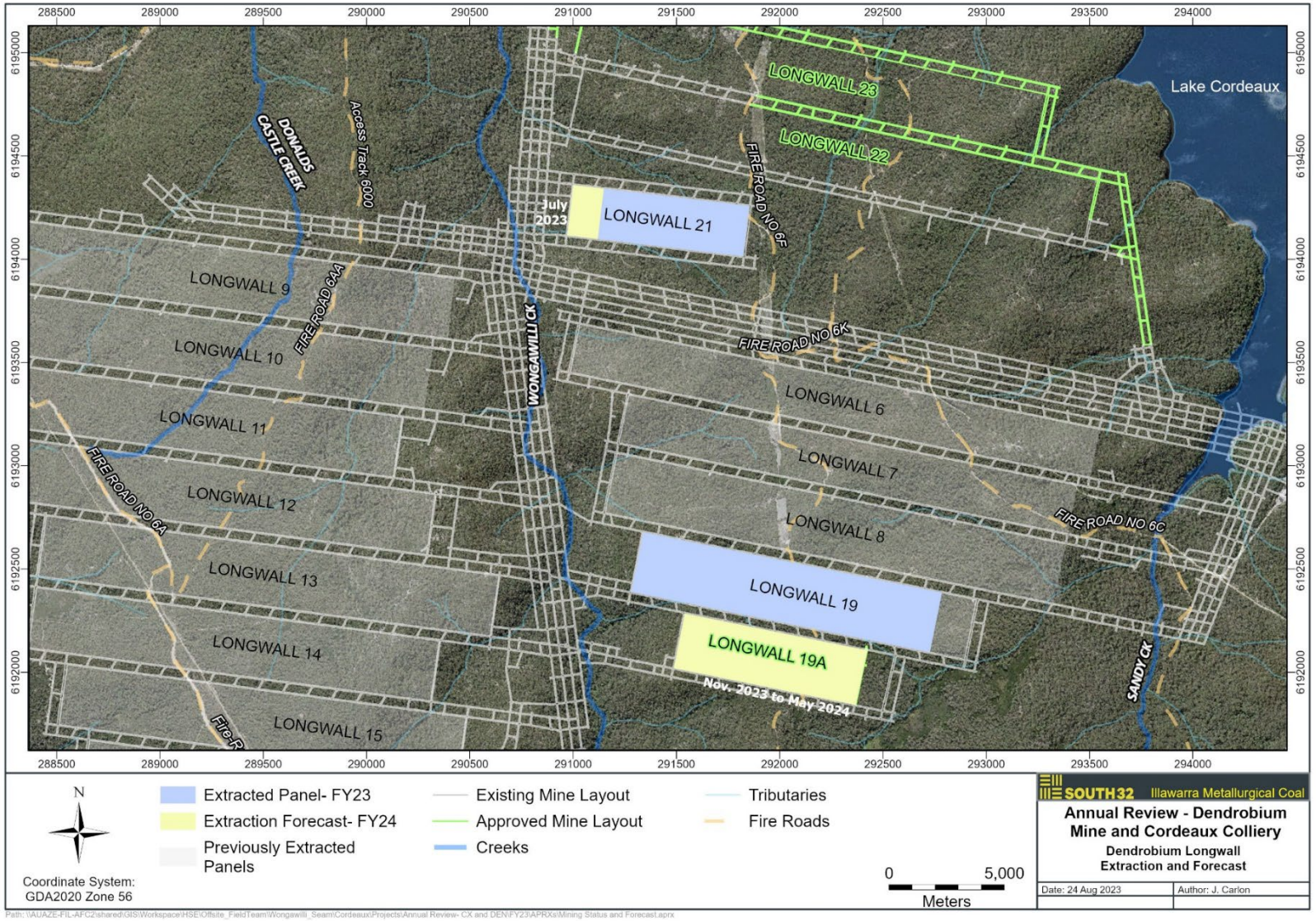
[26] Approval date is either the date approved by the Department (as applicable) or internally (where Department approval not required).

14. PLANS

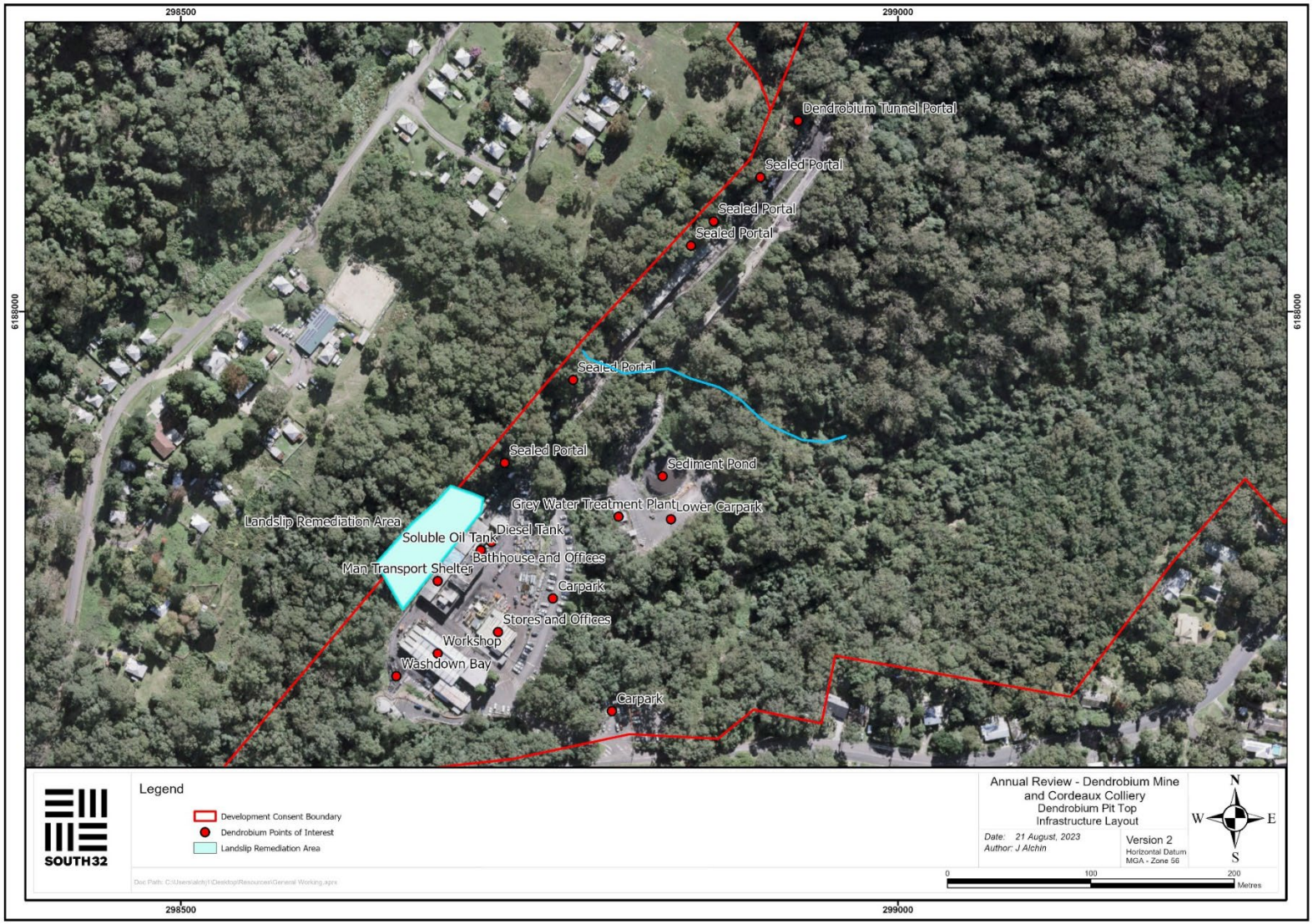
Plan 1: Location of Mining Domain



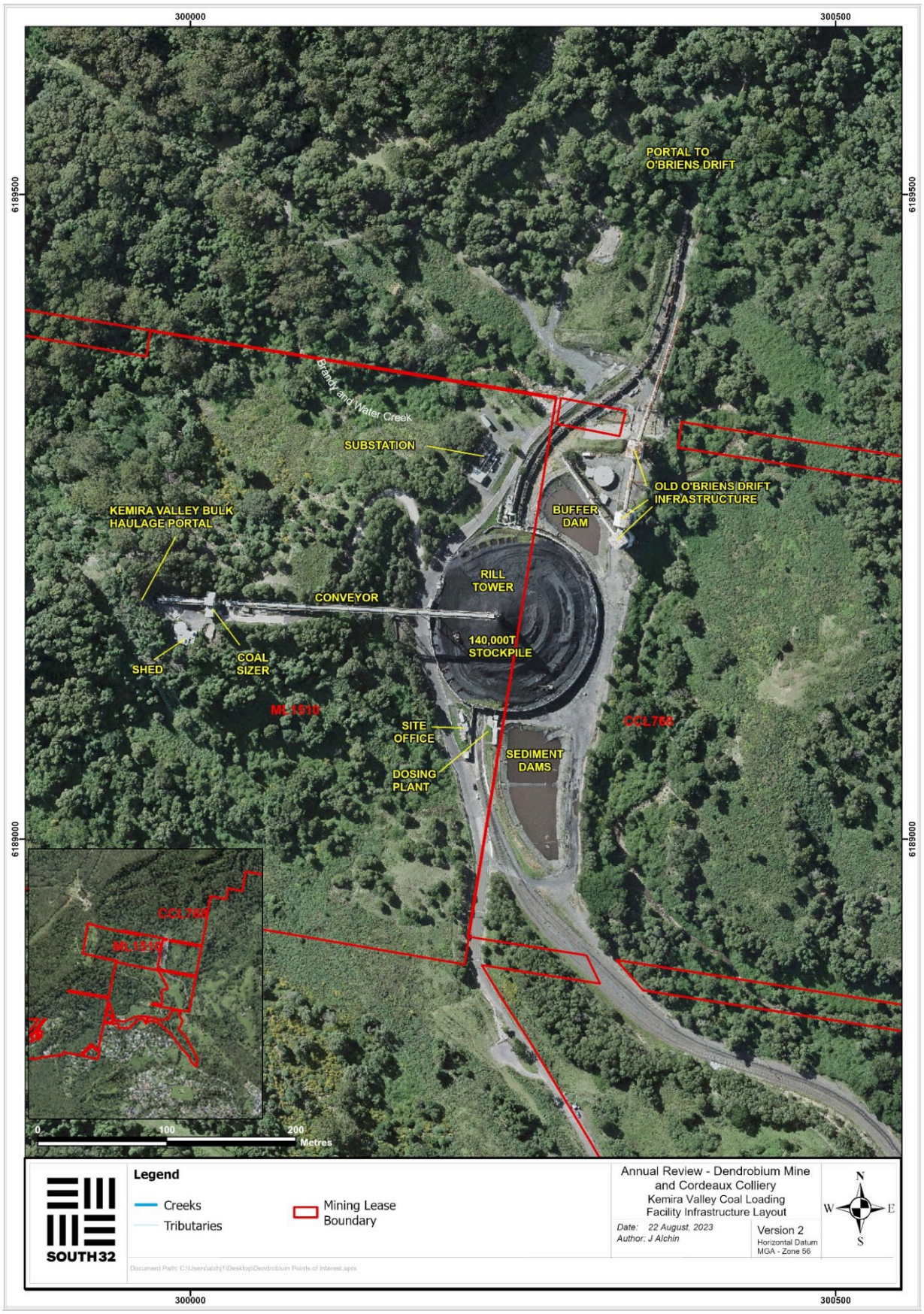
Plan 2: Longwall Status at end of FY23



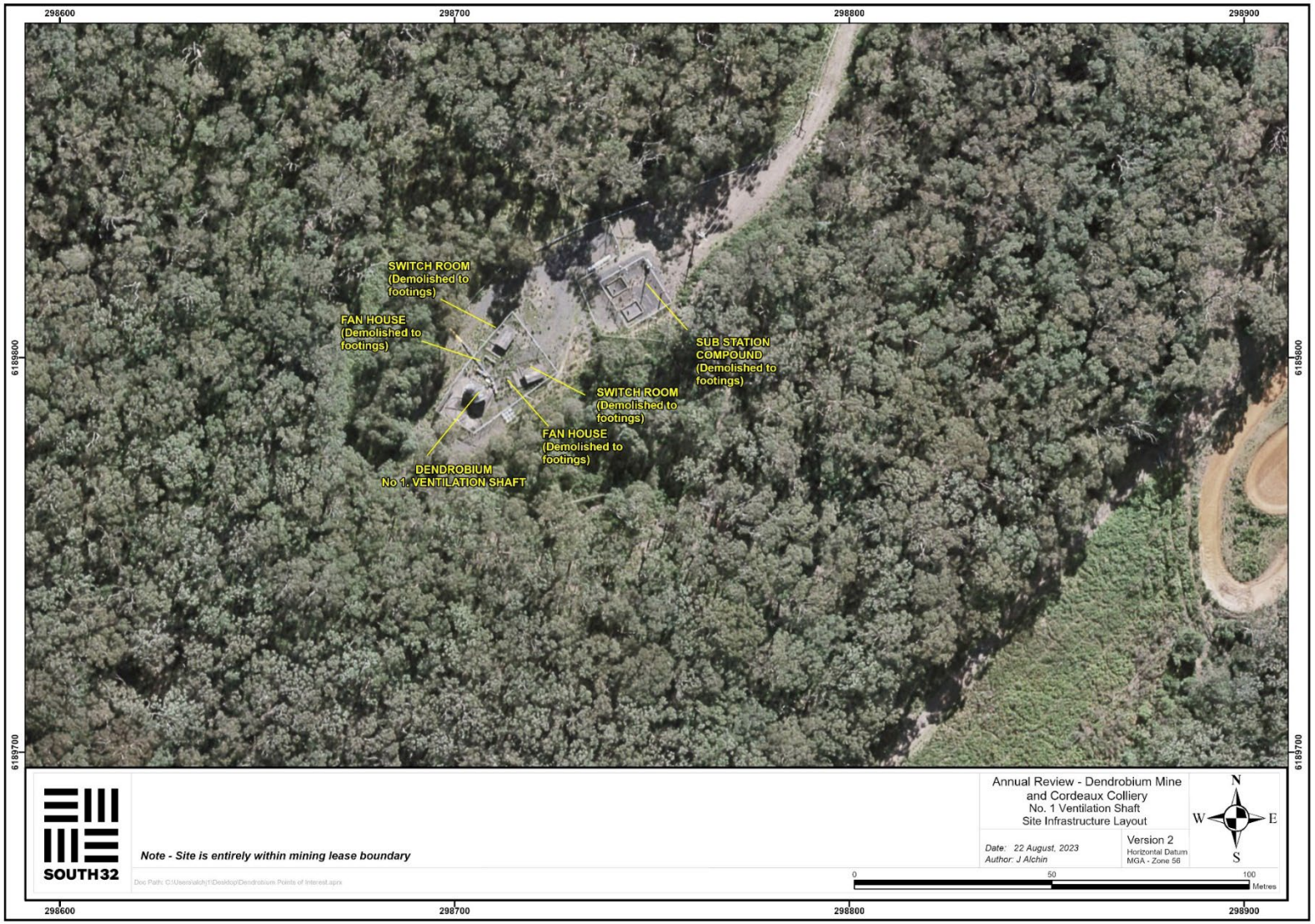
Plan 3: Site Layout - Dendrobium Mine Pit Top



Plan 4: Site Layout - Kemira Valley Coal Loading Facility



Plan 5: Site Layout - No. 1 Ventilation Shaft



Plan 6: Site Layout - No. 2 and 3 Ventilation Shaft

Plan 7: Site Layout – Proposed Gas Management Infrastructure

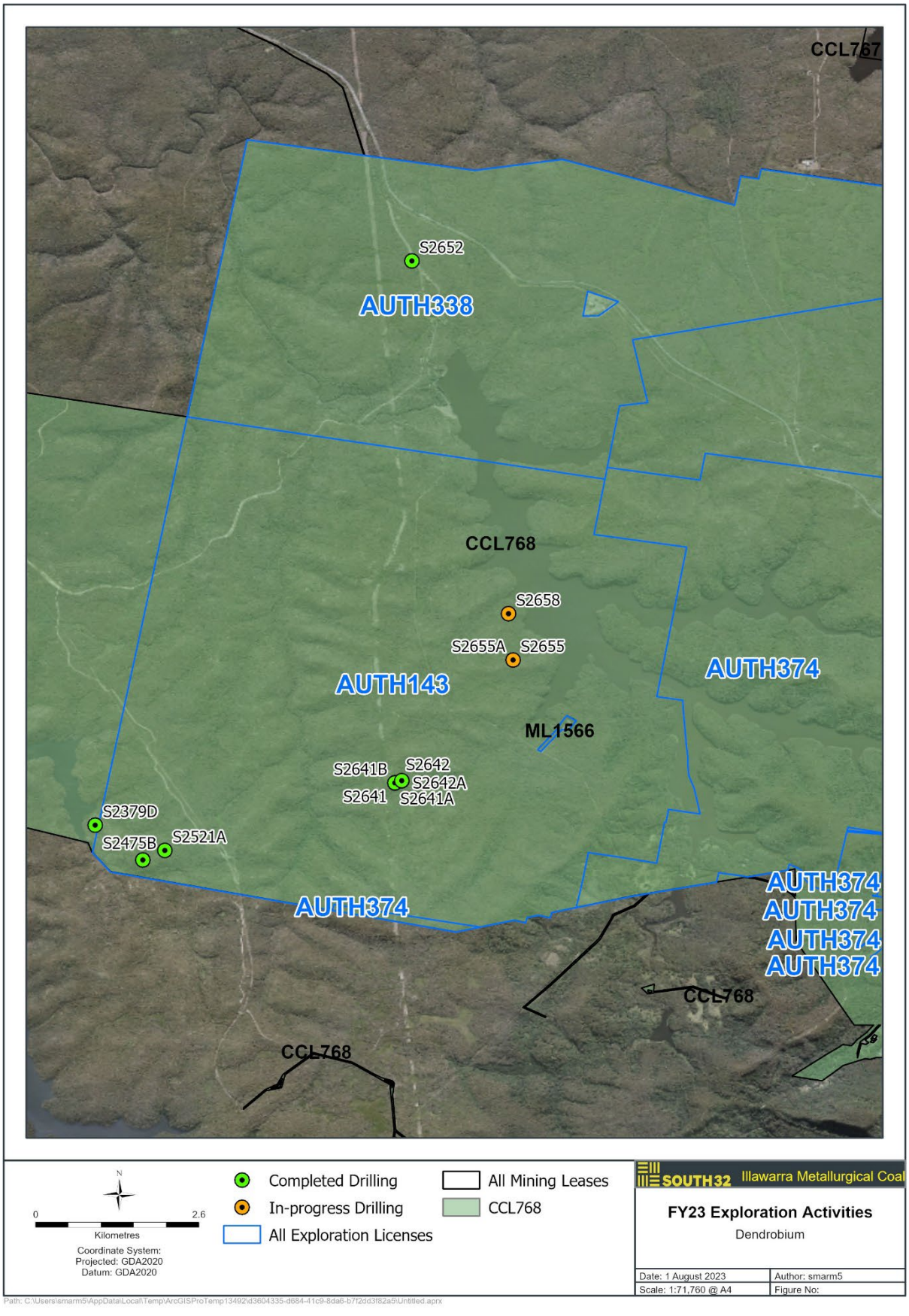
Source: Geoscience Australia (2006); Department of Industry (2018); Department Finance, Services & Innovation (2018); South32 (2021)

LEGEND
- Mining Lease (ML 1566)
- Modification Component Indicative Location
- Area to be Cleared
- Asset Protection Zone - Vegetation Management
- Vegetation Management

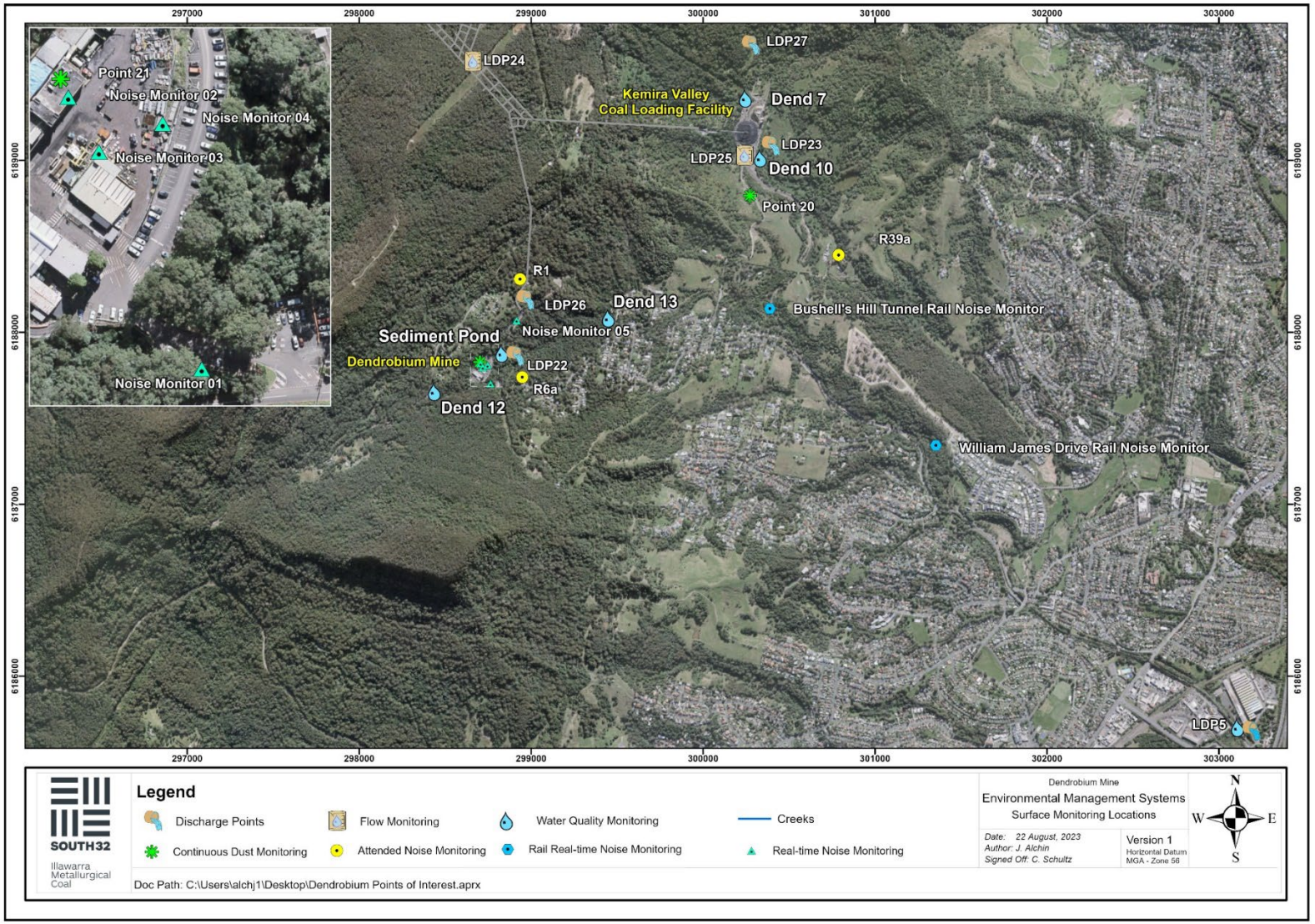
DENDROBIUM MINE

Dendrobium - Gas Management Infrastructure General Arrangement

Plan 8: Exploration Activities - Dendrobium Mine - FY23

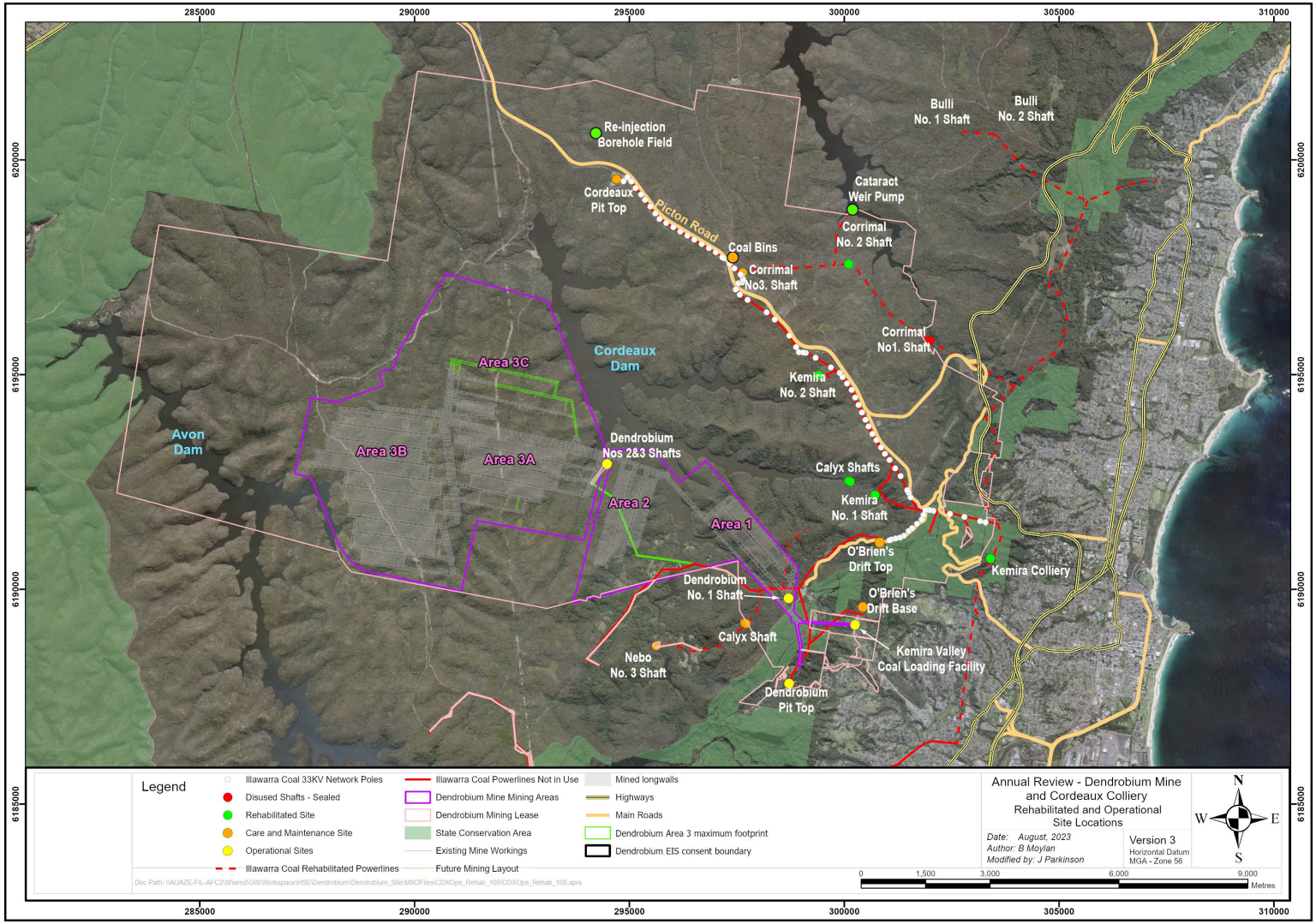


Plan 9: Monitoring Locations - Dendrobium Mine Pit Top

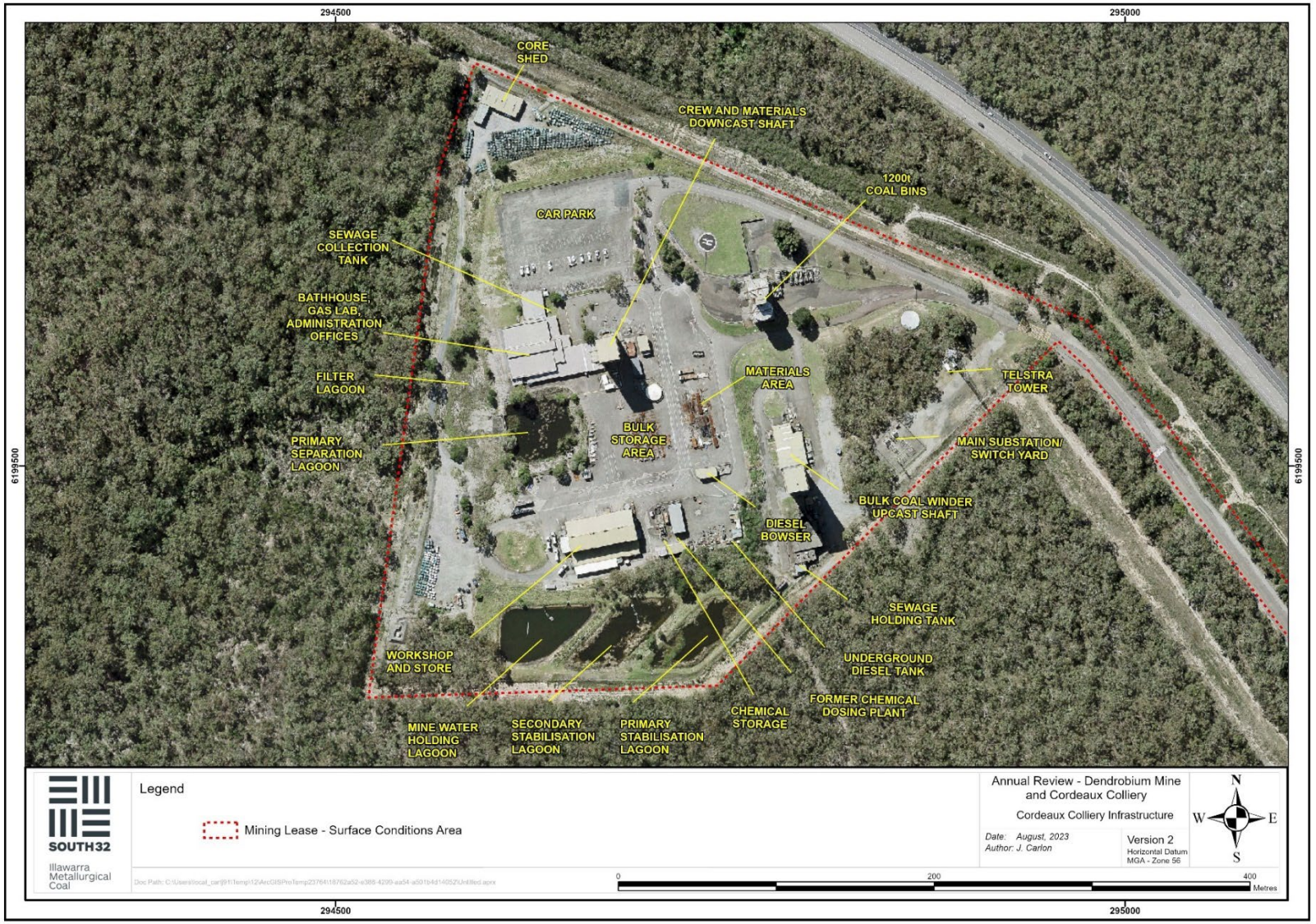


Plan 10: Monitoring Locations – Ventilation Shaft 2/3

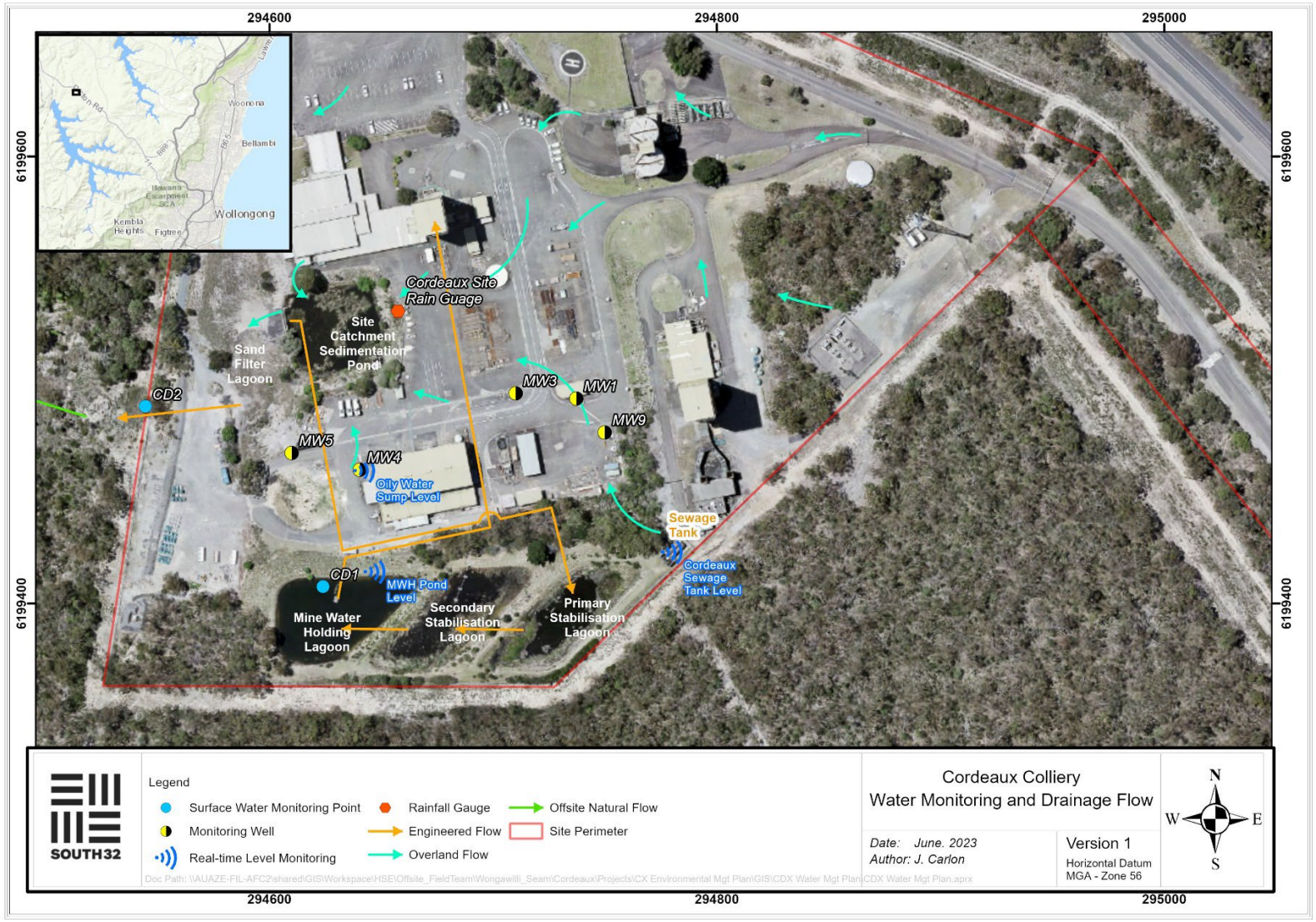
Plan 11: Operational and Rehabilitation Areas



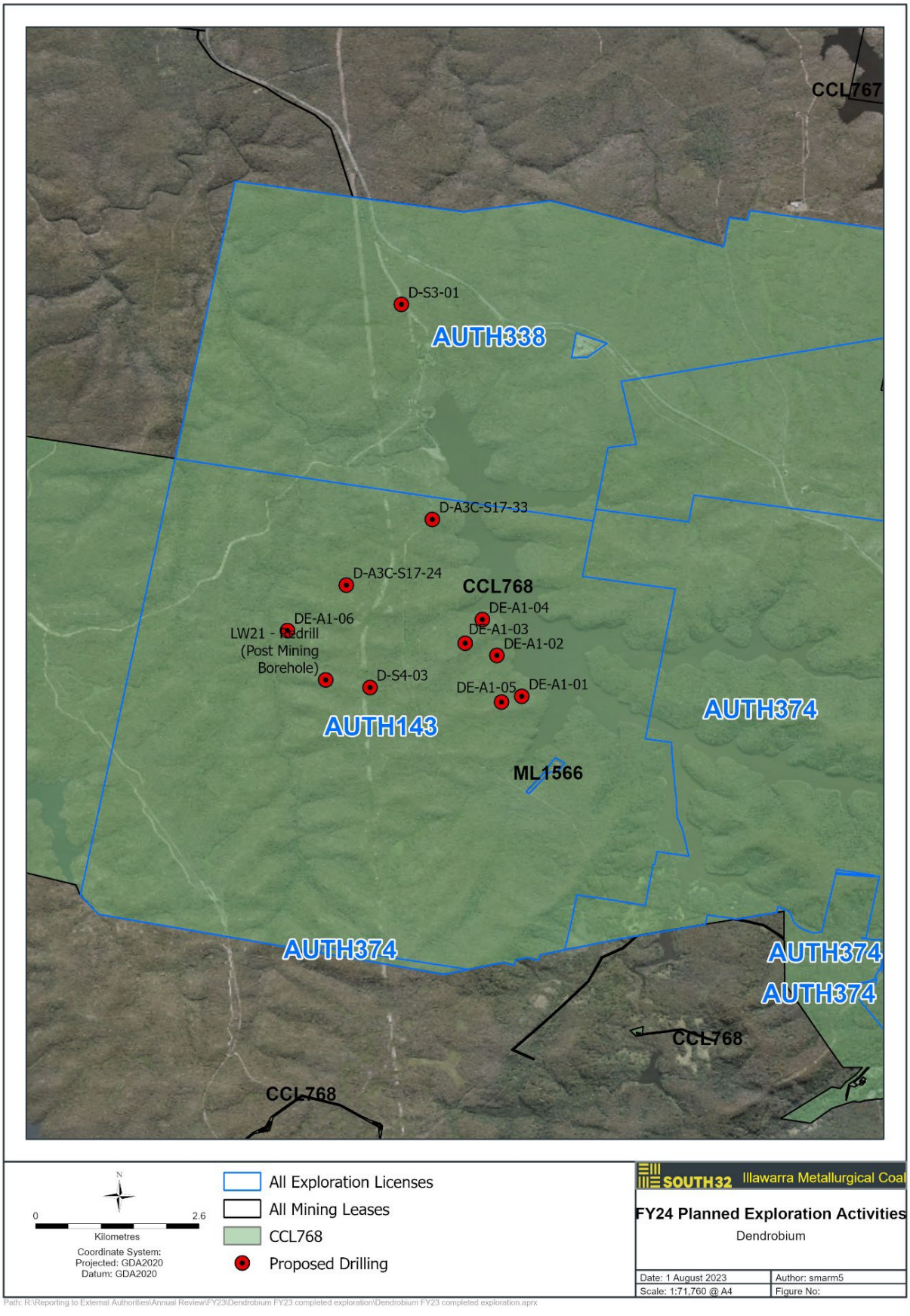
Plan 12: Site Layout - Cordeaux Colliery



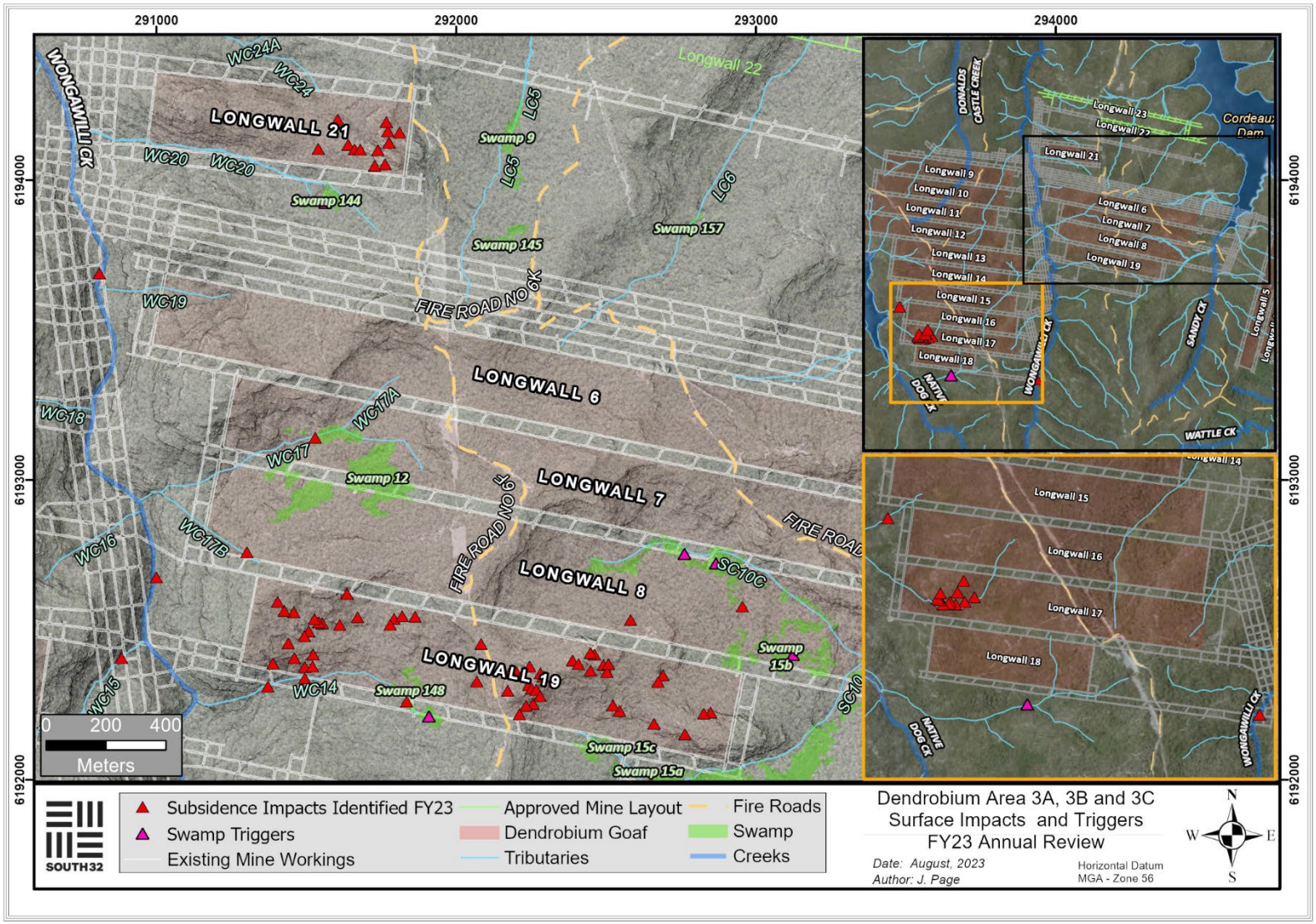
Plan 13: Monitoring Locations - Cordeaux Colliery



Plan 14: Planned Exploration Activities - CCL 768 - FY24



Plan 15: Subsidence impacts observed during FY23



15. APPENDICES

Appendix 1: EPL 3241 Annual Return - FY23

Annual Return

DENDROBIUM COAL PTY LTD

Licence 3241

A. Statement of Compliance - Licence Details

ALL Licence holders must check that the Licence details in Section A are correct.

If there are changes to any of these details, **you must advise Environment Protection Authority (EPA) and apply as soon as possible for a variation to your Licence or for a Licence transfer.**

Licence variation and transfer application forms are available on the EPA website at: http://www.epa.nsw.gov.au/licensing-and-regulation/licensing or from regional offices of the EPA, or by contacting by telephone 02 9995 5700.

If you are applying to vary or transfer your Licence, you must still complete and submit this Annual Return.

A1. Licence holder

Licence number : 3241

Licence holder : DENDROBIUM COAL PTY LTD

Trading name *(if applicable)* :

ABN : 85 098 744 088

ACN :

Reporting period : From: 1-7-2022 To: 30-6-2023

A2. Premises to which Licence Applies (if applicable)

Common name (if any) : DENDROBIUM MINE

Premises : CORDEAUX ROAD MOUNT KEMBLA 2526 NSW

A3. Activities to which Licence Applies

Mining for coal

Coal works

A4. Other Activities (if applicable)

A5. Fee-Based Activity Classifications

Note that the fee based activity classification is used to calculate the administrative fee.

Fee-based activity	Activity scale	Unit of measure
Coal works	> 2,000,000.00 - 5,000,000.00	T annual handing capacity
Mining for coal	> 3,500,000.00 - 5,000,000.00	T annual production capacity

A6. Assessable Pollutants (if applicable)

Note that the identification of assessable pollutants is used to calculate the **load-based fee.**
The following assessable pollutants are identified for the fee-based activity classifications in the licence:

B. Monitoring and Complaints Summary

B1. Number of Pollution Complaints

Pollution Complaint Category	Complaints
Air	0
Water	0
Noise	19
Waste	0
Other	5
Total complaints recorded by the licensee during the reporting period	**24**

B2. Concentration Monitoring Summary

For each concentration monitoring point identified in your licence, details are displayed below. If concentration monitoring is not required by your licence, **no data** will appear below.
If data was provided from an uploaded file, the file name will be displayed below instead of any data.
Note that this does not exclude the need to conduct appropriate concentration monitoring of assessable pollutants as required by load-based licensing (if applicable).

Discharge Point 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

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Arsenic	milligrams per litre	12	12	0.002	0.028	0.116
Conductivity	microsiemens per centimetre	12	12	1510	4048	10600
Copper	milligrams per litre	12	12	<0.001	0.001	0.002
Nickel	milligrams per litre	12	12	0.011	0.120	0.444

Oil and Grease	milligrams per litre	12	12	<5	<5	<5
pH	pH	12	12	8.03	8.23	8.69
Total suspended solids	milligrams per litre	12	12	<5	8	16
Zinc	milligrams per litre	12	12	0.020	0.175	0.311

Monitoring Point 20

PM10 monitoring, Photometer located at the Kemira Valley coal loading facility. lat. long. -34.423107 150.826605

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
PM10	micrograms per cubic metre	Continuous	Continuous	0.18	4.69	25.36

Monitoring Point 21

PM10 monitoring, Photometer located at the Dendrobium mine pit top. lat. long. -34.431440 150.809213

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
PM10	micrograms per cubic metre	Continuous	Continuous	0.46	5.17	25.00

Discharge & Monitoring Point 29

Discharge to waters

Discharge quality monitoring, Piped discharge outlet from north sedimentation pond at Vent Shaft 2 & 3. Lat. Long. -34.384071 150.764316

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Total suspended solids	milligrams per litre	6	6	<5	18	35
Turbidity	nephelometric turbidity units	6	6	1.1	32	74

Discharge & Monitoring Point 31

Discharge to waters

Discharge quality monitoring, Piped discharge outlet from south sedimentation pond at Vent Shaft 2 & 3. Lat. Long. -34.385361 150.763436

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Total suspended solids	milligrams per litre	5	5	<5	11.8	19
Turbidity	nephelometric turbidity units	5	5	2.2	15.02	53.3

B3. Volume or Mass Monitoring Summary

For each volume or mass monitoring point identified in your licence, details are displayed below. If volume or mass monitoring is not required by your licence, **no data** will appear below.
If data was provided from an uploaded file, the file name will be displayed below instead of any data.
Note that this does not exclude the need to conduct appropriate volume or mass monitoring of assessable pollutants are required by load-based licensing (if applicable).

Monitoring Point 24

Volume Monitoring, Pipeline dewatering underground water storage area. lat. long. -34.415564 150.809602

Unit of measure	Frequency	No. of measurements made	Lowest result	Mean result	Highest result
megalitres per day	Continuous	Continuous	0.77	10.45	12.77

Monitoring Point 25

Volume Monitoring, Pipeline discharge for Kemira Valley sedimentation ponds. lat. long. -34.421191 150.826841

Unit of measure	Frequency	No. of measurements made	Lowest result	Mean result	Highest result
megalitres per day	Continuous	Continuous	0	0.23	2.17

C. Statement of Compliance - Licence Conditions

C1. Compliance with Licence Conditions

Were all conditions of the licence complied with (including monitoring and reporting requirements)?	**Yes**

D. Statement of Compliance - Load Based Fee Calculation

If you are not required to monitor assessable pollutants by your licence, **no data** will appear below.

If assessable pollutants have been identified on your licence, the following worksheets for each assessable pollutant will determine your load based fee for the licence fee period to which this Annual Return relates.

Loads of assessable pollutants must be calculated using any of the methods provided in EPA's Load Calculation Protocol for the relevant activity. A Load Calculation Protocol would have been already sent to you with your licence. If you require additional copies, you can download the Protocol from the EPA's website or you can contact us on telephone 02 9995 5700.

You are required to keep all records used to calculate licence fees for four years after the licence fee was paid or became payable, whichever is the later date.

E. Statement of Compliance - Requirement to Prepare PIRMP

Have you prepared a Pollution Incident Response Management Plan (PIRMP) as required under section 153A of the Protection of the Environment Operations (POEO) Act 1997?	**Yes**
Is the PIRMP available at the premises?	**Yes**
Is the PIRMP available in a prominent position on a publicly accessible website?	**Yes**
Address of the web page where the PIRMP can be accessed ▼	
https://www.south32.net/what-we-do/our-locations/australia/illawarra-metallurgical-coal/documents	
Has the PIRMP been tested?	**Yes**
The PIRMP was last tested on	**11-10-2022**
Has the PIRMP been updated?	**Yes**
The PIRMP was last updated on	**16-2-2023**
Number of times the PIRMP was activated in this reporting period?	**0**
The PIRMP was activated on	

F. Statement of Compliance - Requirement to Publish Pollution Monitoring Data

Are there any conditions attached to your licence that require pollution monitoring to be undertaken as required under section 66(6) of the Protection of the Environment Operations (POEO) Act 1997?	**Yes**

Do you operate a website?	**Yes**
Is the pollution monitoring data published on your website in accordance with the EPA's written requirements for publishing pollution monitoring data?	**Yes**
Address of the web page where the pollution monitoring data can be accessed ▼	
https://www.south32.net/what-we-do/our-locations/australia/illawarra-metallurgical-coal/documents	

G. Statement of Compliance - Environment Management System and Practices

Do you have an ISO 14001 certified Environmental Management System (EMS) OR any other system that EPA considers is equivalent to the accountability, procedures, documentation and record keeping requirements of an ISO 14001 certified EMS?	**Yes**

When was the last check (As per ISO 14001) of the EMS completed?	**19-6-2023**
Were there any non-conformances related to environmental issues identified in the last check of the EMS?	**No**
If there were non-conformances identified, were these non-conformances rectified?	

H. Signature and Certification

This Annual Return may only be signed by person(s) with legal authority to sign it as set out in following categories: an Individual, a Company, a Public authority or a Local council.

It is an offence under section 66 of the Protection of the Environment Operations Act 1997 to supply any information in this form that is false or misleading in a material respect, or to certify a statement that is false or misleading in a material respect. There is a maximum penalty of $250,000 for a corporation and $120,000 for an individual.

I/We

- declare that the information in the Monitoring and Complaints Summary in Section B of this Annual Return application is correct and not false or misleading in a material respect, and
- certify that the information in the Statement and Compliance in sections A, C, D, E, F, G and H and any other pages attached to Section C is correct and not false or misleading in a material respect.

Signed by: Delegate of Company

Name	Chris Schultz
Position	Superintendent Environment
Email Address	Chris.Schultz1@south32.net

Phone Number	0407888423

Signature	
Name	
Position	
Date	/ /

Declaration

I declare that the information in the Monitoring and Complaints Summary in section B of this Annual Return is correct and not false or misleading in a material respect, and

I certify that the information in the Statement of Compliance in section A,C,D,E,F and G and any pages attached to Section C is correct and not false or misleading in a material respect.

Appendix 2: Rehabilitation Cost Estimates

Rehabilitation cost estimate provided only for the Resources Regulator. The Rehabilitation Cost estimate is commercial in nature.

Please contact the Resources Regulator or IMC representative for further information.

Appendix 3: Dendrobium Mine Development Consent Condition Compliance Report

Condition of Consent	Status	Comments
SCHEDULE 2: ADMINISTRATIVE CONDITIONS		
Obligation to Minimise Harm to the Environment		
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.	Compliant	Reasonable and feasible measures were implemented over the reporting period to prevent/minimise harm to the environment.
Terms of Approval		
2. The Applicant must carry out the development generally in accordance with the: (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: • Primary Submission (the Dendrobium Project, dated 30 July 2001); • Submission in Reply (the Dendrobium Project, undated); and • Environmental Effects of Subsidence Associated with the Dendrobium Project, prepared by National Environmental Consulting Services and dated August 2001; (b) Modification Application dated 12 February 2002 and supporting information dated 27 January 2002; (c) Modification Application and supporting information dated 24 May 2002 and additional supporting information dated 14 June 2002; (d) Modification Application and Statement of Environmental Effects for the Dendrobium Coal Sizer, prepared by Olsen Environmental Consulting and dated March 2005; (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 Submissions dated 1 November 2007 and associated Statement of Commitments dated 28 November 2007 (see Appendix 3); (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.	Compliant	The listed documentation reflects changes to the development as a result of consultation with Authorities and the community. Management Plans and associated documentation reflect these changes and requirements.
2A. The Applicant must carry out the development in accordance with the conditions of this consent.	Non-compliant	See Condition 1 of Schedule 4.
2B. The Applicant must carry out the development generally in accordance with the development layout shown in Appendix 2.	Compliant	Gas management infrastructure site activities have been undertaken generally in accordance with the site layout.
3. If there is any inconsistency between the above documents, the most recent document must prevail to the extent of the inconsistency. However, the conditions of this consent must prevail to the extent of any inconsistency.	Compliant	Document precedence is applied where required.

Condition of Consent	Status	Comments
4. The Applicant must comply with any reasonable and feasible requirement/s of the Secretary arising from the Department's assessment of: (a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with the conditions of this consent; (b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with the conditions of this consent; and (c) the implementation of any actions or measures contained in these documents.	Compliant	Requirements have been complied with where reasonable and feasible.
Limits on Consent		
5. Mining operations may take place in the mining area until 31 December 2030. *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.*	Compliant	This date is in the future.
6. The Applicant must not extract more than 5.2 million tonnes of RoM coal a year from the mining area.	Compliant	Less than 5.2 million tonnes was extracted during the reporting period. Mining plans and production forecasts are developed on this basis.
7. The Applicant must only transport coal from the surface facilities by rail.	Compliant	Coal extracted from Dendrobium Mine was only transported via the Kemira Valley Rail Line during the reporting period.
Staged Submission of Management Plans/Monitoring Programs		
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	Plans required under the consent are submitted as required. No staged management plans were submitted.
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.	Compliant	All required management plans have been implemented and are updated as required and approved by the Department as per DPE processes.
Structural Adequacy		
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	All construction activities have been undertaken in accordance with the requirements of the

Condition of Consent	Status	Comments
Notes: *Under Part 6 of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works. Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 sets out the requirements for the certification of the development.*		BCA where applicable.
Demolition		
11. The Applicant must ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures*, or its latest version.	Compliant	There was no demolition during the reporting period.
Operation of Plant and Equipment		
12. The Applicant must ensure that all plant and equipment used on site is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Compliant	A maintenance management system is used to verify that all plant and equipment used on site is maintained in a proper and efficient condition. Operators are trained and assessed as competent. The site introduction process captures and records all relevant information for plant and equipment that is to be used either on the surface or underground.
Community Enhancement		
13. 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. These funds must be: (a) administered and expended in accordance with procedures which are to the satisfaction of WCC and the Secretary; (b) provided by 30 September each year over the life of the consent; (c) based on saleable coal production in the previous financial year; and (d) indexed in accordance with the CPI, with April 2005 used as the commencement date for indexation calculations. Any dispute over the operation of this fund must be referred to the Secretary for resolution.	Compliant	Payment was made for FY23 in accordance with requirements.
Costs of Management Measures		
14. 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	Compliant	Management measures were undertaken as required and at the cost of IMC where not recoverable by a third party.

Condition of Consent	Status	Comments
supplementary waters and monitoring of the effectiveness of the works, as determined by the Secretary.		
Strategic Biodiversity Offsets		
15. 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. If the Secretary accepts such an offset under this condition, the Secretary must issue a written statement to the Applicant advising: (a) the details of the proposed offset land; (b) the offset requirements that are being met; (c) the conservation values that have been relied upon to meet the offsetting requirements; and (d) that in the opinion of the Secretary: (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 (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. 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). 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). 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	Compliant	A biodiversity offset area has been established and approved by the Secretary.
SCHEDULE 3: SPECIFIC ENVIRONMENTAL CONDITIONS – MINING AREA		
SUBSIDENCE *Note: These conditions should be read in conjunction with the Statement of Commitments.*		
Watercourse Impact Management		
1. The Applicant must ensure that, as a result of the development: (a) no rock fall occurs at Sandy Creek Waterfall or from its overhang; (b) the structural integrity of the waterfall, its overhang and its pool are not impacted;	Compliant	A SMP for Area 3A was approved that meets these requirements.

Condition of Consent	Status	Comments
(c) cracking in Sandy Creek within 30 m of the waterfall is of negligible environmental and hydrological consequence; and (d) negligible diversion of water occurs from the lip of the waterfall to the satisfaction of the Secretary.		
2. 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. *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.*	Compliant	A SMP for Area 3A was approved that meets these requirements. The approved SMP for Area 3B also addresses potential impacts on Wongawilli Creek. Longwall panels are aligned, where possible, to minimise impacts to watercourses.
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	Potential subsidence impacts are covered in the relevant SMP.
4. 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: (a) demonstrate how the subsidence impact limits in conditions 1 - 3 are to be met; (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; (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; (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; (e) address third and higher order streams individually but address first and second order streams collectively; (f) be prepared in consultation with BCS, WaterNSW and Resources Regulator; (g) incorporate means of updating the plan based on experience gained as mining progresses; (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	Compliant	The Watercourse Impact Monitoring, Management and Contingency Plan was incorporated into the Area 3A and 3B SMPs and is available on the IMC website.

Condition of Consent	Status	Comments
(i) be implemented to the satisfaction of the Secretary. *Notes:* *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.* *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.*		
Swamp Impact Management		
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.	Compliant	Subsidence management measures for Swamp 15a are included in the SMP for Area 3A.
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 Swamp Impact Monitoring, Management and Contingency Plan to the satisfaction of the Secretary. Each such Plan must: (a) demonstrate how the subsidence impact limits in condition 5 are to be met; (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; (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; (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; (e) address headwater and valley infill swamps separately and address each swamp individually; (f) be prepared in consultation with BCS, WaterNSW and Resources Regulator; (g) incorporate means of updating the plan based on experience gained as mining progresses; (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 (i) be implemented to the satisfaction of the Secretary. *Notes:* *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.*	Compliant	The Swamp Impact Monitoring, Management and Contingency Plan has been incorporated into the Area 3A and 3B SMPs. 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.

Condition of Consent	Status	Comments
Requirements under paragraphs (a) and (b) relate only to the Swamp Impact Monitoring, Management and Contingency Plan for Area 3A.		
Subsidence Management Plans		
7. 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: (a) integrate ongoing management of Areas 1 and 2; (b) integrate the Watercourse and Swamp Impact Monitoring, Management and Contingency Plans required under conditions 4 and 6; (c) include monitoring of subsidence effects; (d) include a WaterNSW Assets Protection Plan; (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: landscape (including cliffs and steep slopes); groundwater (see condition 13); terrestrial flora and fauna and ecology (including all threatened species assessed as being likely to be significantly affected by the development and their habitats); Aboriginal and other cultural heritage (see condition 12); and electrical, communications and other infrastructure; (f) be prepared in consultation with BCS, WaterNSW and Resources Regulator; (g) be approved prior to the carrying out of any underground mining operations that could cause subsidence in the relevant Area; and (h) be implemented to the satisfaction of the Secretary and the Resources Regulator. *Notes:* *The WaterNSW Assets Protection Plan required under this condition must also be prepared and implemented to the satisfaction of the WaterNSW.* *The contingency plans required under paragraph (e) must address remediation (as appropriate) and be based on a TARP structure.*	Compliant	SMPs that meet these requirements have been and will be submitted as required. These SMPs are available on the IMC website.
8. The SMPs prepared under condition 7 for Areas 3B and 3C must: (a) include a mine plan for the relevant Area; (b) include a detailed subsidence impact assessment, clearly setting out all predicted subsidence effects, subsidence impacts and environmental consequences; (c) include a minimum of 2 years of baseline data, collected at appropriate frequency and scale, for all significant natural features; (d) identify and assess the significance of all natural features located within 600 m of the edge of secondary extraction; (e) distinguish between, clearly describe and adequately quantify all subsidence effects, subsidence impacts and environmental consequences; (f) propose limits on subsidence impacts and environmental consequences to be applied within the relevant Area; (g) be otherwise prepared in accordance with any guidelines for SMPs developed by the Department and/or Resources Regulator;	Compliant	SMPs are prepared in line with this condition.

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(h) be approved prior to the carrying out of any underground mining operations that could cause subsidence in the relevant Area; and (i) be implemented to the satisfaction of the Secretary and the Resources Regulator. *Note: In approving an SMP, the Secretary may impose conditions containing subsidence impact limits (similar to conditions 1- 3 & 5), subsidence management mechanisms (similar to conditions 4 & 6) or other conditions.*		
End of Panel Reporting		
9. Within 4 months of the completion of each longwall panel, or as otherwise permitted by the Secretary, the Applicant must: (a) prepare an end-of-panel report: reporting all subsidence effects (both individual and cumulative) for the panel and comparing subsidence effects with predictions; describing in detail all subsidence impacts (both individual and cumulative) for the panel; discussing the environmental consequences for watercourses, swamps, water yield, water quality, aquatic ecology, terrestrial ecology, groundwater, cliffs and steep slopes; and comparing subsidence impacts and environmental consequences with predictions; and (b) submit the report to the Department, Resources Regulator, WaterNSW, BCS, DPE Water and any other relevant agency to the satisfaction of the Secretary.	Compliant	End of Panel Reports for Longwalls 6, 7, 8, 9, 10, 11,12, 13, 14, 15, 16, 17, 18 and 19[27] have been submitted in accordance with the timing of this condition.
10. 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. *Note: Conditions 9 and 10 apply to Area 2, as well as to Areas 3A, 3B and 3C.*	Compliant	A summary of subsidence effects, impacts and environmental consequences is included in the Annual Review.
Subsidence Expert Assessments		
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.	Compliant	IMC has paid the reasonable costs for engagement of independent experts by the Department as required.
ABORIGINAL HERITAGE		
12. The SMPs prepared under condition 7 must include an Aboriginal Heritage Plan, which must include a: (a) description of known Aboriginal heritage sites; (b) protocol for the ongoing consultation and involvement of the Aboriginal community in the conservation and management of Aboriginal heritage; (c) description of the measures that would be implemented to protect Aboriginal sites generally, including measures that would	Compliant	The Aboriginal Heritage Plan has been incorporated into SMPs as required.

[27] Submitted July 2023.

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be implemented to secure, analyse and record sites at risk of subsidence; (d) description of the measures that would be implemented to protect Aboriginal site 52-2-1646, including: a full recording and assessment of the site's rock art; a more detailed subsidence assessment for the site; 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 (e) description of the measures that would be implemented if any new Aboriginal objects or skeletal remains are discovered during the development.		
GROUNDWATER MONITORING PROGRAM		
13. The SMPs prepared under condition 7 must include a Groundwater Monitoring Program, which must include: (a) proposals to develop a detailed regional and local groundwater model, with special reference to flows to and from nearby water storages; (b) detailed baseline data to benchmark the natural variation in groundwater levels, yield and quality; (c) groundwater impact assessment criteria; (d) a program to monitor the impact of the development on: groundwater levels, yield and quality (particularly any potential loss of flow to, or flow from, WaterNSW water storages); coal seam aquifers and overlying aquifers; and groundwater springs and seeps; and (e) consideration of the requirements of the latest version (or subsequent replacement) of WaterNSW's *The Design of a Hydrological and Hydrogeological Monitoring Program to Access the Impacts of Longwall Mining in SCA Catchment*.	Compliant	The Groundwater Monitoring Program has been incorporated into SMPs as required. A Groundwater Monitoring and Modelling Plan is also in place.
ENVIRONMENTAL OFFSETS		
14. 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: (a) be submitted to the Secretary for approval by 30 April 2009; (b) be prepared in consultation with WaterNSW; (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.	Compliant	This offset was accepted by WaterNSW on 10 February 2009.
SCHEDULE 4: SPECIFIC ENVIRONMENTAL CONDITIONS – SURFACE FACILITIES		
NOISE		
Noise Impact Assessment Criteria		
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 must be the criteria applying at the nearest listed residence.	Non-compliant	Noise monitoring is undertaken in accordance with the approved Noise Management Plan. A summary of results is provided via the Dendrobium Mine

Condition of Consent	Status	Comments
Table 1: Noise impact assessment criteria dB(A) **Day** $L_{Aeq(15\ min)}$ / **Evening** $L_{Aeq(15\ min)}$ / **Night** $L_{Aeq(15\ min)}$ / **Night** $L_{A1(1\ min)}$ / **Residence** (as shown in the Noise Monitoring Program) 42 / 42 / 38 / 48 / **R2** 41 / 41 / 40 / 50 / **R22** 40 / 40 / 39 / 49 / **R1**, **R9**, **R15a** 40 / 40 / 37 / 47 / **R3a**, **R5a**, **R6a&b** 37 / 35 / 35 / 45 / **R39a** *Notes:* • *To determine compliance with the $L_{Aeq(15\ minute)}$ 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, DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.* • *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, DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).* • *The noise emission limits identified in the above table apply under meteorological conditions of:* o *wind speeds of up to 3 m/s at 10 metres above ground level ; or* o *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.* • *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 DECC in writing of the terms of this agreement.*		Annual Review and in the 14-day report published on the IMC website. Exceedances of noise impact assessment criteria were recorded during the reporting period. Refer to Section 11.1 for details.
Land Acquisition Criteria		
2. 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 must be the criteria applying at the nearest listed residence. *Table 2: Noise acquisition criteria dB(A)* **Day** $L_{Aeq(15\ min)}$ / **Evening** $L_{Aeq(15\ min)}$ / **Night** $L_{Aeq(15\ min)}$ / **Residence** (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** *Note: Noise generated by the development is to be measured in accordance with the notes to Table 1.*	N/A	Noise levels recorded from operational activities have not exceeded the criteria in Table 2.
Rail Haulage Impact Assessment Criteria		
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 3: Rail noise impact assessment criteria* **Operating Condition** / **Measurement Conditions** / **Criteria** $L_{A1(1\ min)}$ 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) 95 dB(Lin) All service conditions / Up to 50 kilometres per hour, 15 metres from centreline of rail track / 87 dB(A) 95 dB(Lin) Must be non-tonal Linear noise levels must not exceed A-weighted noise levels by more than 15 dB *Note: All measured noise levels must be assessed for tonality in accordance with the NSW Industrial Noise Policy, unless otherwise specified.*	Compliant	Rail noise monitoring was undertaken during the reporting period. Overall noise levels (LA_{eq} and L_{eq}) were compliant.
Continuous Improvement		
4. The Applicant must: (a) continue to investigate ways to reduce the noise generated by the development (including off-site road noise, noise and vibration	Compliant	Details of noise investigations undertaken and

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impacts from the operation of the Kemira Valley rail line and maximum noise levels which may result in sleep disturbance); (b) continue to implement all reasonable and feasible best practice noise mitigation measures; and (c) report on these investigations and the implementation and effectiveness of these measures in the Annual Review, to the satisfaction of the Secretary.		mitigation improvements implemented are discussed in the Annual Review.
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	Details regarding noise investigations undertaken and mitigation improvements implemented are detailed in the Annual Review (see Section 6.8).
Additional Noise Mitigation Measures		
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. 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.	N/A	No monitoring was undertaken at residences that indicated that the noise generated by the development exceeded 3 dB(A).
Monitoring		
7. The Applicant must prepare a Noise Monitoring Program for the development to the satisfaction of the Secretary. This program must: (a) be submitted to the Secretary for approval by 30 April 2009; (b) be prepared in consultation with EPA; (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 (d) include a noise monitoring protocol for evaluating compliance with the noise impact and land acquisition criteria in this consent. The Applicant must implement the Noise Monitoring Program as approved by the Secretary. *Note: This program must expressly monitor the modifying factors referred to in the NSW Industrial Noise Policy (such as intermittency, tonality and low frequency)*	Compliant	An approved Noise Management Plan (Monitoring Program) is in place. The NMP was last approved on 19 September 2022. The NMP has been implemented.
BLASTING AND VIBRATION		
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.	N/A	No blasting activities were undertaken.

<table>
<tr><th>Condition of Consent</th><th>Status</th><th>Comments</th></tr>
<tr><td colspan="3">AIR QUALITY</td></tr>
<tr><td colspan="3">Impact Assessment Criteria</td></tr>
<tr><td>9. 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.

Table 4: Long term impact assessment criteria for particulate matter
<table><tr><th>Pollutant</th><th>Averaging period</th><th>Criterion</th></tr><tr><td>Total suspended particulate (TSP) matter</td><td>Annual</td><td>90 µg/m^3</td></tr><tr><td>Particulate matter < 10 µm (PM_{10})</td><td>Annual</td><td>30 µg/m^3</td></tr></table>Table 5: Short term impact assessment criteria for particulate matter
<table><tr><th>Pollutant</th><th>Averaging period</th><th>Criterion</th></tr><tr><td>Particulate matter < 10 µm (PM_{10})</td><td>24 hour</td><td>50 µg/m^3</td></tr></table>Table 6: Long term impact assessment criteria for deposited dust
<table><tr><th>Pollutant</th><th>Averaging period</th><th>Maximum increase in deposited dust level</th><th>Maximum total deposited dust level</th></tr><tr><td>Deposited dust</td><td>Annual</td><td>2 g/m^2/month</td><td>4 g/m^2/month</td></tr></table>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.</td><td>Compliant</td><td>Air quality monitoring is undertaken in accordance with the Air Quality and Greenhouse Gas Management Plan. Results are provided in the Annual Review and published in the 14-day report on the IMC website. No exceedances of criteria recorded for this reporting period.</td></tr>
<tr><td colspan="3">Monitoring</td></tr>
<tr><td>10. The Applicant must prepare and implement 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:
(a) be submitted to the Secretary for approval by 30 April 2009;
(b) be prepared in consultation with EPA;
(c) use a combination of high volume samplers and dust deposition gauges to monitor the performance of the development; and
(d) include an air quality monitoring protocol for evaluating compliance with the air quality impact assessment criteria in this consent.

The Applicant must implement the Air Quality Monitoring Program as approved by the Secretary.</td><td>Compliant</td><td>The Air Quality and Greenhouse Gas Management Plan is in place. The AQMP was reviewed during the reporting period and approved on 9 August 2023.

The AQMP has been implemented.</td></tr>
<tr><td colspan="3">METEOROLOGICAL MONITORING</td></tr>
<tr><td>11. 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.</td><td>Compliant</td><td>Weather stations are located at the KVCLF, Dendrobium Pit Top and Ventilation Shaft 2/3 site that generally meet these requirements.</td></tr>
<tr><td colspan="3">WATER MANAGEMENT</td></tr>
<tr><td colspan="3">Discharges</td></tr>
<tr><td>12. The Applicant must ensure all surface water discharges from the surface facilities:
(a) meet the relevant ANZECC water quality objectives for the protection of aquatic ecosystems and water quality of existing receiving waters; and
(b) comply with the discharge limits (both volume and quality) set for the development in any EPL.</td><td>Compliant</td><td>Water quality monitoring is undertaken as per the Water Management Plan.

There were no exceedances of water quality and</td></tr>
</table>

Condition of Consent	Status	Comments
		quantity discharge limits over the reporting period.
Water Management Plan		
13. The Applicant must prepare a Water Management Plan for the surface facilities to the satisfaction of the Secretary. This plan must: (a) be submitted to the Secretary for approval by 30 April 2009; (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 (c) include a: Site Water Balance; Erosion and Sediment Control Plan; Surface Water Monitoring Program; and Surface and Ground Water Response Plan. The Applicant must implement the Water Management Plan as approved by the Secretary.	Compliant	An approved Water Management Plan is in place and has been implemented. The WMP was reviewed over the reporting period and is was approved on 9 August 2023.
Site Water Balance		
14. The Site Water Balance must: (a) include details of: sources and security of water supply; water use on site; water intercepted by mining operations; water management on site; off-site water transfers and water stored or disposed of underground; reporting procedures; and (b) describe measures to minimise water use by the development.	Compliant	The Site Water Balance has been included in the Water Management Plan to meet these requirements.
Erosion and Sediment Control		
15. The Erosion and Sediment Control Plan must: (a) be consistent with the requirements of the *Managing Urban Stormwater: Soils and Construction Manual* (Landcom 2004, or its latest version); (b) identify activities that could cause soil erosion and generate sediment; (c) describe measures to minimise soil erosion and the potential for transport of sediment to downstream waters; (d) describe the location, function, and capacity of erosion and sediment control structures; and (e) describe what measures would be implemented to monitor and maintain the structures over time.	Compliant	The Erosion and Sediment Control Plan has been included in the Water Management Plan to meet these requirements.
Surface Water Monitoring Program		
16. The Surface Water Monitoring Plan must include: (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; (b) surface water quality and stream health assessment criteria, including trigger levels for investigating any potentially adverse surface water impacts; (c) a program to monitor the impact of the surface facilities on surface water flows and quality, stream health and channel stability; and (d) procedures for reporting the results of this monitoring.	Compliant	The Surface Water Monitoring Plan has been included in the Water Management Plan to meet these requirements. The results are published in the 14-day report on the IMC website and a summary of the results from the

<table>
<tr><th>Condition of Consent</th><th>Status</th><th>Comments</th></tr>
<tr><td></td><td></td><td>monitoring program is provided in the Annual Review.</td></tr>
<tr><td colspan="3">Surface and Ground Water Response Plan</td></tr>
<tr><td>17. The Surface and Ground Water Response Plan must describe what measures and/or procedures would be implemented to:
(a) respond to any exceedances of the surface water, stream health, and groundwater assessment criteria; and
(b) mitigate and/or offset any adverse impacts on groundwater dependent ecosystems, aquatic ecosystems or riparian vegetation.</td><td>Compliant</td><td>The Surface and Ground Water Response Plan has been included in the Water Management Plan to meet these requirements.</td></tr>
<tr><td colspan="3">LANDSCAPE MANAGEMENT</td></tr>
<tr><td colspan="3">Rehabilitation</td></tr>
<tr><td>18. For rehabilitation works within the Metropolitan Special Area, the Applicant must also ensure that these works are carried out to the satisfaction of WaterNSW.</td><td>Compliant</td><td>A Rehabilitation Management Plan and Conceptual Site Closure Plan have been developed. Closure and/or rehabilitation activities, when undertaken, will meet the requirements of the relevant regulatory agencies. Rehabilitation undertaken during each financial year is reported in the Annual Review and in the Annual Rehabilitation Report.</td></tr>
<tr><td>Rehabilitation Objectives</td><td></td><td></td></tr>
<tr><td>18A. 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.
Table 7: Rehabilitation Objectives
<table>
<tr><th>Feature</th><th>Objective</th></tr>
<tr><td>All areas of the site affected by the development</td><td>• Safe, stable and non-polluting
• Fit for the intended post-mining land use/s
• Establish the final landform and post-mining land use/s as soon as practicable after cessation of mining operations
• Minimise post-mining environmental impacts</td></tr>
<tr><td>Areas proposed for native ecosystem re-establishment</td><td>• Establish/restore self-sustaining native woodland ecosystems
• Establish local plant community types
• Establish:
– riparian habitat within any diverted and/or re-established creek lines and retained water features;
– habitat, feed and foraging resources for threatened fauna species; and
– vegetation connectivity and wildlife corridors, as far as is reasonable and feasible</td></tr>
<tr><td>Final Landform</td><td>• Stable and sustainable for the intended post-mining land use/s
• Integrated with surrounding natural landforms and other mine rehabilitated landforms, to the greatest extent practicable
• Incorporate micro-relief and drainage features that mimic natural topography and mitigate erosion, to the greatest extent practicable</td></tr>
<tr><td>Rehabilitation materials</td><td>• Soil and vegetative materials from areas disturbed under this consent (including topsoils, substrates and seeds) are recovered, managed and used as rehabilitation resources</td></tr>
<tr><td>Surface facilities sites</td><td>• To be decommissioned and removed, unless the Resources Regulator agrees otherwise
• All surface facilities sites are to be revegetated with suitable local native plant species to a landform consistent with the surrounding environment</td></tr>
</table></td><td>Compliant</td><td>The Rehabilitation Management Plan has been developed to meet these objectives.

The objectives were uploaded to the Resources Regulator portal in FY23. The rehabilitation objectives were refused by the Resources Regulator in March 2023 and were resubmitted in June 2023.</td></tr>
</table>

Condition of Consent	Status	Comments
<table><tr><td></td><td>or the intended post mining land use(s)</td></tr><tr><td>Portals and vent shafts of the development</td><td>• To be decommissioned and made safe and stable • Retain habitat for threatened species (e.g. bats), where practicable</td></tr><tr><td>Watercourses subject to approved mine water discharges</td><td>• Hydraulically and geomorphologically stable • Aquatic ecology and riparian vegetation that is the same or better than prior to grant of this consent</td></tr><tr><td>Mine water discharges following mine closure (from any location)</td><td>• Negligible environmental consequence</td></tr><tr><td>Watercourses subject to subsidence impacts</td><td>• Remediate physical damage as soon as reasonably practicable, unless the environmental impacts of remediation exceed the environmental benefits</td></tr><tr><td>Water quality</td><td>• Water retained on the site is fit for the intended post-mining land use/s • Water management is consistent with the regional catchment management strategy</td></tr><tr><td>Built features damaged by mining operations</td><td>• Repair to pre-mining condition or equivalent unless the: – owner agrees otherwise; or – damage is fully restored, repaired or compensated for under the Coal Mine Subsidence Compensation Act 2017</td></tr><tr><td>Cliffs, minor cliffs, rock face features and steep slopes</td><td>• No additional risk to public safety compared to prior to mining</td></tr><tr><td>Community</td><td>• Ensure public safety • Minimise adverse socio-economic effects associated with mine closure</td></tr></table>		
18B. The Applicant must carry out the rehabilitation of the site progressively, that is, as soon as reasonably practicable following disturbance.	Compliant	Areas of disturbance outside of operational areas have been progressively rehabilitated.
Rehabilitation Management Plan		
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 Mining Act 1992.	Compliant	A Rehabilitation Management Plan to meet the requirements of the mining lease has been prepared and submitted. The RMP was reviewed in the reporting period.
Mine Closure Plan		
21. The Applicant must prepare a Mine Closure Plan to the satisfaction of the Secretary. The plan must: (a) be prepared: (i) by a suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary; (ii) in consultation with the Department, WaterNSW, DPE Water, Resources Regulator, WCC and (if requested by the Secretary) the Mining Panel; (iii) in accordance with any relevant Resources Regulator Guideline; and (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; (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; (d) include a stakeholder engagement plan to guide mine closure planning processes and outcomes; (e) investigate ways to minimise adverse socio-economic effects associated with mine closure; (f) contain a detailed mine closure strategy, which includes: (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	N/A	A Conceptual Site Closure Plan has been developed that generally meets these requirements and all requirements will be met closer to mine closure. Site Closure is not planned within the next two years.

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waters within the Metropolitan Special Area and/or the Illawarra Escarpment; (ii) consideration of other underground mines hydraulically connected to Dendrobium Mine (including options regarding isolating those other mines); (iii) include details of any measures necessary to ensure that mine workings do not impact on stored waters or dams; (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; (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 (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 (g) be fully reviewed and revised every three years following approval, unless the Secretary agrees otherwise. The Applicant must implement the Mine Closure Plan as approved by the Secretary. *Notes:* *The Mine Closure Plan should address all land impacted by the development.* *The Rehabilitation Plan and Mine Closure Plan require substantial integration to achieve all objectives for the rehabilitated site*.		
Bushfire Management Plan		
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	An approved Bushfire Management Plan that meets these requirements is in place.
Photographic Archival Recording		
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.	Compliant	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 Council of NSW.
Unexpected Historical Archaeological Relics		
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.	Compliant	No unexpected archaeological artefacts were identified during ground disturbing works.
TRANSPORT		
Rail Transport of Coal		

Condition of Consent	Status	Comments
23. The Applicant must ensure that trains do not travel on the Kemira Valley rail line: (a) between 12 midnight and 6 am, until 29 April 2010; and (b) between 11 pm and 6 am, from 30 April 2010 unless written approval is obtained from EPA for emergency use of the rail line.	Compliant	The rail curfew has been adhered to during the reporting period. No emergency use was required.
24. The Applicant must record the: (a) date and time of each train movement on the Kemira Valley rail line; and (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	This data is recorded via the Logistics KPI Report and also on Pacific National Run Sheets. The data is summarised and reported in the Annual Review.
Road Transport		
25. The Applicant must prepare a Traffic Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be submitted to the Secretary for approval by 30 April 2009; (b) be prepared in consultation with the WCC, Mt Kembla Primary School and the CCC; (c) include traffic control measures for truck movements through residential areas, including Stones Road and its intersection with Cordeaux Road; (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; (e) provide heavy vehicle speed limits; (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 (g) include procedures for regular monitoring of compliance with this plan. The Applicant must implement the Traffic Management Plan as approved by the Secretary.	Compliant	The Traffic Management Plan is in place and was approved on 29 May 2021. The TMP has been implemented.
Road Maintenance		
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.	Compliant	An agreement has been developed with WaterNSW.
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 must be entitled to carry out such maintenance	Compliant	A Maintenance Agreement for Stones Road is in place, dated 28 August 2019. Significant upgrades were undertaken on Stones Road during

<table>
<tr><th>Condition of Consent</th><th>Status</th><th>Comments</th></tr>
<tr><td>work at the Applicant's cost. Any dispute over implementation of this condition is to be referred to the Secretary for resolution.</td><td></td><td>the reporting period due to a land slip.</td></tr>
<tr><td colspan="3">VISUAL</td></tr>
<tr><td colspan="3">Visual Amenity</td></tr>
<tr><td>28. The Applicant must minimise the visual impacts of the surface facilities to the satisfaction of the Secretary.</td><td>Compliant</td><td>A vegetative screen is maintained around the operation.</td></tr>
<tr><td colspan="3">Lighting Emissions</td></tr>
<tr><td>29. The Applicant must:
(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;
(b) take all practicable measures to mitigate off-site lighting impacts from the surface facilities;
(c) ensure that light emitted from headlights of locomotives operating on the Kemira Valley rail line are screened from residences; and
(d) report on the effectiveness of lighting emission controls in the Annual Review to the satisfaction of the Secretary.</td><td>Compliant</td><td>A Lighting and Visual Amenity Management Plan is in place.

New lighting has been reviewed and modified where possible to minimise offsite impacts.

A Light Spill Assessment was completed in FY23. No issues were identified.</td></tr>
<tr><td colspan="3">WASTE</td></tr>
<tr><td>30. The Applicant must:
(a) monitor the amount of waste generated by the development;
(b) investigate ways to reuse, recycle, or minimise this waste;
(c) implement reasonable and feasible measures to minimise this waste; and
(d) report on waste management and minimisation in the Annual Review to the satisfaction of the Secretary.</td><td>Compliant</td><td>Waste volumes are monitored. A summary of waste management activities associated with Dendrobium Mine is reported via the Annual Review.</td></tr>
<tr><td colspan="3">BIODIVERSITY</td></tr>
<tr><td colspan="3">Biodiversity Credit Requirements</td></tr>
<tr><td>31. 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.
Table 8: Biodiversity Credit Requirements
<table>
<tr><th>Credit Type</th><th>Credits Require</th></tr>
<tr><td>Ecosystem Credits</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>Species Credits</td><td></td></tr>
<tr><td>Caladenia tessellata</td><td>33</td></tr>
<tr><td>Genoplesium baueri</td><td>33</td></tr>
</table></td><td>Compliant</td><td>A payment to the Biodiversity Conservation Fund was made on 15 September 2022 and approved on 20 September 2022 (BCT Reference BCF424).</td></tr>
<tr><td colspan="3">SCHEDULE 5: SPECIFIC ENVIRONMENTAL CONDITIONS - OTHER SITE COMPONENTS</td></tr>
<tr><td colspan="3">COAL WASHERY</td></tr>
<tr><td colspan="3">Hot Gas Exhaust Stack Discharges</td></tr>
</table>

Condition of Consent	Status	Comments
1. The Applicant must: (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; (b) regularly monitor the concentration of pollutants discharged from the coal dryer hot gas exhaust; and (c) report on waste management and minimisation in the Annual Review to the satisfaction of the Secretary.	N/A	The Coal Dryer is not in operation.
Fuel Source		
2. The Applicant must ensure the coal drying plant only uses blast furnace offgas or natural gas as fuel for the drier.	N/A	The Coal Dryer is not in operation.
WEST CLIFF COAL WASH EMPLACEMENT		
Coal Washery Reject		
3. The Applicant must: (a) monitor the amount of coal washery reject emplaced in the West Cliff Coal Wash Emplacement; (b) investigate ways to reduce emplacement of coal washery reject at West Cliff, including beneficial use or improved disposal options; and (c) report on these matters in the West Cliff AEMR to the satisfaction of the Secretary.	Compliant	Project Approval 08_0150 for the Bulli Seam Operations Project has been granted and as such takes precedence. Refer to Condition 8 of Schedule 5 of the Consent. *These requirements are reported in the Appin Mine Annual Review.*
Pollution Reduction Program		
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: (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 (b) cover a period of not less than five years.	Compliant	Project Approval 08_0150 has been granted and as such takes precedence. Refer to Condition 8 of Schedule 5 of the Consent. *Condition 8 has been included in EPL 2504 that covers the construction/modification of water treatment plants, revised water quality limits and aquatic health monitoring. The water treatment plant was commissioned in February 2023.*
Water Quality Monitoring Program		
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.	Compliant	Project Approval 08_0150 has been granted and as such takes precedence. Refer to Condition 8 of Schedule 5 of the Consent.

Condition of Consent	Status	Comments
		A Water Management Plan is in place for Appin Mine. Consultation is undertaken as required.
Brennans Creek Diversion Bypass Rehabilitation Plan		
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.	Compliant	Project Approval 08_0150 has been granted and as such takes precedence. Refer to Condition 8 of Schedule 5 of the Consent. *Brennans Creek Diversion Bypass Rehabilitation Plan was submitted to DoP in December 2008. The plan was approved on 9 September 2009.*
General Management of the Emplacement		
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.	Compliant	Project Approval 08_0150 has been granted and as such takes precedence. Refer to Condition 8 of Schedule 5 of the Consent. *Emplacement operations are managed in accordance with the Appin Mine Coal Wash Emplacement Area Management Plan. Details of the emplacement operations, including the rehabilitation aspects, are included in the Appin Mine Annual Review.*
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 must 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.	Compliant	Project Approval 08_0150 has been granted.
SCHEDULE 6: SPECIFIC ENVIRONMENTAL CONDITIONS – EXTENDED SITE		
GREENHOUSE GASES & ENERGY EFFICIENCY		

Condition of Consent	Status	Comments
1. The Applicant must prepare a Greenhouse and Energy Efficiency Plan for the development. This plan must: (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); (b) be submitted to the Secretary by 30 April 2009 for approval; (c) include a program to monitor greenhouse gas emissions and energy use generated by the development; (d) include a framework for investigating and implementing measures to reduce greenhouse gas emissions and energy use at the development; (e) include a research program to inform the continuous improvement of the greenhouse gas minimisation measures at the development; (f) describe how the performance of these measures would be monitored over time; and (g) report on the development's greenhouse gas emissions and minimisation measures in the AEMR to the satisfaction of 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.* The Applicant must implement the Greenhouse and Energy Efficiency Plan as approved by the Secretary.	Compliant	Documents to meet these requirements were originally submitted to the DoP by 30 April 2009 to meet these requirements and approved in December 2009. These requirements are included in the approved Air Quality and Greenhouse Gas Management Plan and are being implemented. The AQMP was reviewed during the reporting period and approved on 9 August 2023. A Decarbonisation Strategy for IMC is in place and progressively implemented and reviewed.
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	Measures being undertaken are reported in the Annual Review.
SCHEDULE 7: ADDITIONAL PROCEDURES FOR AIR QUALITY AND NOISE MANAGEMENT		
NOTIFICATION OF LANDOWNERS		
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	Results are reported in the Annual Review which is publicly available on the IMC website. Monitoring results are provided in the 14-day report that is available on the IMC website. Exceedances of noise impact assessment criteria recorded during the reporting period have been reported to the Department and relevant landowners as required.

Condition of Consent	Status	Comments
INDEPENDENT REVIEW		
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. If the Secretary is satisfied that an independent review is warranted, the Applicant must within 2 months of the Secretary's decision: (a) consult with the landowner to determine his/her concerns; (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to conduct monitoring on the land, to: determine whether the development is complying with the relevant impact assessment criteria in schedule 4; and identify the source(s) and scale of any impact on the land, and the development's contribution to this impact; and (c) give the Secretary and landowner a copy of the independent review.	N/A	IMC is not aware of any requests for an Independent Review in this reporting 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. Where matters referred to the Secretary under this condition cannot be resolved by the Director- General within 28 days, the Secretary must refer the matter to an Independent Dispute Resolution Process.	N/A	No independent review has been undertaken.
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 non compliance, then the Applicant must: (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 (b) secure a written agreement with the landowner to allow exceedances of the relevant criteria; or (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.	N/A	No independent review has been undertaken.
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. 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 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.	N/A	No independent review has been undertaken.
LAND ACQUISITION		

Condition of Consent	Status	Comments
6. 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: (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: existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and 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; (b) the reasonable costs associated with: relocating within the local government areas of the affected Councils, or to any other local government area determined by the Secretary; obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and (c) reasonable compensation for any disturbance caused by the land acquisition process. 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. 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: consider submissions from both parties; 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 propose any appropriate fair and reasonable terms of acquisition. 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. 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. 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. If the landowner refuses to accept within 6 months a written offer duly made by the Applicant under this condition, then the	N/A	No written requests have been received by landowners for acquisition.

Condition of Consent	Status	Comments
Applicant's obligations to acquire the land must cease, unless otherwise agreed by the Secretary.		
7. The Applicant must bear the full costs of any independent valuer's valuation, determination and report.	N/A	No written requests have been received by landowners for acquisition.
8. If the Applicant and landowner agree that only part of the land must 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.	N/A	No written requests have been received by landowners for acquisition.
SCHEDULE 8: ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING		
ENVIRONMENTAL MANAGEMENT STRATEGY		
1. The Applicant must prepare and implement 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: (a) provide the strategic framework for environmental management of the development; (b) identify the statutory requirements that apply to the development; (c) describe in general how the environmental performance of the development would be monitored and managed for the: mining area; surface facilities; other site components; and extended site; (d) describe the procedures that would be implemented to: keep the local community and relevant agencies informed about the operation and environmental performance of the development; receive, handle, respond to, and record complaints; resolve any disputes that may arise during the course of the development; respond to any non-compliance; manage cumulative impacts; and respond to emergencies; and (e) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development; and (f) include: references to any strategies, plans and programs approved under the conditions of this consent; and a clear plan depicting all the monitoring to be carried out under the conditions of this consent. The Environmental Management Strategy approved by the Secretary must be implemented.	Compliant	The Environmental Management Strategy is in place and was last approved on 22 July 2021. The EMS was reviewed in the reporting period and was approved on 1 August 2023. The EMS has been implemented.
MANAGEMENT PLAN REQUIREMENTS		
2. Management plans required under this consent must be prepared in accordance with relevant guidelines, and include: (a) a summary of relevant background or baseline data; (b) details of:	Compliant	Management Plans are progressively reviewed to meet these requirements.

Condition of Consent	Status	Comments
(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); (ii) any relevant limits or performance measures and criteria; and (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; (c) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria; (d) a program to monitor and report on the: (i) impacts and environmental performance of the development; and (ii) effectiveness of the management measures set out pursuant to condition 2(c); (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; (f) a program to investigate and implement ways to improve the environmental performance of the development over time; (g) a protocol for managing and reporting any: (i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); (ii) complaint; (iii) failure to comply with statutory requirements; and (h) a protocol for periodic review of the plan. Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.		
2A. Within three months of the: (a) submission of an incident report under condition 4 of Schedule 8; (b) submission of an Annual Review under condition 5 of Schedule 8; (c) submission of an Independent Environmental Audit under condition 6 of Schedule 8; or (d) approval of any modification of the conditions of this consent, the suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant. 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. *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.*	Compliant	Management Plans have been reviewed as required (refer to Section 13.2). The Management Plan Review log has been maintained.
REPORTING		
Incident Reporting		
3. 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.	N/A	There were no incidents that caused or had the potential to cause material environmental harm

Condition of Consent	Status	Comments
		over the reporting period.
4. 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: (a) describes the date, time, and nature of the incident; (b) identifies the cause (or likely cause) of the incident; (c) describes what action has been taken to date; and (d) describes the proposed measures to address the incident.	N/A	There were no incidents that caused or had the potential to cause material environmental harm over the reporting period.
Annual Review		
5. 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: (a) identify the standards and performance measures that apply to the development; (b) describe the development (including any rehabilitation) that was carried out in the previous financial year; (c) describe the development (including any rehabilitation) that is proposed to be carried out over the current financial year; (d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years; (e) include a summary of the monitoring results for the development during the past year; (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: (i) relevant statutory requirements, limits or performance measures/criteria; (ii) requirements of any plan or program required under this consent; (iii) monitoring results of previous years; and (iv) relevant predictions in the documents listed in condition 2 of Schedule 2. (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; (h) evaluate and report on: (i) the effectiveness of the noise and air quality management systems; and (ii) compliance with the performance measures, criteria and operating conditions in this consent; (i) identify any trends in the monitoring data over the life of the development; (j) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (k) describe what measures will be implemented over the next financial year to improve the environmental performance of the development.	Compliant	The Annual Review is prepared to meet the requirements of this condition. The Annual review is submitted to the relevant stakeholders annually as per the requirements. The Annual Review is made available on the IMC website.

Condition of Consent	Status	Comments
Copies of the Annual Review must be submitted to the affected Councils and made available to the CCC and any interested person upon request.		
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 suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary; (b) include consultation with the relevant agencies and the CCC; (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); (d) review the adequacy of strategies, plans or programs required under these approvals; (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 (f) be conducted and reported to the satisfaction of the Secretary. *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.*	Compliant	The last Independent Environmental Audit was undertaken by ERM Pty Ltd in FY21. The requirements of this condition relating to the audit were met. The next IEA will be undertaken by 31 December 2023.
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. Note: The audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Secretary.	Compliant	The FY21 IEA report, including the Response to Recommendations, was submitted to the Department as required. All actions identified to address non-compliances and observations were completed in FY22.
Monitoring and Environmental Audits		
8. 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&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit. Note: For the purposes of this condition, as set out in the EP&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.	Compliant	Noted.
COMMUNITY CONSULTATIVE COMMITTEE		
9. The Applicant must maintain a Community Consultative Committee (CCC) for the development to the satisfaction of the	Compliant	The Dendrobium Community

Condition of Consent	Status	Comments
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. *Notes:* *• The CCC is an advisory committee only.* *• In accordance with the guidelines, the committee should comprise an independent chair and appropriate representation from the Applicant, Council and the local community.*		Consultative Committee is in place. Meetings are nominally held every two months.
10. 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: (a) managed by the Chair of the CCC to facilitate the functioning of the CCC; (b) used only if required for the engagement of consultants to interpret technical information and the like; (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; (d) managed so that any monies unspent during each year are returned to the Applicant; (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.	Compliant	Funds will be released as required when requested by the CCC. There were no requests in FY23.
ACCESS TO INFORMATION		
11. Before the commencement of Modification 8 until the completion of all rehabilitation required under this consent, the Applicant must: (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: (i) the documents referred to in condition 2 of Schedule 2 of this consent; (ii) all current statutory approvals for the development; (iii) all approved strategies, plans and programs required under the conditions of this consent; (iv) minutes of CCC meetings; (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; (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; (vii) a summary of the current stage and progress of the development; (viii) contact details to enquire about the development or to make a complaint; (ix) a complaints register, updated monthly; (x) the Annual Reviews of the development; (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; (xii) any other matter required by the Secretary; and (b) keep such information up to date, to the satisfaction of the Secretary.	Compliant	Condition 11 of Schedule 8 was included in the Consent with MOD 8 dated 13/07/2018. All of these documents were not required to be available prior to MOD 8. A link has been provided on the IMC website to the DPE Major Projects website where documents associated with MOD 6, 7 and 8 are available. MOD 5 documents are available on the IMC website. IMC does not have access to documents prior to MOD 5. Approvals, strategies, plans, programs and other documentation is updated on the

Condition of Consent	Status	Comments
		web site as they become available. Monitoring data is provided in the 14-day report.

Appendix 4: Community Complaints Report - FY23

Date	Nature of Complaint	Actions / Follow Up
19/06/2023	A community member contacted the call centre at 12:17 pm regarding squealing brakes, from multiple trains along the Kemira Valley Train Line.	Rail operations conducted noise monitoring adjacent to Bushells Hill tunnel. The trains observed were within normal operating noise levels except for KV03. Further investigation showed that the set of wagons returned from maintenance and had stood idle for 14 days. Rust developed on the wheels potentially causing the squealing noise. The issue was addressed by the Operations team. The outcome of the investigation and updates of the process were provided to the stakeholder who was satisfied with the outcome.
11/06/2023	A community member contacted the call centre at 9:33 am regarding recurrent high-pitched squealing from the loaded trains coming out of the Kemira Valley Tunnel.	Rail Operations investigated and did not identify significant noise from the units at the time of the complaint. Operations team confirmed the grease pods were working as designed. The noise heard was potentially brake squeals and may be exacerbated by the cooler weather. Further noise monitoring was conducted adjacent to Bushells Hill tunnel over the week of the 20 June. Identified issues with unit KV03 was rectified by the Operations team. The feedback was provided to the Community member, who was satisfied with the response.
June	Grievance 0045671 0 complaints received	Complaints or communications received through Grievance 0045671 are reported separately to this process.
28/05/2023	A community member contacted the call centre at 10 am on 28 May regarding high-pitched squealing noise from a train coming out of the Kemira Tunnel.	The Community Team raised the complaint with the operations after discussion with the community member regarding the location of the issue. Operations identified unit 58 (empty) and unit 59 (loaded) as the potential source of the noise. Pacific National conducted two noise monitoring audits on that day with results showing that unit 59 had intermittent squealing heard that is consistent with brakes being applied and released as the train traverses downhill. Maintenance was performed to the unit. The Community member was contacted to provide the outcome. No feedback received.
May	Grievance 0045671 1 complaint received	Complaints or communications received through Grievance 0045671 are reported separately to this process.
April	No complaints received for the month.	

Date	Nature of Complaint	Actions / Follow Up
April	Grievance 0045671 1 complaint received	Complaints or communications received through Grievance 0045671 are reported separately to this process.
20/03/2023	A community member contacted the Community Call Line at 7:45 pm regarding an oil spill on Cordeaux Road heading down from the mine.	The Community Team contacted the Mine. Personnel from the Warehouse went to the site to investigate the issue and used a spill kit to clean up the oil spill that day. The warehouse subsequently identified the contractor truck that caused the spill and reported it. On 21 March, Operations cleaned the road completely. The community member was contacted and provided the outcome and was satisfied.
5/03/2023	A Community member contacted the Community Call Line at 10:36 pm regarding noise coming from the mine site.	The Community Team contacted the Mine who reviewed CCTV advising that the noise occurred during shift change. Outcomes included: • A detailed investigation and coaching discussion with the drivers and operators. • A reminder to crews around noise management especially during shift change (curfews in place). • Provision of an induction to all supply drivers of their responsibility regarding noise management on surface. The investigation and outcome were emailed to the community member. No feedback received.
5/03/2023	A community member contacted the Community Call Line at 8:22 pm regarding noise coming from the rail tracks being extremely loud.	Rail Operations advised a speed restriction was in place of 10 kph then lifted to 20 kph for the hot weather, for safety reasons. A roll-by was conducted on the train mentioned (Unit 57, 8202). No loud/high pitched squeal was detected. The community member was contacted to advise the outcome of the investigation and they were satisfied.
4/03/2023	A community member sent an SMS to the Community Team to advise screeching brake sound from a train 8.53 pm.	The community team raised the complaint with Rail Operations, and they identified the unit making the noise. An audit was conducted with no issues with noise on the approach to Kemira Valley (empty train). The return journey (loaded train) did have some noise however not to the extent from the complaint which was investigated further with nil defects visible. The community member was contacted to advise the outcome of the investigation and they were satisfied.
February	Grievance 0045671 1 complaint received	Complaints or communications received through Grievance 0045671 are reported separately to this process.

Date	Nature of Complaint	Actions / Follow Up
23/02/2023	A community member sent an SMS to the Community Team regarding a train with a high squealing noise travelling from the mine at 12.25 pm. The same noise was heard the day before around the same time.	Rail operations investigated the concern and identified the wagons with the squeal. One had a visual inspection with no issues identified, and the second was removed from service overnight for preventative maintenance. A voice message with the outcome was left with the resident the following day.
January	Grievance 0045671 No complaints received	Complaints or communications received through Grievance 0045671 are reported separately to this process.
30/01/2023	A community member called the Community Line at 10.59 pm to advise a train with 5 carriages making a loud bang near Central Road.	Rail operations investigated the concern. The train was KV20 – 8203/57. Operations advised that the train speed was low (5-10 kph) while the brakes were still releasing, creating a brake shudder and the alleged noise. Two audits conducted showed no abnormal sound on the unit. The community member did not provide contact details to be contacted with the outcome.
17/01/2023	A community member called the Community Line at 10 pm concerned about heavy machinery noise audible over the last 30-minute period.	The Mine confirmed three vehicles were moving equipment at the time of the phone call during shift change. The Manager reminded the workforce to avoid unnecessary movements and of the curfews for LHDs. The community member did not request a call back.
17/01/2023	A community member called the Community Line at 5:45 pm concerned of a loud mechanical thumping noise audible over the last 30-minute period.	The Mine confirmed the noise was generated by an operator emptying bins at the Pit Top. The activity had ceased around the same time as the phone call. The operator was reminded to be cautious on noise generating activities. The community member was provided feedback over email.
12/01/2023	A community member called the Community Line at 9.50 pm regarding elevated noise coming from the Pit Top during shift change.	The community team contacted the resident the following day for more information. An investigation was completed which included a review of vehicle movements. No anomalies were identified from previous shift activities. The resident was provided the outcome of the investigation and appreciated the feedback.

Date	Nature of Complaint	Actions / Follow Up
9/01/2023	A community member sent an email at 10.17 am regarding ‘a loud buzzing noise coming from the mine constantly for some time now'. Requested we do something about it.	The Community Team noted the concern and advised the community member by email that South32 was aware of the buzzing and had recently conducted noise monitoring as part of an investigation. A compressor operating for at least the last 2 years appears to have become more audible recently and South32 is speaking directly with residents nearby to the mine. The address details of the community member were requested to assist the investigation however it was not provided.
3/01/2023	A community member called the community line at 11:00 pm to report general machine noise and increase in noise from the Pit Top over the last week.	The Mine confirmed that vehicles associated with shift changeover were accessing the Portal Road at the time of the call. Attended noise monitoring was being undertaken at the time. Nothing unusual was identified. The community member did not request a call back.
December	Grievance 0045671 No complaints received	Complaints or communications received through Grievance 0045671 are reported separately to this process.
27/12/2022	A community member called the community line at 10:15 pm to advise excessive machinery noise coming from the pit top.	The Community Team confirmed shift changeover was occurring at the time of concern for about 25 minutes. This involved vehicle movements in the yard. Nothing unusual was identified. The community member did not require a call back.
15/12/2022	A community member called the community line at 1:25 am to advise of intermittent noise coming from the mine.	The Mine confirmed two vehicle movements at the time of concern as the likely source of the noise. The vehicles were carrying unladen forks that are known to rattle and bump if unladen. The noise ceased after the phone call. The community member did not require a call back.
13/12/2022	A community member contacted the Community Team by SMS at 10 am to advise of a high-pitched squealing from trains near the hiking path at Central Road. It was also noted there was more rail noise Saturday between 11 am and 3 pm, and on Sunday between 9 pm and 11 pm at their home.	An investigation was completed which identified the train to be as KV02 (8203 – Unit 56), and an audit showed no abnormal noise on the unit. The crew reported an irregular brake application downhill as workers were seen near the track in an unusual place, which would have generated more noise at the time of the call. The outcome was shared with the community member who was satisfied.

Date	Nature of Complaint	Actions / Follow Up
1/12/2022	A community member called the community line at 8:33 am to advise of a high-pitched squealing noise from trains near William James Drive, Mount Kembla.	An investigation was completed which identified the train to be KV04 (8204 -Unit 57). A check on the train noise level was completed on the next two in both directions with no abnormal levels identified. Two additional noise audits were performed on the 2 December 2022 and no further issues were identified. The outcome was shared with the community member who was satisfied.
November	Grievance 0045671 2 Complaints received.	Complaints or communications received through Grievance 0045671 are reported separately to this process.
25/11/2022	A community member called the community line at 6:50 am on Friday, 25 November and again on Monday, 28 November regarding trucks parking opposite 200 Cordeaux Road with engine idling. They also reported bad behaviour from the truck driver when the resident requested they turn off the engine.	Due to truck curfew times within the Village, the parking bay located on Cordeaux Road is the designated waiting area, however patrons of the coffee van located in the same area prevented parking access. The Community Team shared the concerns with Logistics immediately, and the driver was reminded to switch off the engine when waiting. Daily deliveries will be made to an offsite storage facility (rather than direct to site) to reduce the trucks parking in that space, pending a contract review approval, and a discussion was had with the coffee van vendor to explain the need for truck access to the parking bay as it was intended. The community member was contacted and satisfied with the response.
24/11/2022	A community member called the Community team to advise that a tree had fallen onto property they lease from IMC. Caller asked the tree to be removed.	Investigation and assessment determined that removal of the fallen tree would be a manual process and was a safety risk due to the poor access, slope, and uneven ground. It was decided that the tree would be left as is. Caller was dissatisfied with the assessment and later advised there was damage to a fence. They asked that the request be escalated, and the tree removed. The Infrastructure Protection team removed the tree from this property on 13 March 2023. The stakeholder was satisfied with the response.
October	Grievance 0045671 1 Complaint received.	Complaints or communications received through Grievance 0045671 are reported separately to this process.
17/10/2022	A member of the community called the Community Team at 12 pm to advise that a truck from Ledacon did not stop at the stop sign on Stones Road.	Since the Dendrobium Driver's Code of Conduct was sent to the contractor in August, South32 requested Ledacon to advise all their workers to stop at all designated stop signs along Stones Road and have a direct discussion with the driver of the truck to avoid recurrences. The community member was made aware of the result and was satisfied with the response.

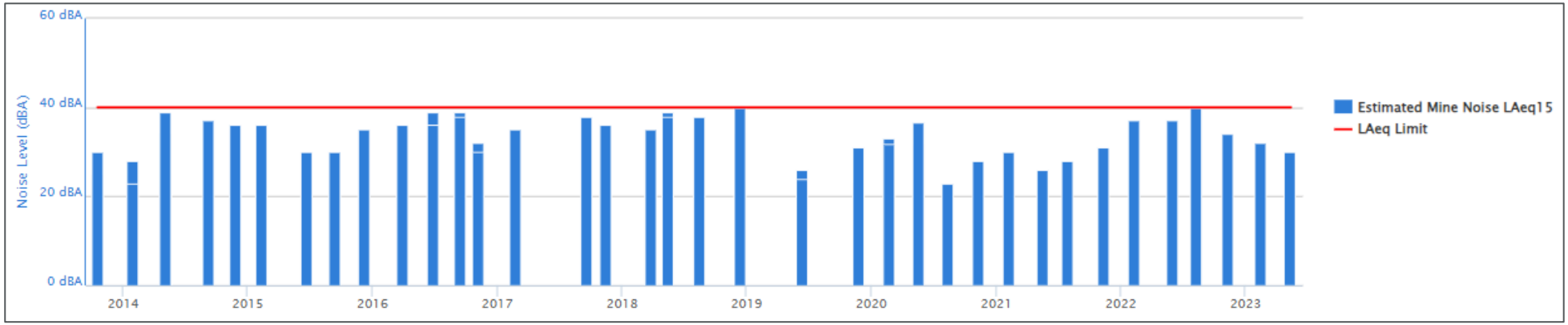
Date	Nature of Complaint	Actions / Follow Up
September	No complaints received for the month.	
September	Grievance 0045671 3 Complaints received.	Complaints or communications received through Grievance 0045671 are reported separately to this process.
29/08/2022	A community member called the Community Team at 7:30 am to advise that contractors are not stopping at the stop sign on Stones Road. The resident mentioned Veolia and Ledacon branded vehicles.	The Logistics Team sent the Dendrobium Drivers Code of Conduct to all the contractors in the area, to remind them about the curfew zone, the requirement to stop at all designated stop signs and not to exceed 40 km/hr along Stones Road. The Logistics Team also had direct conversations with Veolia and Ledacon to address this issue. The community member was advised of the outcome and was satisfied with the actions taken.
August	Grievance 0045671 1 Complaint received.	Complaints or communications received through Grievance 0045671 are reported separately to this process.
28/07/2022	A community member called the Community Call Line at 11.25 pm regarding “engine noise” coming from the pit top.	An investigation was conducted by Operations personnel confirming the noise at that time was coming from a load haul dump (LHD) machine carrying equipment into the mine from 10.15 pm to 11.20 pm. The activity ceased at the time of the phone call. The Community Team contacted the resident to inform the outcome of the investigation.
16/07/2022	A community member sent an SMS on Saturday 16 July 2022 at 10:32 pm to advise South32 about noisy trains that weekend, specially noted one at 6:13 pm on Saturday.	Logistics Team arranged random noise audits on 17 and 18 July. They identified two units emitting noise. The units were removed from service and inspected by the wagon maintainers. Community Team contacted the resident and informed the outcome of the investigation.
July	Grievance 0045671 2 Complaints received.	Complaints or communications received through Grievance 0045671 are reported separately to this process.

Appendix 5: Dendrobium Mine Long-Term Environmental Monitoring Data

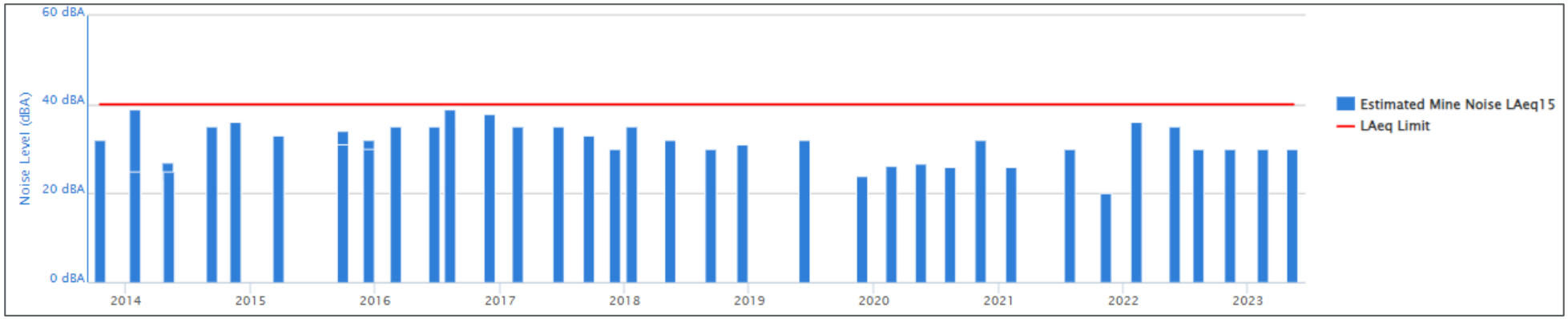
Noise Monitoring Results

R1

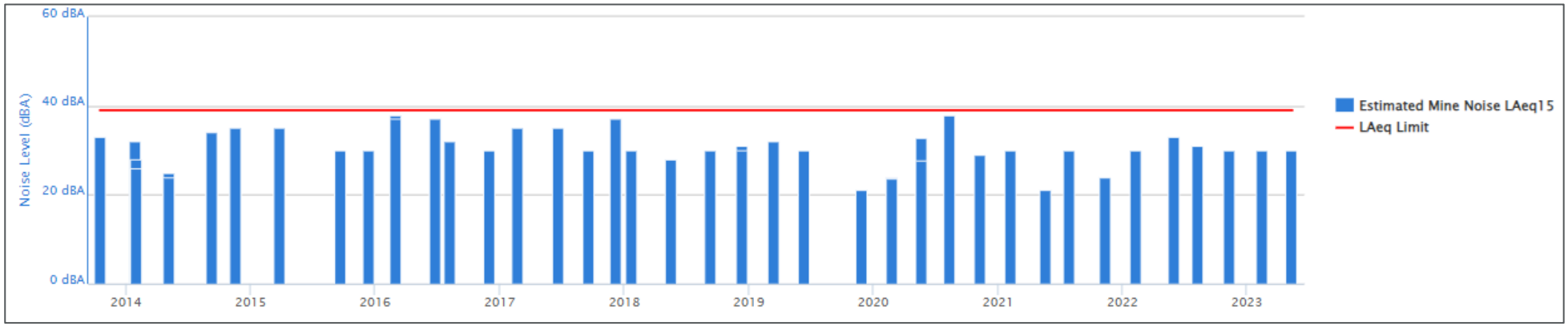
Day



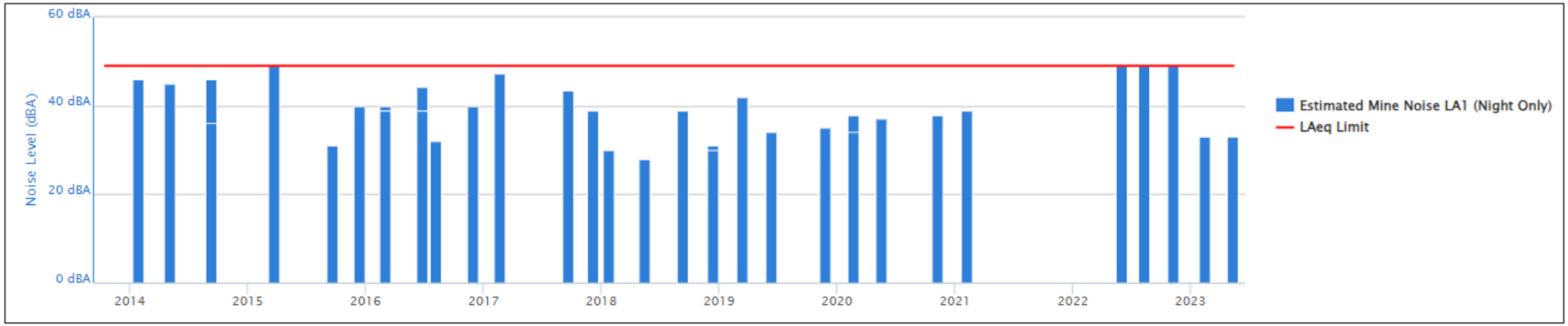
Evening



Night – LAeq 15

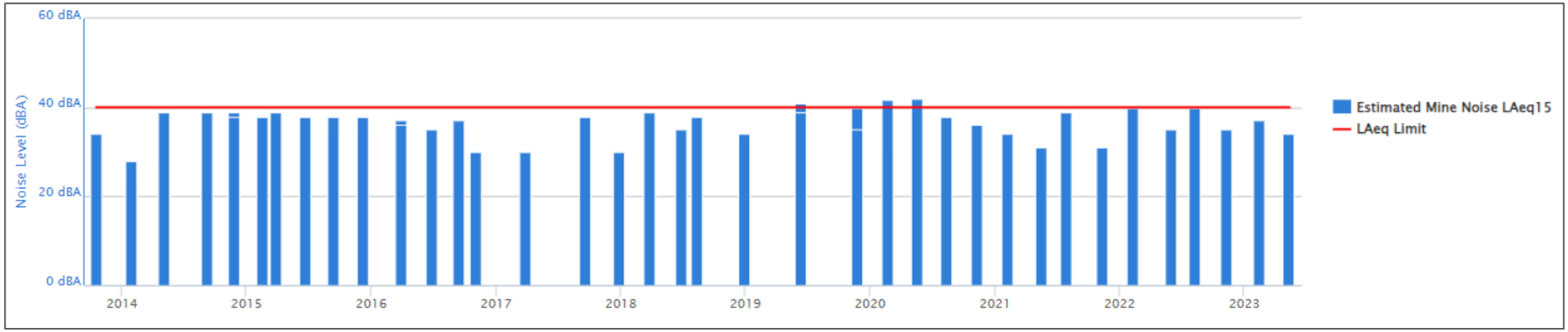


Night – LA1



R6A

Day



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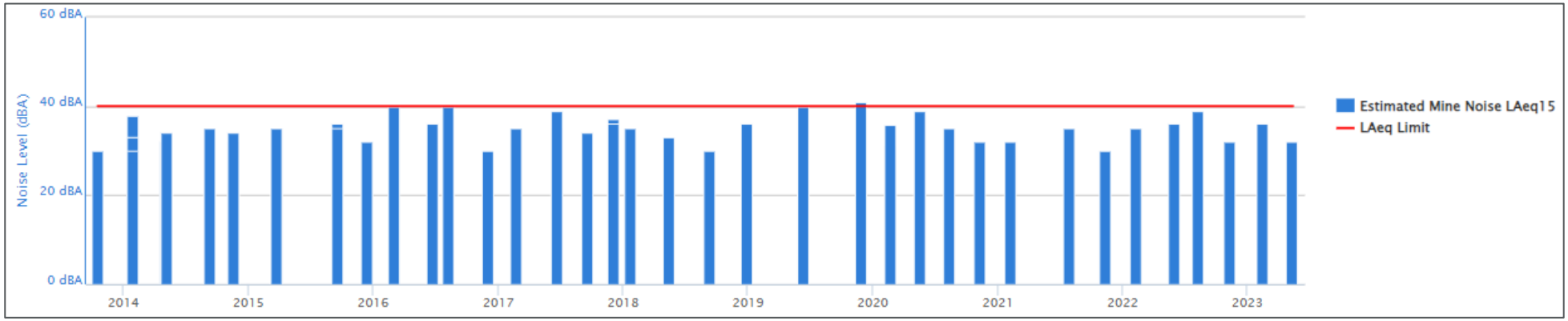
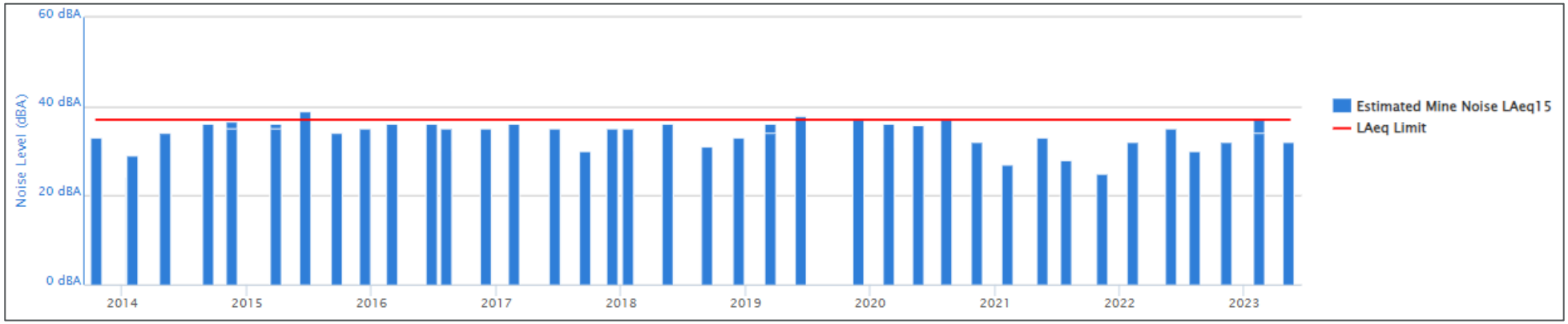
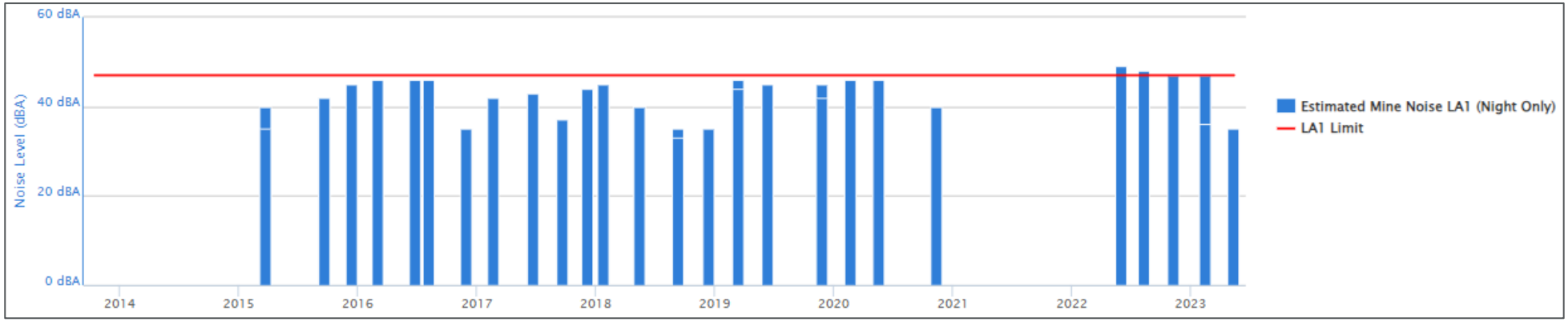


Night LAeq 15

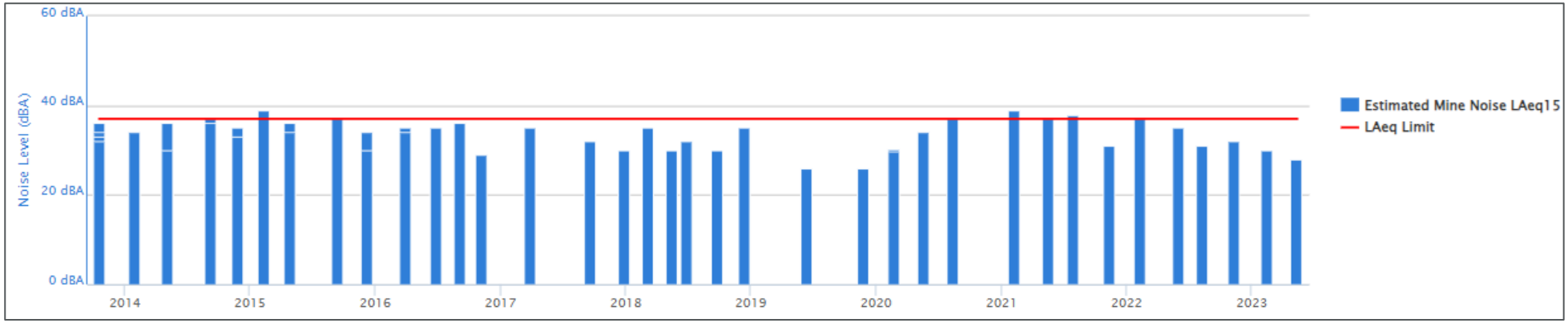


Night – LA1



R39A

Day



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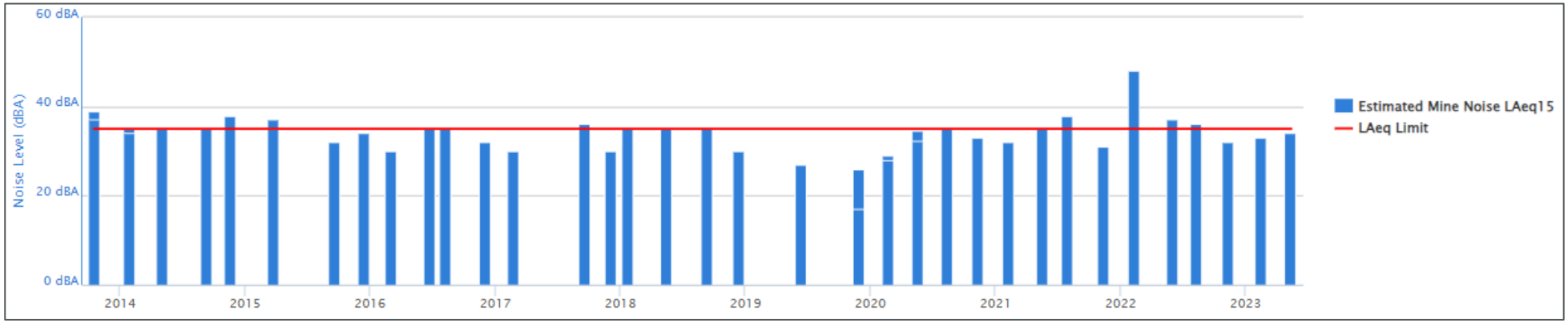
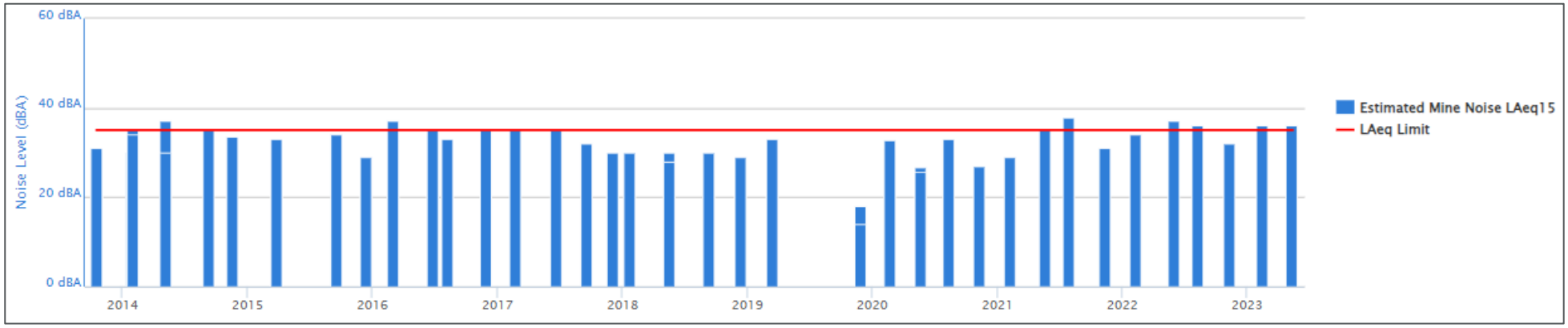
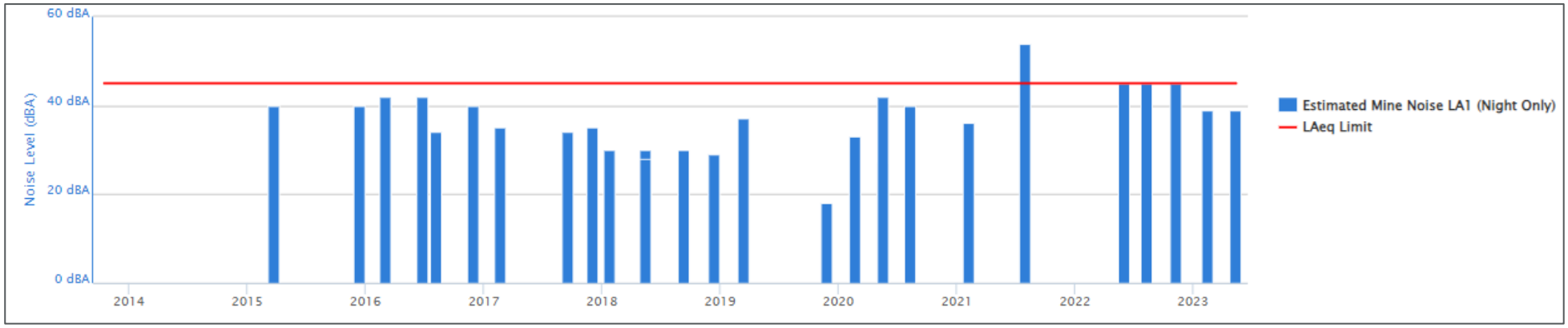


Night LAeq 15



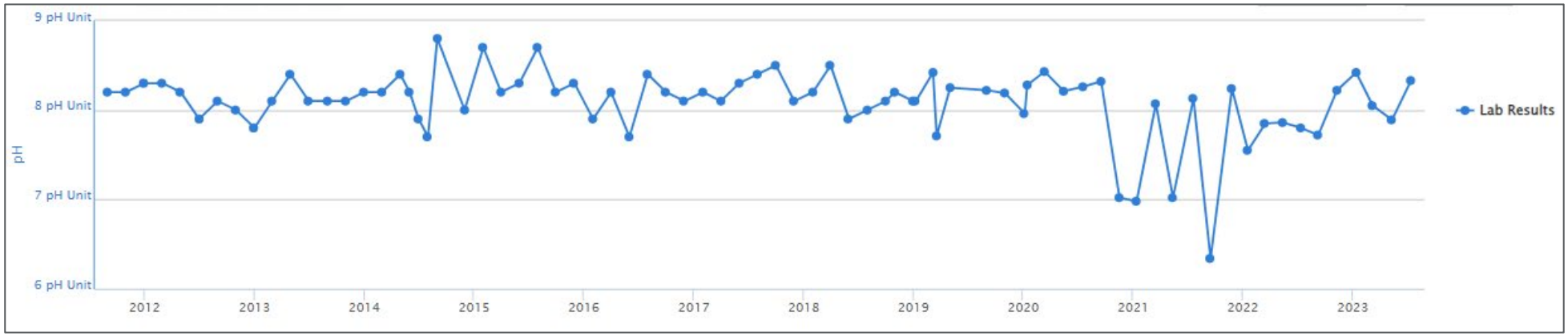
Night – LA1



Water Quality Monitoring Results

DEN 7

pH



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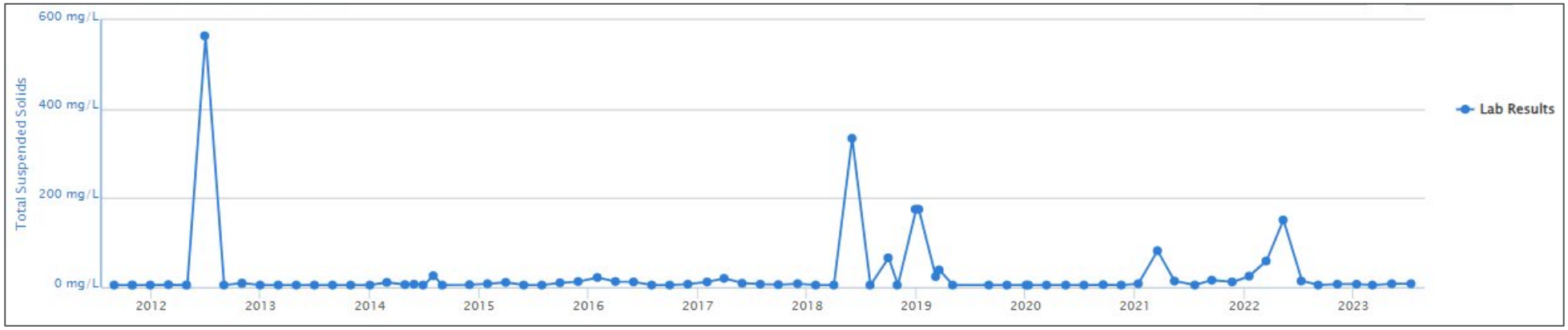
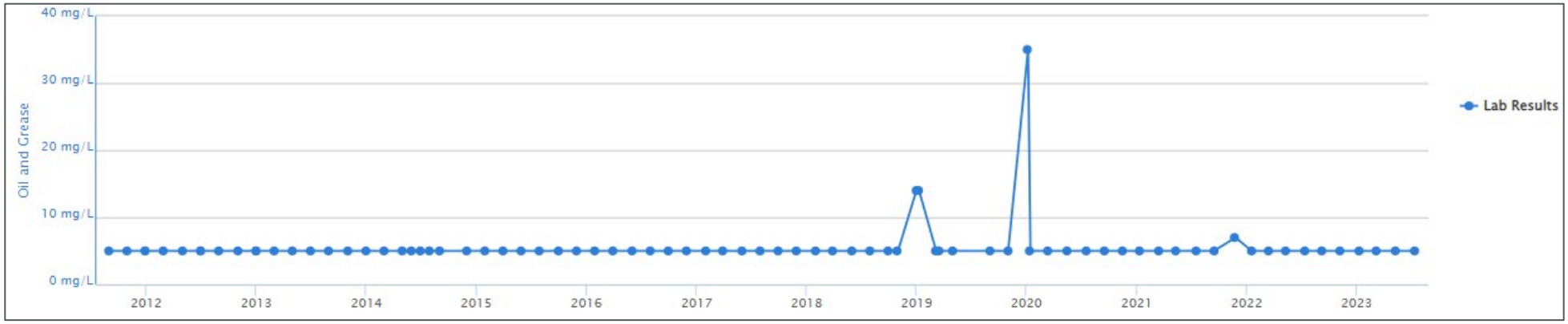
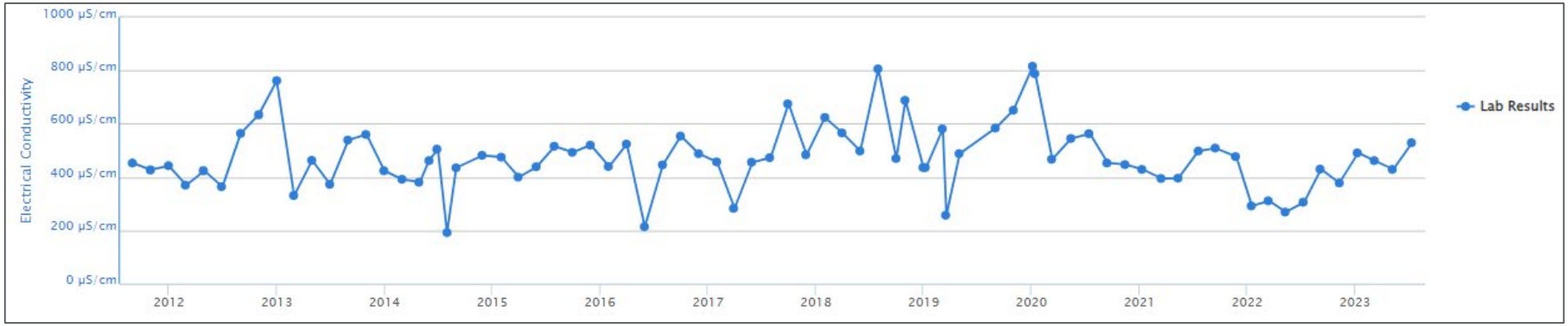


Oil and Grease

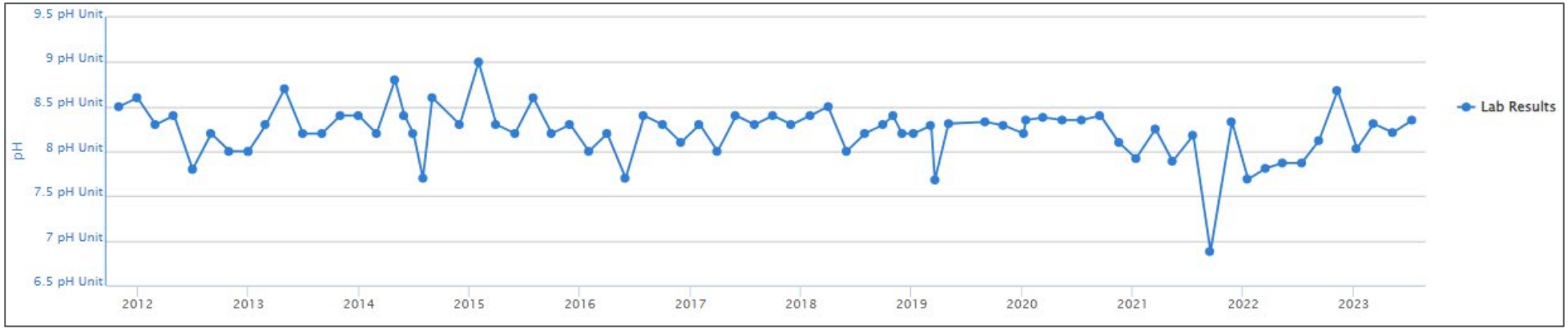


Electrical Conductivity

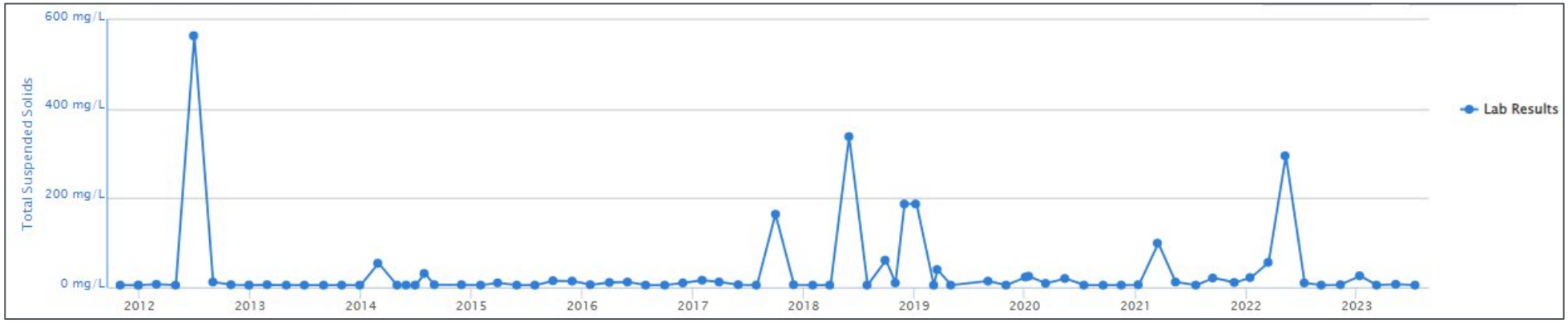


DEN 10

pH



Total Suspended Solids



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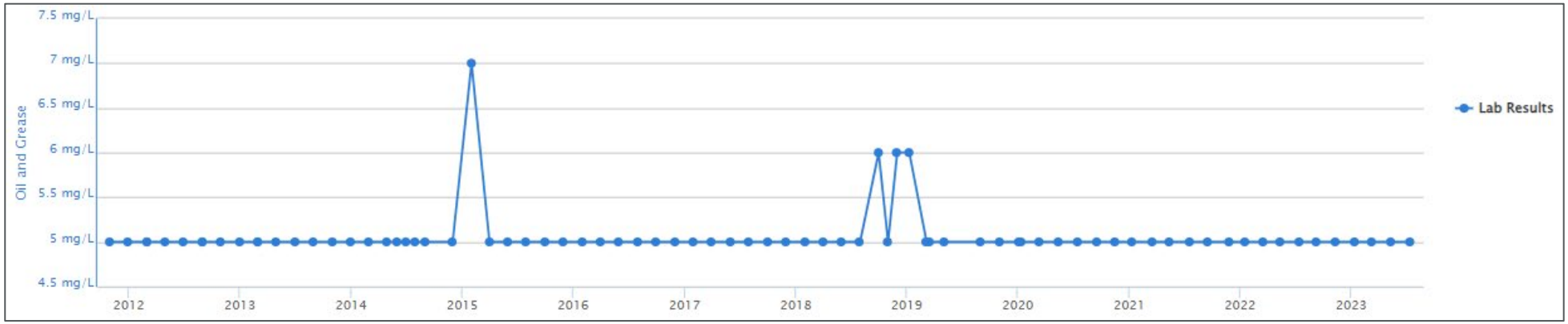

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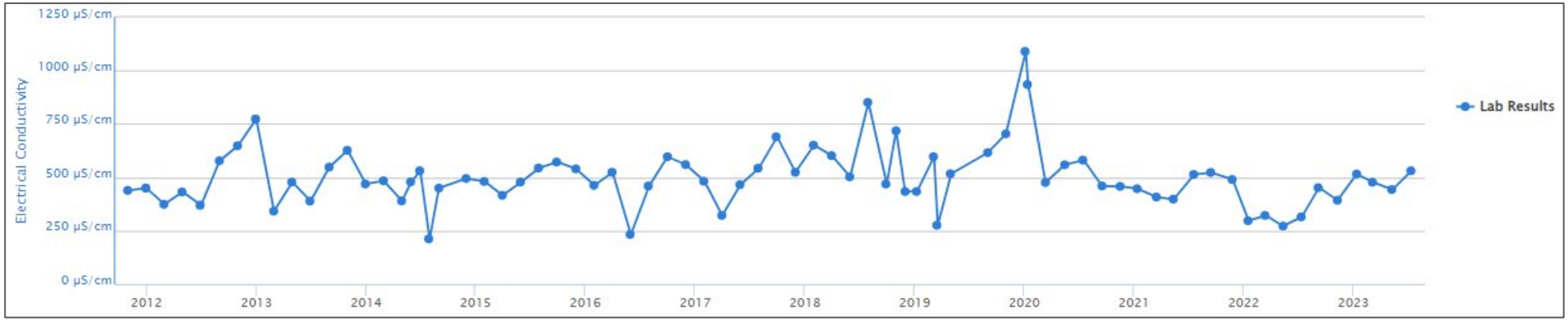
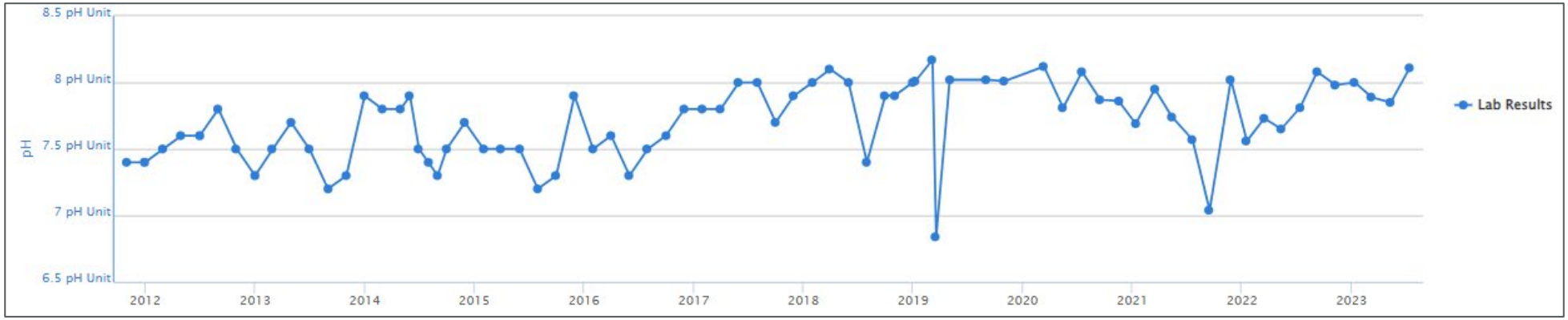


DEN 12

pH



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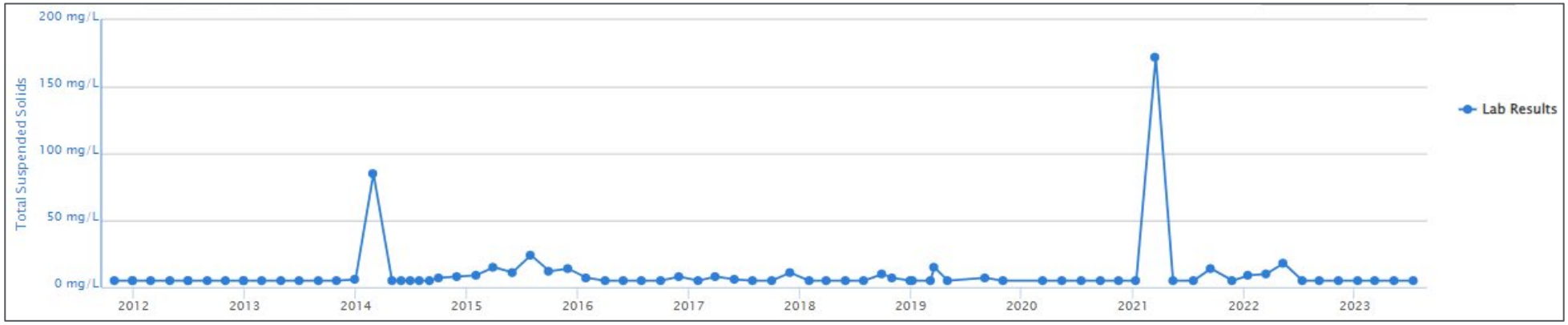

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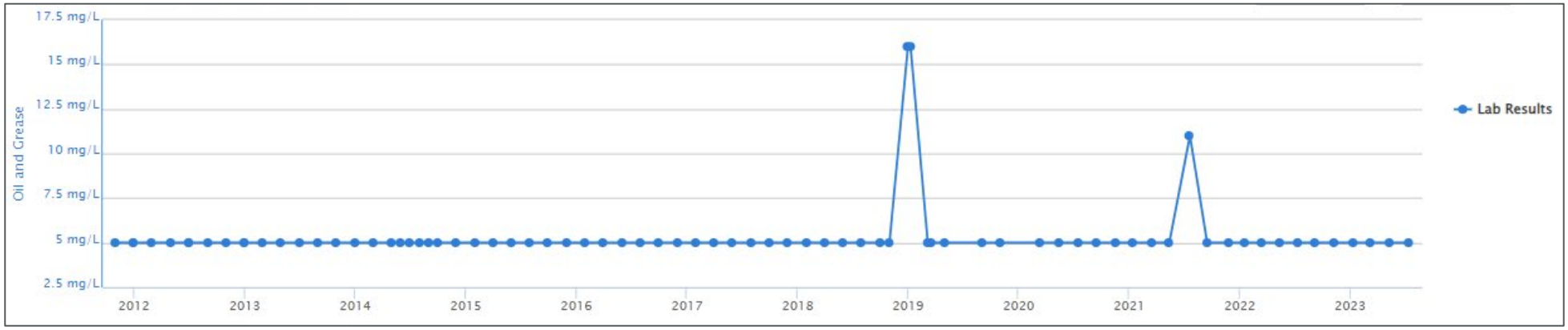

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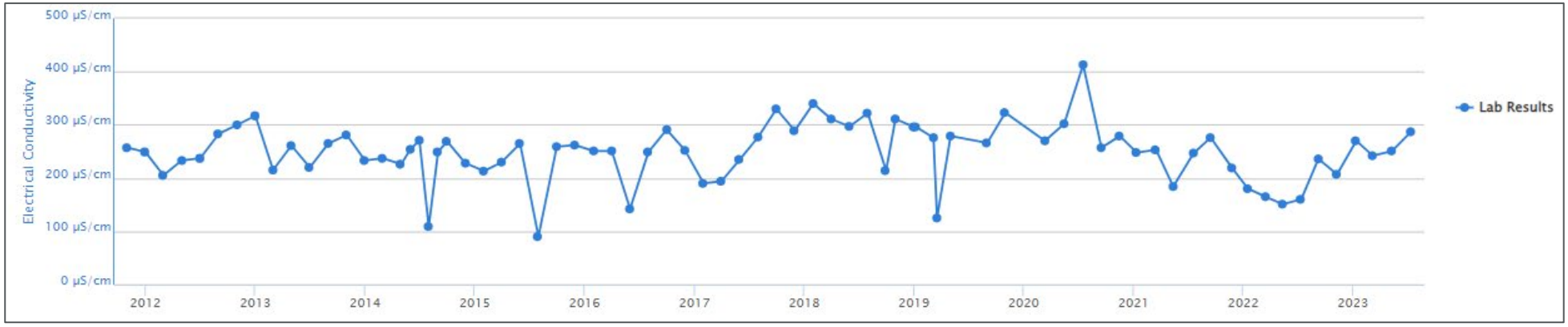
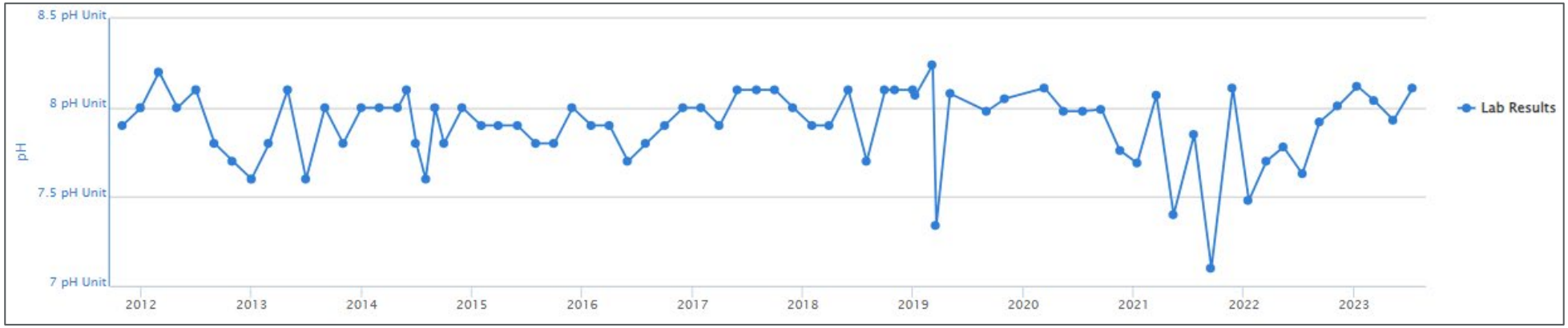


DEN 13

pH



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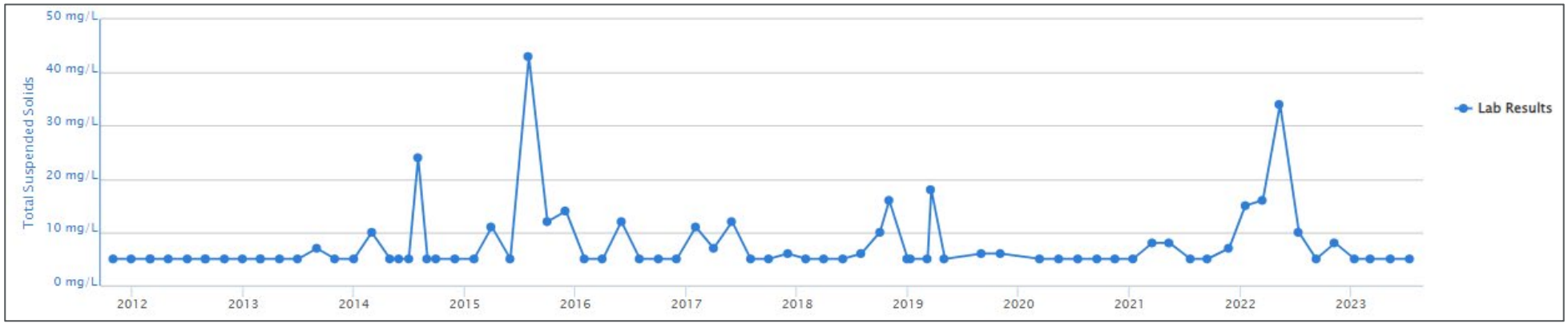

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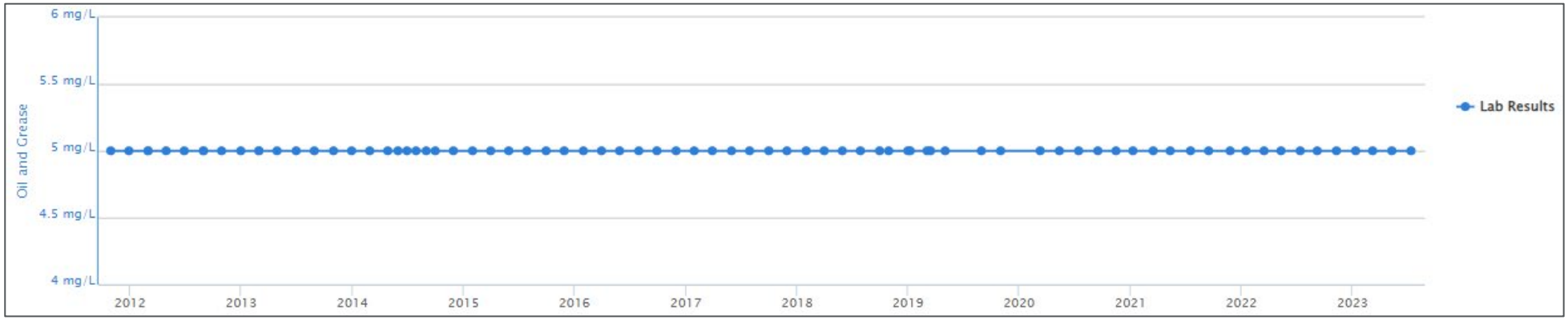

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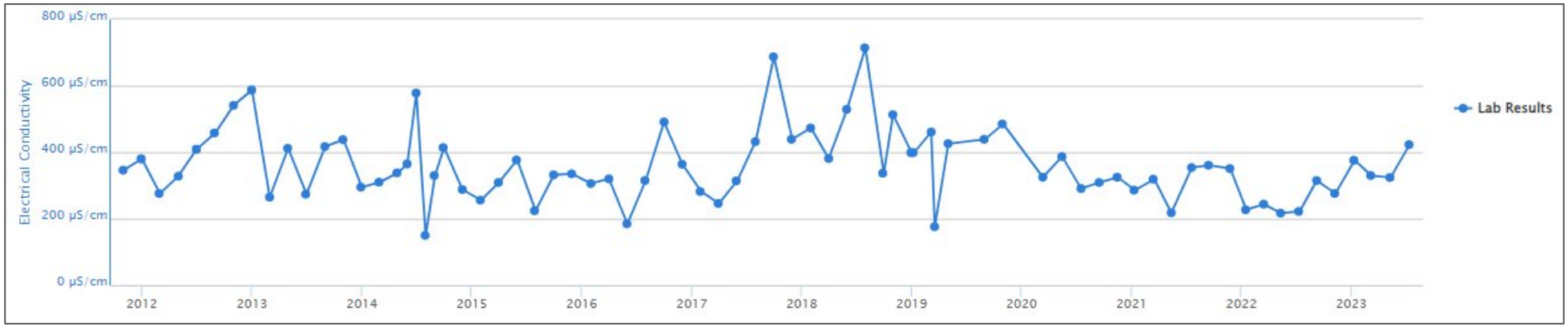
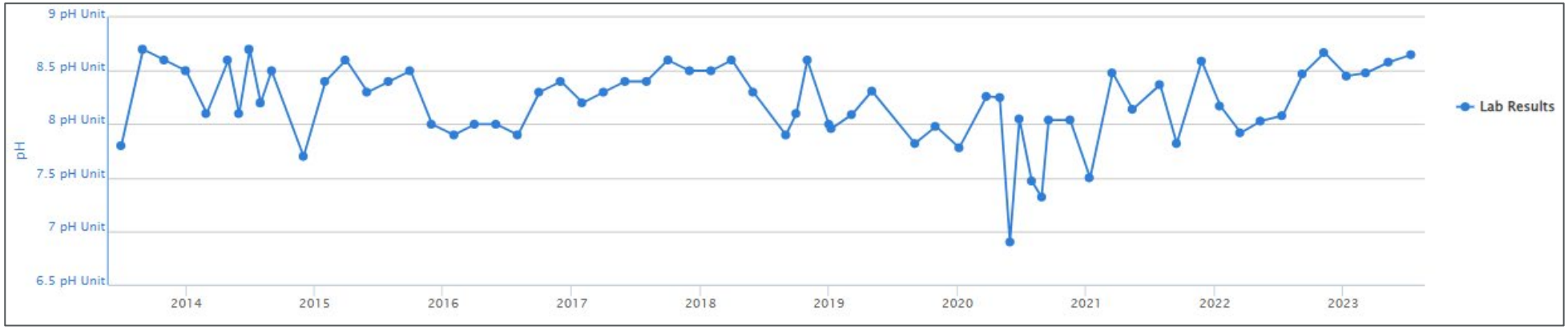


DEN-PTSP

pH



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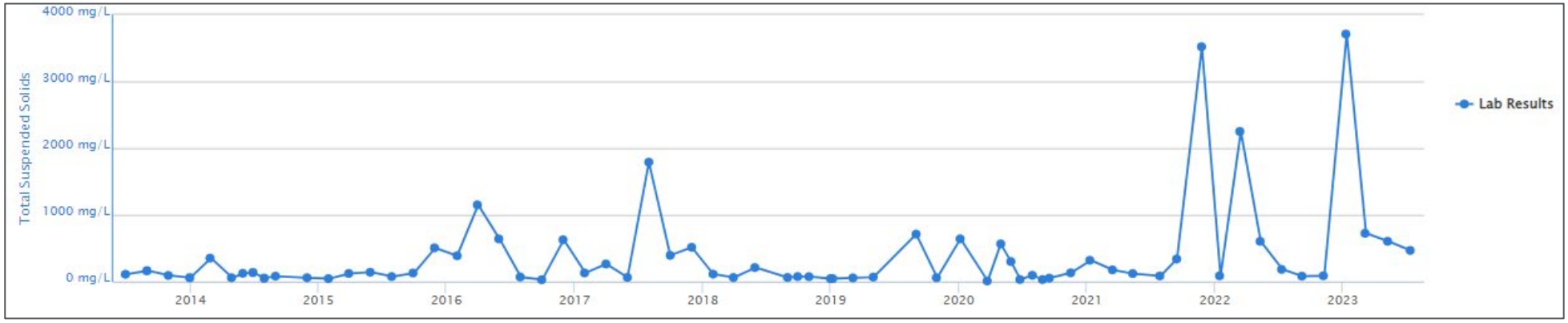

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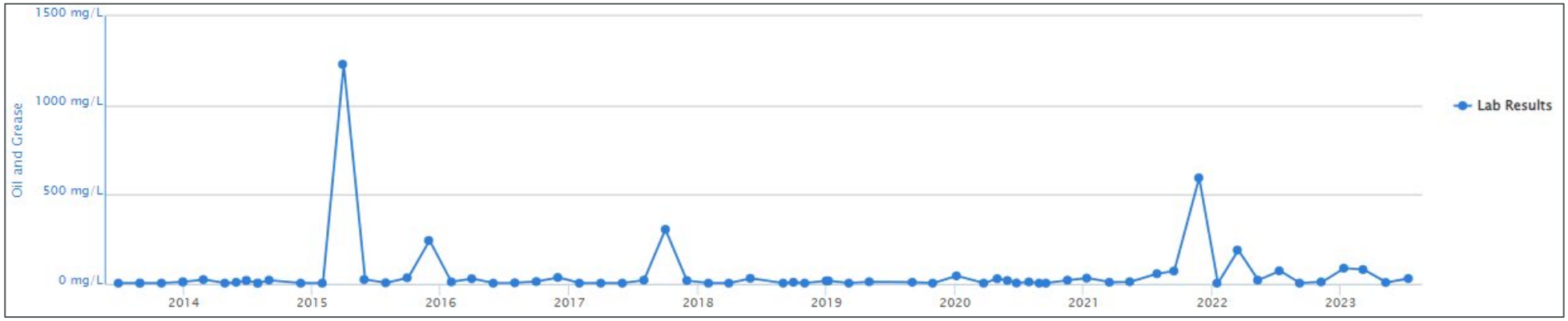
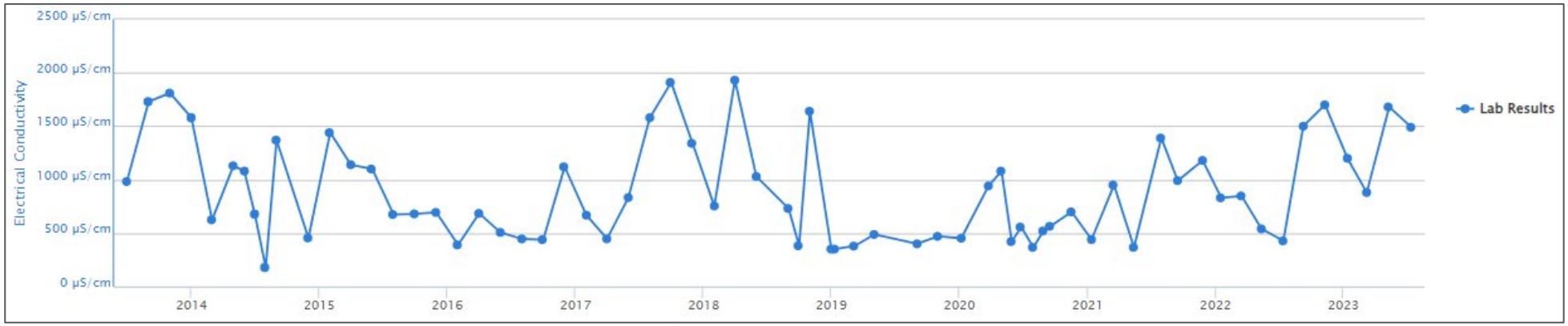


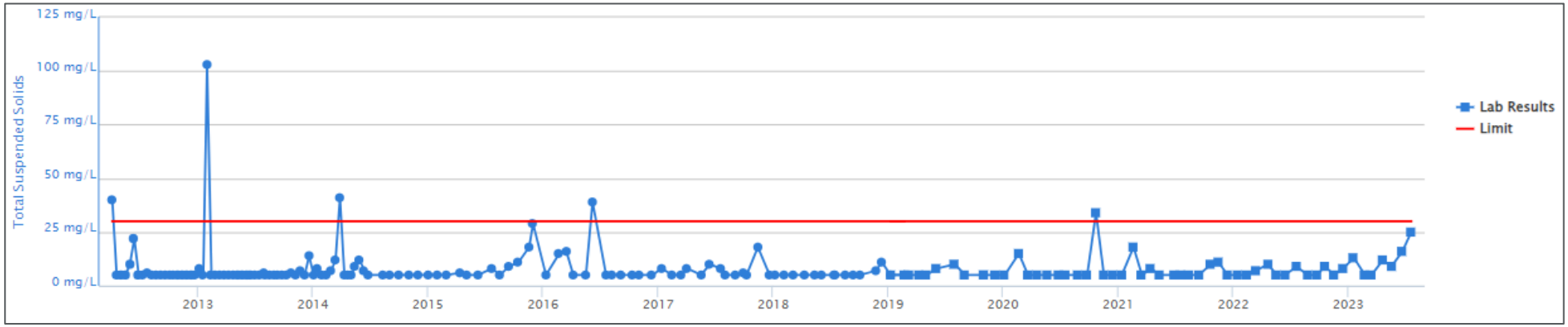
Electrical Conductivity



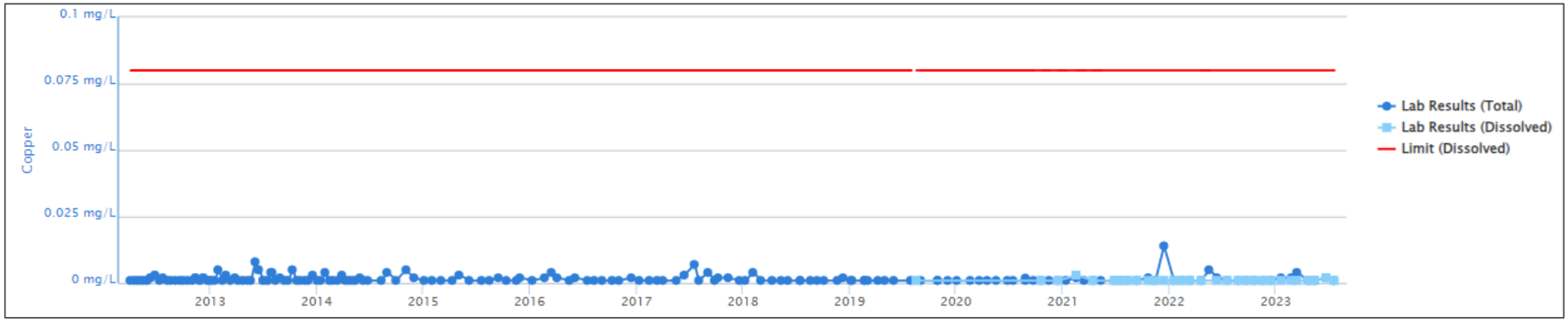
LDP 5

pH

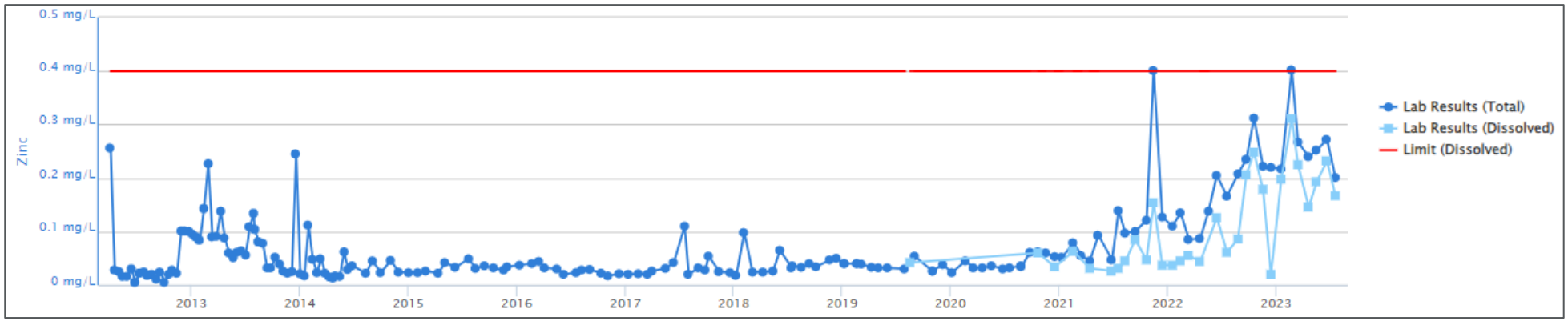
Total Suspended Solids



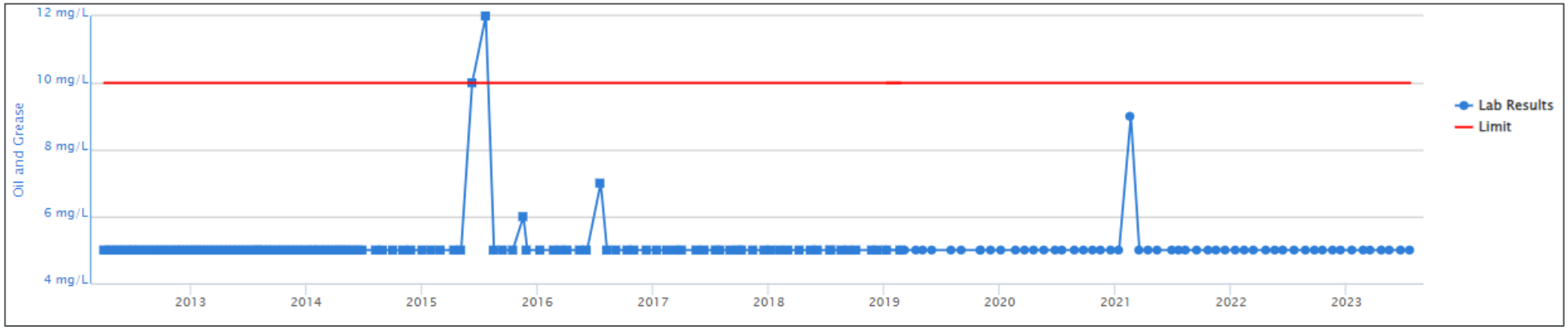
Copper


0.1 mg/L
0.075 mg/L
0.05 mg/L
0.025 mg/L
0 mg/L
Copper
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Lab Results (Total)
Lab Results (Dissolved)
Limit (Dissolved)

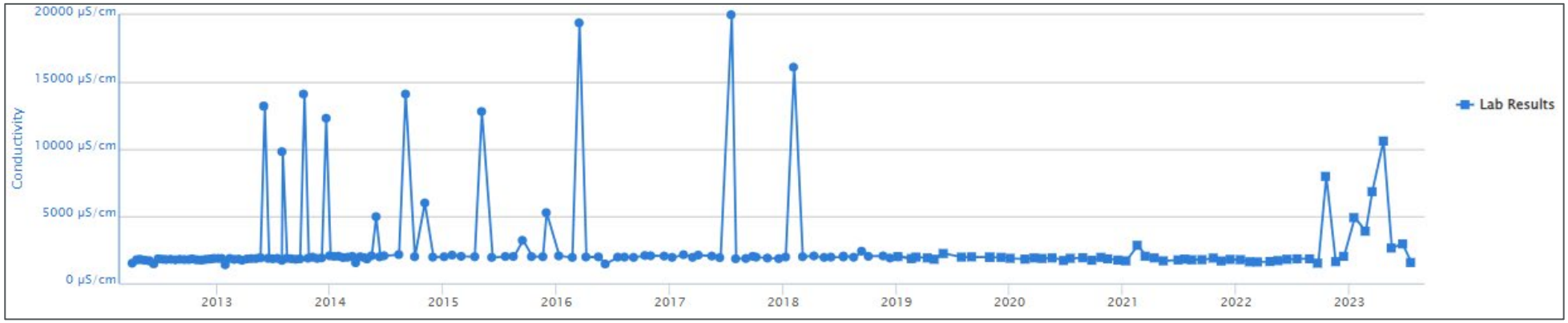
Zinc


0.5 mg/L
0.4 mg/L
0.3 mg/L
0.2 mg/L
0.1 mg/L
0 mg/L
Zinc
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Lab Results (Total)
Lab Results (Dissolved)
Limit (Dissolved)

Oil and Grease



Conductivity



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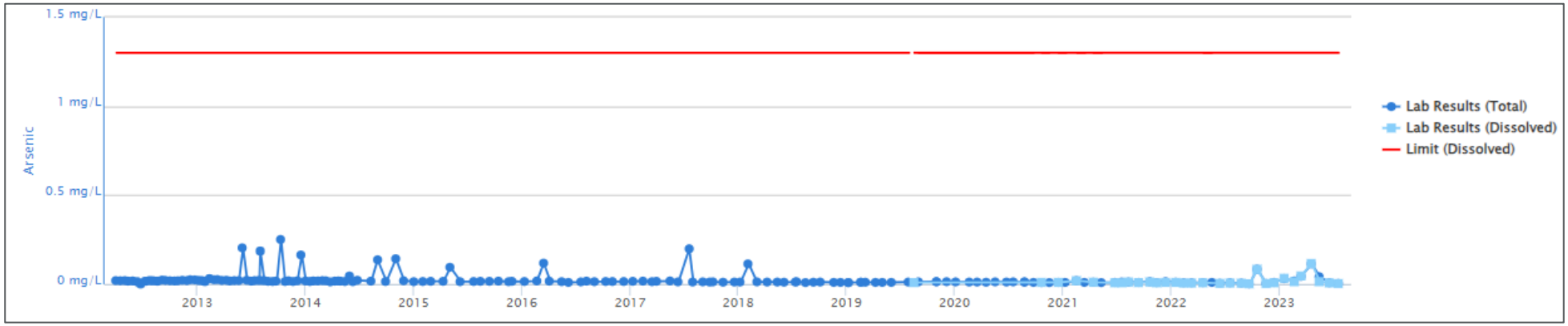
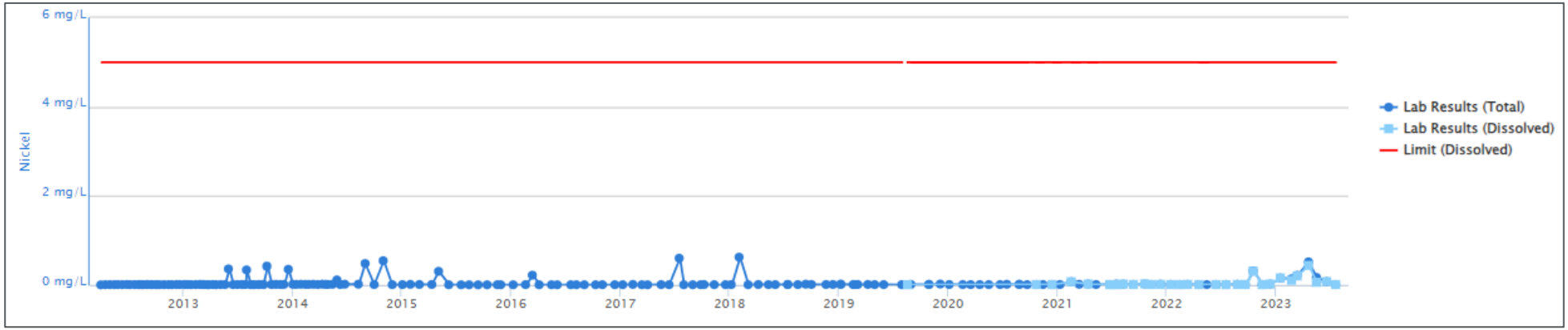
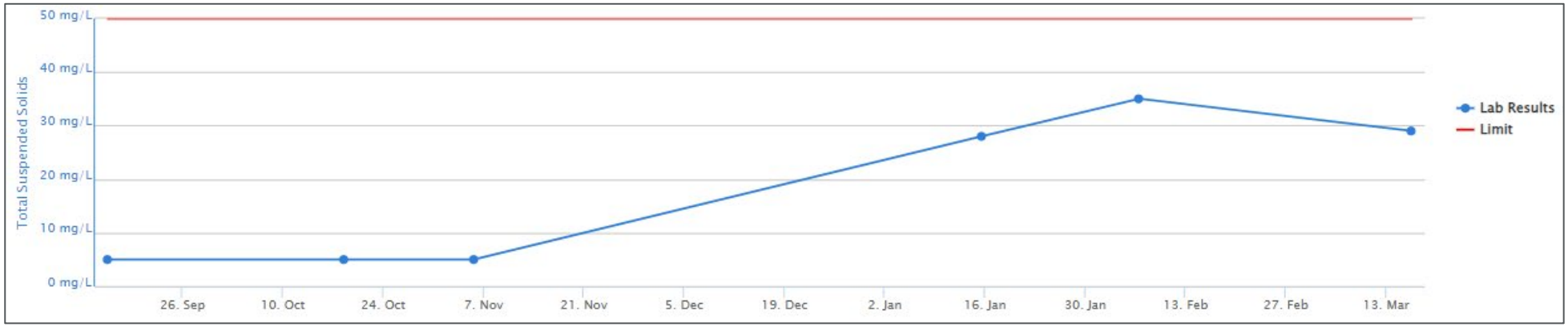


Nickel

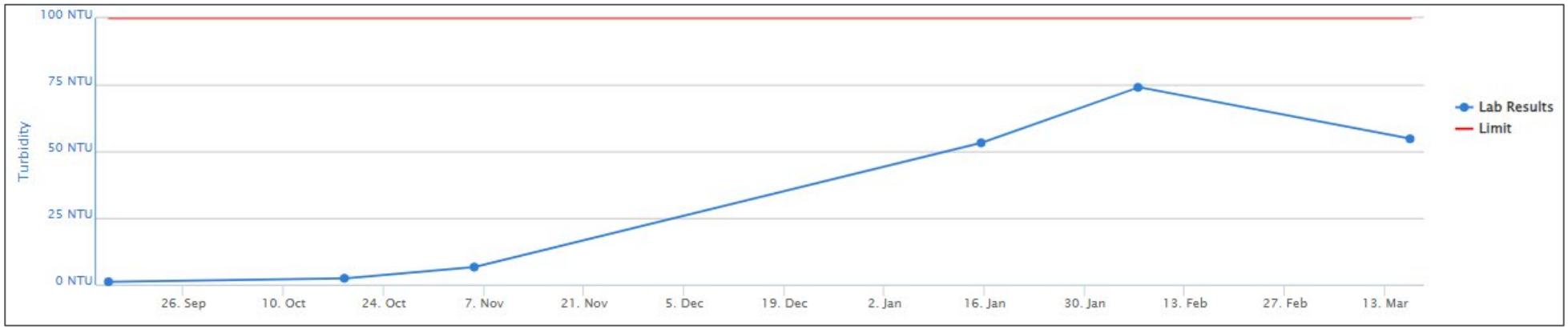


LDP 29

Total Suspended Solids



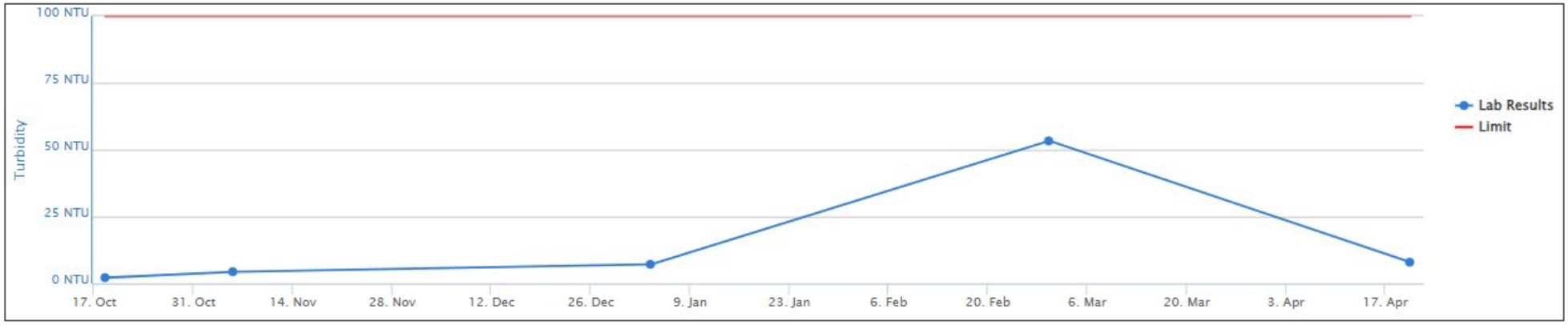
Turbidity



LDP 31

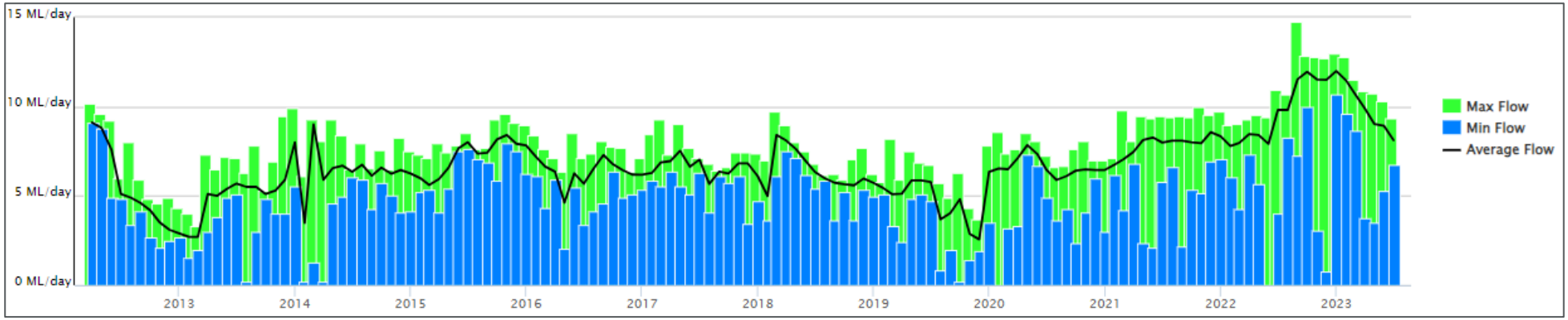
Total Suspended Solids

Turbidity

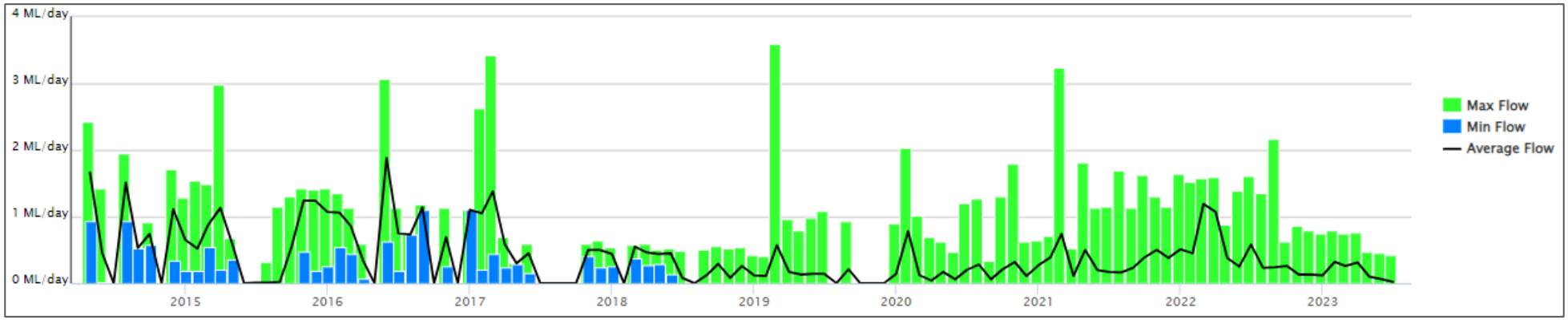


Water Discharge Volume Results

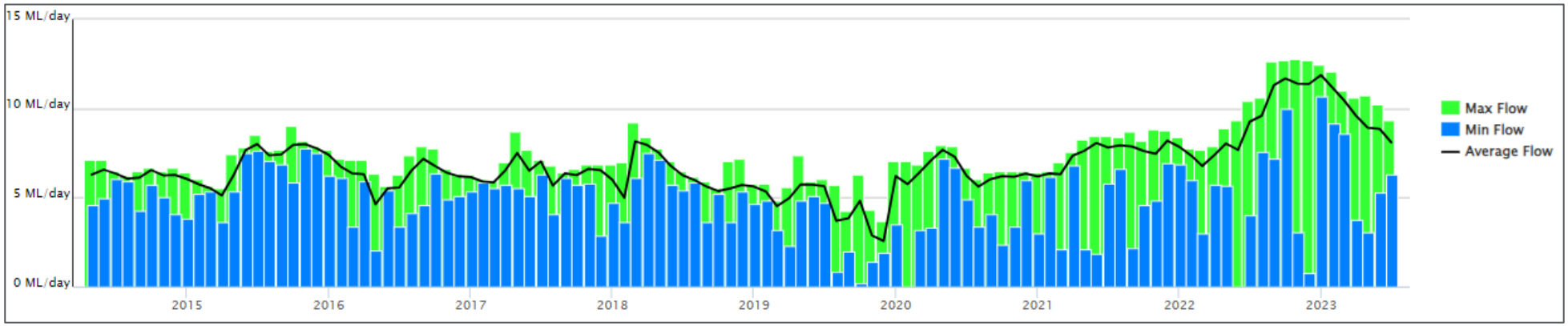
LDP 5



Point 25



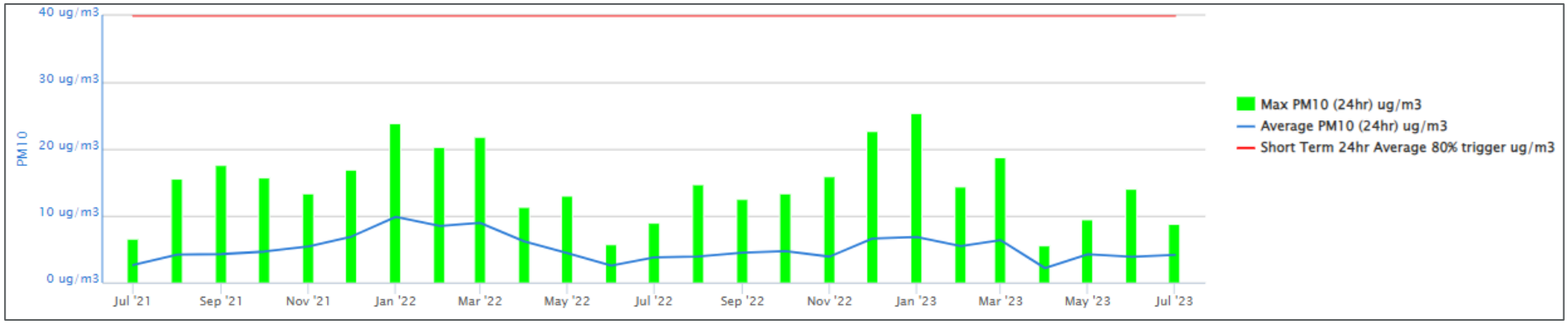
Point 24



Air Quality Monitoring

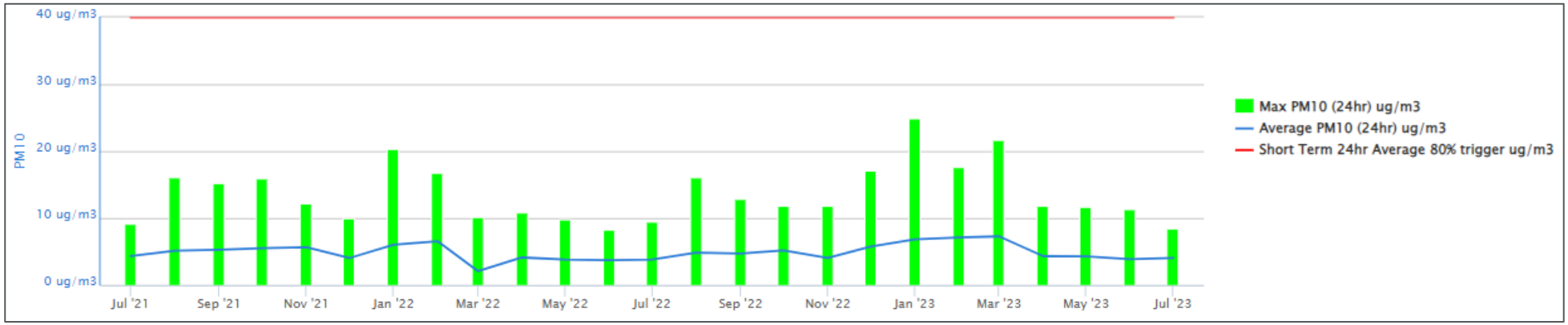
Point 20

Photometer PM_{10}



Point 21

Photometer PM_{10}



Previous Monitoring Data

Sites that have been previously monitored, but have now ceased, can be found within previous Annual Reviews and on the IMC website here.

Appendix 6: Subsidence Monitoring Program - Dendrobium Mine

SMP Commitments for the Reporting Period	Monitoring Frequency	Monitoring Undertaken
Subsidence Monitoring		
Airborne Laser Scanning (ALS) over Areas 3A and 3C – including 3D Digital Terrain Model (DTM)	ALS to be undertaken at conclusion of each longwall	LW19: 28/4/2023
Swamp Cross Lines	Prior to mining influence and at the conclusion of mining influence, and monthly, 100 m prior to and 400 m past the active mining face	Swamps: **LW19:** 2/8/2022, 30/8/2022, 18/10/2022, 15/11/2022, 23/11/2022, 5/5/2023
Tributary Cross-Lines		Tributary surveys: **LW19**: 5/8/2022, 5/5/2023. **LW21**:10/3/2023, 11/5/2023, 30/5/2023, 22/6/2023
Wongawilli Creek Cross Lines	Prior to mining influence and at the conclusion of mining influence	Wongawilli Closure Lines: LW19:5/8/2022, 5/5/2023. LW21: 11/5/2023
Sandy Creek Waterfall (SCW)	Prior to mining influence and at the conclusion of mining influence, and weekly for 600 m of extraction or as advised by the SCW technical committee	Sandy Creek Waterfall: **LW19**: 20/7/2022, 28/7/2022, 2/8/2022, 9/8/2022, 15/8/2022, 23/8/2022, 30/8/2022, 7/9/2022, 13/9/2022, 20/9/2022, 18/10/2022, 10/11/2022, 12/1/2023, 12/4/2023. **LW21**: 6/6/2023
TransGrid	Prior to mining influence and at the conclusion of mining influence, and weekly, 100 m prior to and 400 m past the active mining face (LW19) weekly for 600 m of extraction (LW21)	TransGrid: **LW19** - towers 13-17: 23/8/2022, 13/9/2022, 1/11/2022, 9/11/2022, 15/11/2022, 23/11/2022, 29/11/2022, 6/12/2022, 12,12/2022, 21/12/2022, 28/12/2022, 4/1/2023, 11/1/2023, 18/1/2023, 25/1/2023, 1/2/2023, 6/2/2023, 15/2/2023, 21/2/2023, 1/3/2023, 8/3/2023, 16/3/2023, 21/3/2023, 5/4/2023, 12/4/2023, 19/4/2023, 26/4/2023 **LW21** - towers 17-21: 26/4/2023, 3/5/2023, 9/5/2023, 16/5/2023,
Dendrobium 3D GNSS network - Farfield	Prior to mining influence and at the conclusion of mining influence	

		24/5/2023, 31/5/2023, 6/6/2023, 14/6/2023, 21/6/2023, 28/6/2023 Dendrobium 3D GPS network: **LW19**: 30/8/2022, 5/5/2023. **LW21**: 10/4/2023
Water Courses		
Observational, Photo Point and Water Monitoring		
Avon Dam, Native Dog Creek, Wongawilli Creek, Sandy Creek, Donalds Castle Creek, WC6, WC7, WC8, WC9, WC12, WC15, WC20, WC21, WC24, WC24A, WC26, WC26A, LC5, LC5A, LC6, LC7, CR36, SC7, SC10, LA2, LA3, LA4, LA4A, LA5, ND1 and ND1C. Reference Sites: LC5, LC7B, WC11, SC9A, SC10A, NDC1 and DC10 Swamps 10, 11, 13, 14, 23, 35a, 35b, 149, 150 and 151	Monthly two years pre and post mining, weekly when longwall is within 400 m of monitoring site	As per SMP commitments
Water Quality		
Wongawilli Creek and associated tributaries WWU1, WWU4, WC_Pool 38, WC_Pool 20, WC_Pool 104, WC_Pool 46, WC_Pool 49, WC_Channel 14, WC_Pool 49, Wongawilli Ck (FR6), WC20_Pool 8, WC21_Pool 5, WC21_Pool 30, WC21_Pool 53, WC12_Pool 1, WC15_Pool 2, WC15_Pool 9, WC15_Pool 28, WC7_Pool 1, WC17_Pool 0, WC13_Pool 3, WC14_Pool 3, WC24_Pool 10, WC26_Channel 4 **Lake Avon and associated tributaries** LA3_Pool 4, LA2_Pool 5, LA1, LA_1, LA4_S1, LA4_S2, LA5_S1, LA5_S2, **Lake Cordeaux and associated tributaries** LC_1, LC6_Rockbar 1, LC7_Pool 2 **Donalds Castle Creek** Donalds Castle Ck (FR6), DCL3, DC_Pool 22, DC13_Pool 2b, DCU **Sandy Creek and associated tributaries**	Monthly monitoring during and post mining for two years or until required	As per SMP commitments

SCk_Rockbar 5, Sandy Creek Arm, SC10C_Pool 1, SC10_Rockbar 3, SC7_S1, **Native Dog and associated tributaries** NDC_Pool 1, ND1_Pool 2, NDT1 **Reference Sites** LC5_S1, CR36_S1, NDC1		
Flow		
Wongawilli Creek and associated tributaries WWU, WWL, WWL_A, WC21S1, WC14S1, WC15S1 and WC12S1, WC20S1, WC20S2, WC24S1, WC26S1, WC26S2 **Donalds Castle Creek and associated tributaries** DCU, DC13S1 and DCS2 **Lake Avon and associated tributaries** LA2S1, LA3S1 and LA4S1 **Lake Cordeaux and associated tributaries** LC5S1, LC6S1 **Native Dog Creek and associated tributaries** NDT1S1 **Sandy Creek and associated tributaries** SCL2, SC10S1, SC10CS1 **Reference** O'Hares Creek at Wedderburn, LC5S1, CR36S1	Continuous one-hour logging intervals	As per SMP commitments
Aquatic Ecology		
Macroinvertebrate sampling and assessment using the AUSRIVAS protocol and quantitative sampling using artificial collectors Individuals of the genus Austrocorduliidae and Gomphomacromiidae are identified to species level if possible Fish are sampled using back-pack electrofisher and baited traps	Two baseline monitoring campaigns prior to mining during autumn and spring Monitoring during mining in autumn and spring Monitoring post-mining for two years or as otherwise required	As per SMP commitments

	Monitoring target sites as mining progresses through the domain	
Swamps		
Observational, Photo Point and Water Monitoring		
Impact Sites: Swamps 7, 9, 10, 11, 12, 13, 14, 15A, 15B, 23, 34, 35A, 35B, 95, 96, 144, 145, 146, 147, 148, 149, 150, 151, 153 and 154 Reference Sites: Swamps 2, 7, 15a, 22, 24, 25, 33, 84, 85, 86, 87 and 88	Monthly two years pre and post mining, weekly when longwall is within 400 m of monitoring site Reference sites six-monthly	As per SMP commitments
Erosion Monitoring		
Impact Sites: Swamps 11, 12, 13, 14, 15A, 15B, 23, 34, 35A, 35B, 95, 96, 146, 147, 148, Reference Sites: Swamps 2, 7, 15a, 22, 24, 25, 33, 84, 85, 86, 87 and 88	Ground based surveys to be completed for each longwall after each longwall or to define any new erosions identified by ALS survey	As per SMP commitments
Shallow Groundwater Level		
Impact Sites: Swamps 7, 9, 11, 12, 13, 14, 15A, 15b, 23, 34, 35A, 35B, 96, 144, 145, 146, 147, 148, 149, 150, 151, 153 and 154 Reference Sites Swamps 2, 7, 22, 24, 25, 33, 84, 85, 86, 87 and 88	For open hole sites: Monthly baseline monitoring Weekly monitoring during active subsidence Monthly monitoring post mining for two years to be reviewed annually For instrumented sites: Automatic groundwater level monitoring, during and post-mining (four-hour interval or similar) Monitoring post mining for five years to be reviewed annually	As per SMP commitments

Soil Moisture		
Impact Sites: Swamps 7, 9, 11, 13, 14, 15A, 15B, 23, 34, 35A, 35B, 96, 144, 145, 146, 147, 148, 149, 150, 153 and 154 Reference sites: Swamps 2, 7, 22, 24, 25, 33, 84, 85, 86, 87 and 88	Monthly baseline for two years prior to mining Weekly monitoring when longwall is within 400 m of swamp Six-monthly monitoring for two years post mining For instrumented sites: Logged soil moisture level monitoring (four-hour intervals or similar) Monitoring post mining for five years to be reviewed annually	As per SMP commitments
Terrestrial Flora – Composition and Distribution of Species		
15 m transects consisting of 30 0.5 m X 0.5 m quadrats. The monitoring records: Presence of all species within each quadrat Percentage foliage cover and vegetation height Observations of dieback or changes in community structure Photo point monitoring at each transect	Surveys are undertaken in spring and autumn each year	As per SMP commitments
Terrestrial Flora – Swamp Size and Ecosystem Function		
Detailed mapping including use of LiDAR data to indicate the location and extent of upland swamp boundaries followed by ground-truthing of these boundaries and vegetation sub-communities	Baseline mapping prior to mining Annual repeat mapping or as determined by observational monitoring	As per SMP commitments
Terrestrial Fauna – Threatened Frog Species		
Surveys are conducted along creeks with a focus on features susceptible to impacts: Potential breeding habitat for Littlejohn's Tree Frog and Giant Burrowing Frog will be targeted Standardized transects to record numbers of individuals between surveys for each site Tadpole counts to be undertaken as part of the breeding habitat monitoring transects	Surveys are undertaken in optimal periods over the season	As per SMP commitments
Landscape - Targeted Sites		
Clifflines: DA3-CF7, DA3-CF8, DA3-CF15, DA3-CF16, DA3-CF17 and DA3-CF18 Watercourses / Swamps Refer to Dendrobium Area 3 Watercourse and Swamp Monitoring TARP's Fire Trails: Fire Roads 6A, 6Q, 6C and 6F	Baseline monitoring campaign prior to mining Monthly monitoring during subsidence	As per SMP commitments

	Monitoring to continue six-monthly for two years following the completion of mining	
Inspection of Active Mining Area – Landscape Features, Vegetation, Watercourses		
All mapped cliff, steep slopes, and watercourse, swamp and fire trail sites in subsidence area. Refer to Dendrobium Area 3A, 3B and 3C SMP. General observation of active mining areas. During mining recording includes impacts to: Drainage Disturbance of site erosion Aggradations Inundation Rock fracturing Changes in runoff Changes in vegetation Impacts to fauna / fish Rockfalls Soil cracking Slumping	Weekly monitoring when longwall extraction is within 400 m	As per SMP commitments
Terrestrial Fauna		
A number of sites located across and around Areas 2, 3A and 3B. Refer to Dendrobium Area 3B SMP. Monitoring parameters include: Vegetation communities Vegetation condition Changes in vegetation Tree health Swamp vegetation Threatened species Control sites	Two baseline monitoring campaigns one year prior to mining during autumn and spring Six-monthly monitoring during mining in autumn and spring Six-monthly monitoring post mining for two years or as otherwise required	As per SMP commitments
A number of sites located across and around Areas 2, 3A and 3B. Refer to Dendrobium Area 3A SMP. Monitoring parameters include: Species and habitat characteristics Targeted surveys and monitoring of known populations of threatened frog species	Two baseline monitoring campaigns one year prior to mining Six-monthly monitoring during mining Six-monthly monitoring post mining for two years or as otherwise required	As per SMP commitments
Cultural Heritage		

Re-recording of the principal components identified by Sefton (Sefton 2000) Macro and micro recording using digital photography (Navin Officer 2003) Detailed elevation plans of shelter walls recording structural and surface features including but not limited to the art, graffiti, joints, bedding planes, exfoliation scars, cracks, mineral and microorganism growth, drip line and water seepage locations	Baseline archival recording: prior to longwall mining First impact assessment recording: following initial subsidence movement of the site Sandstone shelter aboriginal sites will be monitored during mining Further impact assessment recording: 12 months after undermining or final subsidence movement of the site.	As per SMP commitments

Appendix 7: Summary of Observed Impacts and Triggers identified during the Reporting Period

Site ID	Impact Type	Feature Affected	Identification Date	Trigger Level	Description	Refer to Impact Report/s Dated
DA3B_LW18_013	Rock Fracturing and Fragmentation	Steep Slope/Step	16/08/2022	1	Rock fracturing and fragmentation to steep slope/step	19/08/2022
DA3B_LW18_014	Rock Fracturing	Steep Slope/Step	16/08/2022	2	Rock fracture to steep slope/step north of LA2.	19/08/2022
DA3B_LW18_015	Rock Fracturing	Steep Slope/Step	16/08/2022	1	Rock fracturing to steep slope/step north of LA2.	19/08/2022
DA3B_LW18_016	Rock Fracturing	Steep Slope/Step	16/08/2022	2	Rock fracturing to steep slope/step north of LA2.	19/08/2022
DA3B_LW18_017	Rock Displacement and Rockfall	Steep Slope/Step	16/08/2022	1	Rock displacement and rockfall to steep slope/step north of LA2.	19/08/2022
DA3B_LW18_018	Rock Fracturing and Rockfall	Steep Slope/Step	16/08/2022	1	Rock fracturing and rockfall to steep slope/step north of LA2.	19/08/2022
DA3B_LW18_019	Rock Fracturing	Steep Slope/Step	16/08/2022	1	Rock fracture to steep slope/step north of LA2.	19/08/2022
DA3B_LW18_020	Rockfall	Steep Slope/Step	16/08/2022	1	Rockfall to steep slope/step north of LA2.	19/08/2022
DA3B_LW18_021	Rock Fracturing	Rock Outcrop	16/08/2022	2	Rock fracturing to rock outcrop north of LA2.	19/08/2022
DA3B_LW18_022	Rockfall	Steep Slope/Step	16/08/2022	1	Rockfall to steep slope/step north of LA2	19/08/2022
DA3B_LW18_023	Soil Cracking	Bushland	16/08/2022	2	Soil cracking in bushland north LA2.	19/08/2022
DA3B_LW18_024	Iron Staining	LA3	16/08/2022	1	Iron Staining in tributary LA3	19/08/2022
DA3A_LW19_001	Rock Fracturing	Steep Slope/ Step	3/08/2022	1	Rock fracturing to a steep slope/ step, east of Fire Road 6F.	5/08/2022
DA3A_LW19_002	Rock Fracturing	Steep Slope/ Step	3/08/2022	2	Rock fracturing to a steep slope/ step, east of Fire Road 6F.	5/08/2022
DA3A_LW19_003	Iron Staining	WC14	16/08/2022	2	Increase in Iron staining at tributary WC14	17/08/2022
DA3A_LW19_004	Rock Fracturing and Fragmentation	Steep Slope/ Step	19/08/2022	1	Rock fracturing to a steep slope/ step, west of Swamp 15b.	23/08/2022
DA3A_LW19_005	Rock Fracturing	Steep Slope/ Step	19/08/2022	1	Rock fracturing to a steep slope/ step, west of Swamp 15b.	23/08/2022
DA3A_LW19_006	Soil Cracking	Bushland	31/08/2022	2	Soil cracking to bushland south of tributary SC10C.	5/09/2022

DA3A_LW19_007	Soil Cracking	Bushland	18/10/2022	1	Soil cracking in bushland between Longwall 19 and Swamp 15b.	20/10/2022
DA3A_LW19_008	Rock Fracturing	Rock Outcrop	7/11/2022	1	Rock fracturing to rock outcrop east of Fire Road 6F.	9/11/2022
DA3A_LW19_009	Rock Fracturing	Rock Outcrop	7/11/2022	1	Rock fracturing to rock outcrop east of Fire Road 6F.	9/11/2022
DA3A_LW19_010	Rock Fracturing	Rock Outcrop	7/11/2022	1	Rock fracturing to rock outcrop east of Fire Road 6F.	9/11/2022
DA3A_LW19_011	Rock Fracturing	Rock Outcrop	7/11/2022	1	Rock fracturing to rock outcrop east of Fire Road 6F.	9/11/2022
DA3A_LW19_012	Rock Fracturing	Rock Outcrop	7/11/2022	1	Rock fracturing to rock outcrop east of Fire Road 6F.	9/11/2022
DA3A_LW19_013	Rock Fracturing and Rock Movement	Steep Slope/ Step	7/11/2022	2	Rock fracturing and rock movement at a steep slope/ step, east of Fire Road 6F. *Coordinates shown here are correct, updated from error in initial report.*	9/11/2022
DA3A_LW19_014	Rock Movement	Boulder	7/11/2022	1	Dislodgement of a boulder east of Fire Road 6F.	9/11/2022
DA3A_LW19_015	Rock Fracturing	Steep Slope/ Step	7/11/2022	2	Rock fracturing to a steep slope/ step, north of Swamp 15a.	9/11/2022 and 22/12/2022 (Update)
DA3A_LW19_016	Rock Fracturing and Rockfall	Steep Slope/ Step	7/11/2022	2	Rock fracturing and small rock fall at a steep slope/ step, east of Fire Road 6F.	9/11/2022 and 22/12/2022 (Update)
DA3A_LW19_017	Rock Fracturing	Rock Outcrop	13/12/2022	1	Rock fracturing to a rock outcrop, east of Fire Road 6F.	15/12/2022
DA3A_LW19_018	Rock Displacement	Steep slope	13/12/2022	1	Rock displacement to a steep slope, east of Fire Road 6F.	15/12/2022
DA3A_LW19_019	Rock Displacement	Steep slope	13/12/2022	1	Rock displacement to a steep slope, east of Fire Road 6F.	15/12/2022
DA3A_LW19_020	Soil Cracking	Bushland	13/12/2022	2	Soil cracking at the base of a rock outcrop, east of Fire Road 6F.	15/12/2022
DA3A_LW19_021	Soil Cracking and Rock Displacement	Boulders	13/12/2022	2	Soil cracking and rock displacement to boulders, east of Fire Road 6F.	15/12/2022
DA3A_LW19_022	Soil Cracking, Rock Fracturing and Rock Displacement	Bushland/ Rock Outcrop	13/12/2022	2	Soil cracking, rock fracturing and rock displacement in bushland, east of Fire Road 6F.	15/12/2022
DA3A_LW19_023	Rock Fracturing	Rock Outcrop	13/12/2022	1	Rock fracturing to a rock outcrop, east of Fire Road 6F.	15/12/2022

DA3A_LW19_024	Rock Fracturing and Soil Cracking	Step/ Bushland	20/12/2022	2	Rock fracturing to a step and soil cracking to bushland, east of Fire Road 6F.	22/12/2022
DA3A_LW19_025	Rock Displacement	Boulder	20/12/2022	1	Rock displacement away from soil, east of Fire Road 6F.	22/12/2022 and 09/02/2023 (Update)
DA3A_LW19_026	Soil Cracking	Fire Road 6F	21/12/2022	1	Soil cracking to Fire Road 6F.	22/12/2022
DA3A_LW19_015 (Update)	Rock Fracturing	Steep Slope/ Step	7/11/2022	2	Rock fracturing to a steep slope/ step, east of Fire Road 6F.	9/11/2022 & 22/12/2022 (Update)
DA3A_LW19_016 (Update)	Rock Fracturing, Fragmentation and Rockfall	Steep Slope/ Step	7/11/2022	2	Rock fracturing, fragmentation and rock fall at a steep slope/ step, east of Fire Road 6F.	9/11/2022 & 22/12/2022 (Update)
S148_01	Soil Moisture	*Swamp 148*	22/12/2022	3	Soil moisture lower than baseline trigger in *Swamp 148.*	22/12/2022
DA3A_LW19_027	Rock Fracturing and Rockfall	Step	10/01/2023	1	Rock fracturing and two small rockfalls at a step, west of Fire Road 6F.	11/01/2023
DA3A_LW19_028	Rock Fracturing	Rock Outcrop	6/02/2023	1	Rock fracturing to rock outcrop east of Fire Road 6F	09/02/2023
DA3A_LW19_029	Gas Release	Wongawilli Creek	18/01/2023	1	Gas release in WC_Pool 50, Wongawilli Creek	09/02/2023
DA3A_LW19_025 (Update)	Rock Displacement, Rock Fracturing and Soil Cracking	Rock Step/Outcrop	20/12/2022, 17/01/2022 (update)	1	Rock displacement away from soil, rock fracturing and soil cracking east of Fire Road 6F. *Coordinates shown here are correct, updated from error in initial report.*	22/12/2022 and 09/02/2023 (Update)
DA3A_LW19_030	Rock Fracturing	Rock Outcrop	15/02/2023	2	Rock fracturing to rock outcrop east of Fire Road 6F	17/02/2023
DA3A_LW19_031	Rock Fracturing	Rock Outcrop	15/02/2023	1	Rock fracturing to rock outcrop east of Fire Road 6F	17/02/2023
DA3A_LW19_032	Rock Fracturing	Rock Outcrop	15/02/2023	1	Rock fracturing to rock outcrop east of Fire Road 6F	17/02/2023
DA3A_LW19_033	Rockfall	Rock Step/Outcrop	15/02/2023	1	Rockfall on rock outcrop east of Fire Road 6F	17/02/2023
DA3A_LW19_034	Rock Fracturing	Rock Outcrop	15/02/2023	1	Rock fracturing to rock outcrop east of Fire Road 6F	17/02/2023
35b_01 (DA3B)	Groundwater	*Swamp 35b*	27/02/2023	3	Groundwater recession rate greater than baseline	14/03/2023
DA3A_LW19_035	Soil Cracking	Closed Access Track and Bushland	16/03/2023	2	Soil cracking and rock displacement on a closed vehicle access track and adjacent bushland, west of Fire Road 6F.	17/03/2023

DA3A_LW19_036	Soil Cracking	Closed Access Track	21/03/2023	1	Soil cracking on a closed access track over Longwall 7.	24/03/2023
DA3A_LW19_037	Rock Fracturing and Rockfall	*Sandy Creek 21 (Cultural Heritage Site)*	28/03/2023	2	Rock fracturing and rockfall within proximity to cultural heritage site Sandy Creek 21	29/03/2023
DA3A_LW19_038	Rock Fracturing and Rockfall	DM15 (Cultural Heritage Site)	28/03/2023	2	Rock fracturing and rockfall at cultural heritage site *DM15*.	29/03/2023
DA3A_LW8_003 (Update)	Rock Fracturing, Rockfall and Fragmentation	WC14	12/04/2023	1	Rock fracturing with associated rockfall and fragmentation on WC14.	29/01/2020 and 17/04/2023 (Update)
DA3A_LW19_039	Rockfall	Steep Slope/ Step	12/04/2023	1	Rockfall at base of steep slope/step to the north of WC14.	17/04/2023
DA3A_LW19_040	Rockfall and Fragmentation	Step	12/04/2023	1	Rockfall with some associated fragmentation to the north of WC14.	17/04/2023
DA3A_LW19_041	Rockfall	*LW19_SS5*	12/04/2023	2	Large rockfalls with boulders that dislodged and rolled downhill at landscape monitoring site LS19_SS5.	17/04/2023
DA3A_LW19_042	Rockfall and Fragmentation	LW19_SS4	12/04/2023	1	Small rockfall with some associated fragmentation at landscape monitoring site LW19_SS4.	17/04/2023
DA3A_LW19_043	Rock Fracturing and Uplift	WC14	17/04/2023	2	Rock fracturing and Uplift on WC14_Rockbar 7 which affects flow diversion.	27/04/2023
DA3A_LW19_044	Iron Staining	Bushland	19/04/2023	1	Iron staining in bush within proximity but not flowing into Wongawilli Creek.	27/04/2023
DA3A_LW19_045	Iron Staining	WC15	26/04/2023	1	Iron staining beneath a step that flows in to WC15_Pool 2.	01/05/2023
DA3A_LW19_046	Rockfall	Steep Slope/ Step	27/04/2023	1	Rockfall on top of steep slope/ step where several boulders have dislodged from the slope face west of Fire Road 6F.	01/05/2023
DA3A_LW19_047	Rockfall	Steep Slope/ Step	27/04/2023	1	Small rockfall on edge of steep slope/ step to the north of WC14.	01/05/2023
DA3A_LW19_048	Rock Fracturing and Rock Movement	Closed Access Track	27/04/2023	1	Rock fracturing and rock movement along a closed access track west of Fire Road 6F.	01/05/2023
DA3A_LW19_049	Soil Cracking	Closed Access Track	27/04/2023	1	Soil Cracking running along a closed access track west of Fire Road 6F.	01/05/2023
DA3A_LW19_050	Soil Cracking	Closed Access Track	27/04/2023	2	Soil Cracking running along a closed access	01/05/2023

					track west of Fire Road 6F.	
DA3A_LW19_051	Rock Fracturing	WC14	04/05/2023	1	Rock fracturing on small rockbar (WC14 Channel 17) within Swamp 148.	09/05/2023
DA3A_LW19_052	Rock Fracturing and Rockfall	Steep Slope	04/05/2023	1	Rock fracturing and associated rockfall on steep slope to the north of WC14.	09/05/2023
DA3A_LW19_053	Rock Fracturing and Rockfall	Rock Step	04/05/2023	1	Rock fracturing and associated rockfall at base of a rock step to the north of WC14.	09/05/2023
DA3A_LW19_054	Rock Fracturing and Fragmentation	Steep Slope	04/05/2023	1	Rock fracturing and fragmentation at base of a steep slope to the west of Fire Road 6F.	09/05/2023
DA3A_LW19_055	Rock Fracturing and Rockfall	Steep Slope	04/05/2023	1	Rock fracturing and an associated rockfall beneath an overhang to the north of WC14.	09/05/2023
DA3A_LW19_056	Rock Fracturing and Rockfall	Step/ Overhang	05/05/2023	2	Rock fracturing and rockfall on a steep slope to the north of WC14.	09/05/2023
DA3A_LW19_057	Rockfall	Step	05/05/2023	1	Rockfall at a step to the north of WC14.	09/05/2023
DA3A_LW19_058	Rock Fracturing and Fragmentation	Rock Outcrop	05/05/2023	1	Rock fracturing and fragmentation on edge of a rock outcrop to the north of WC14.	09/05/2023
DA3A_LW19_059	Rock Fracturing and Fragmentation	Overhang	05/05/2023	1	Rock fracturing and associated fragmentation beneath an overhang to the north of WC14.	09/05/2023
DA3A_LW19_060	Rock Fracturing, Displacement and Rockfall	Step/ Outcrop	05/05/2023	1	Rock fracturing, displacement and rockfall on a steep slope/ outcrop to the north of WC14.	09/05/2023
DA3A_LW19_061	Rock Fracturing and Soil Cracking	Step/ Outcrop	05/05/2023	2	Rock fracturing and soil cracking on a steep slope/ outcrop to the north of WC14.	09/05/2023
DA3A_LW19_062	Rock Fracturing	Rock Outcrop	05/05/2023	1	Rock fracturing on the face of an outcrop to the north of WC14.	09/05/2023
DA3A_LW19_063	Rock Movement	Steep Slope	10/05/2023	1	Boulder shifted downslope, east of Fire Road 6F.	15/05/2023
Swamp 15b	Soil Moisture	*Swamp 15b*	29/05/2023	2	Soil moisture trigger at swamp sites *S15b_39*, *S15b_H2* and *S15b_H3.*	29/05/2023
DA3C_LW21_001	Rock Fracturing	Outcrop	06/06/2023	1	Rock fracturing to a small rock outcrop west of *Fire Road 6F.*	9/06/2023
DA3C_LW21_002	Rock Fracturing and Rock Movement	*LW21_RO 1*	06/06/2023	2	Rock fracturing and rock movement to a small rock outcrop at Landscape Monitoring Site *LW21_RO1.*	9/06/2023

DA3C_LW21_003	Rock Fracturing and Rockfall	Outcrop and Step	06/06/2023	2	Rock fracturing and rockfall to an outcrop and a step west of *Fire Road 6F*.	9/06/2023
DA3C_LW21_004	Rock Fracturing	Outcrop	06/06/2023	2	Rock fracturing on an outcrop west of *Fire Road 6F*.	9/06/2023
DA3C_LW21_005	Rock Fracturing	Outcrop	15/06/2023	1	Rock fracture on a rock outcrop northeast of *WC20*.	19/06/2023
DA3C_LW21_006	Rock Fracturing	Outcrop	15/06/2023	1	Rock fracturing on a rock outcrop northeast of *WC20*.	19/06/2023
DA3C_LW21_007	Rock Fracturing and Rockfall	Outcrop	15/06/2023	2	Rock fracturing and rock fall on an outcrop northeast of *WC20*.	19/06/2023
DA3C_LW21_008	Rock Fracturing and Soil Cracking	Rock Step	19/06/2023	1	Rock fracturing/soil cracking to a rock step and bushland northeast of *WC20*.	20/06/2023
DA3C_LW21_009	Rock Fracturing	Rock Step	19/06/2023	1	Rock fracturing to a rock step west of *Fire Road 6F*.	20/06/2023
DA3C_LW21_010	Rock Fracturing and Rock Movement/ Displacement	Outcrop	19/06/2023	2	Rock fracturing and associated rock movement/displacement at an outcrop west of *Fire Road 6F*.	20/06/2023
DA3C_LW21_011	Rock Fracturing, Rock Displacement and Soil Cracking	Outcrop and Bushland	19/06/2023	1	Soil cracking, rock fracturing and associated rock displacement to an outcrop and bushland west of *Fire Road 6F*.	20/06/2023
144_01	Groundwater	Swamp 144	22/06/2023	3	Groundwater recession rate greater than baseline	28/06/2023
S144_01	Soil Moisture	Swamp 144	27/06/2023	3	Average soil moisture level below the baseline level	28/06/2023
DA3C_LW21_012	Rock Fracturing	Rock Step	27/06/2023	1	Rock fracturing to rock step west of Fire Road 6F.	28/06/2023

Appendix 8: WaterNSW Special and Controlled Areas Consent (F2020/1545) - Annual Statement of Compliance

Schedule 6 – Annual Statement of Compliance with Consent Conditions

Consent Holder
Illawarra Coal Holdings Pty Ltd

Consent Number
F2020/1545

Reporting Period
1 July 2022 - 30 June 2023

Compliance with Consent Conditions

1. Were all the following documents complied with during the reporting period? (tick a box)

Consent/Approval	Yes	No
a. Conditions of this Consent;	✓	
b. All Statutory Approvals;	✓	
c. Any environmental management plans, rehabilitation plans, revegetation plans, soil and water management plans, water monitoring plans or other plans required by Water NSW.	✓	

2. If you answered "No" to any part of Question 1, please supply the name of the non-compliance / incident and the date the written report was provided to Water NSW, in the table below:

Non-Compliance / Incident (one line)	Date written report provided to Water NSW
Illawarra Coal Holdings Pty Ltd has reported on the following in the Dendrobium Mine and Cordeaux Colliery FY23 Annual Review:	
A rockfall at occurred at Wongawilli Creek Waterfall 54 which is a exceedance of the performance measure in Schedule 3 Condition 13 of the Longwall 18 SMP Approval.	The DA3B Impact Report dated 8/08/2022
Rock falls and fracturing were identified at registered Aboriginal Heritage sites Sandy Creek 21 (52-5-0273) and DM15 (52--2--3639). These sites are located above Longwall 19.	The DA3B Impact Report dated 29/03/2023
IMC executed an Enforceable Undertaking with NRAR under Section 336E of the WM Act in regard to alleged unlicenced water take by Dendrobium Mine.	N/A
Official Caution was received from the Resources Regulator for the drilling of a borehole under an approval that had expired.	2 August 2023

3. How many pages have you attached?
(Each attached page must be initialled by the person(s) who signs Section 4 of this Statement of Compliance)

The Statement of Compliance has been attached as an Appendix to the:

- Dendrobium Mine and Cordeaux Colliery Annual Review FY23 (Appendix 8)
- Appin Mine Annual Review FY23 (Appendix 15)

These Annual Reviews meet the requirement of Condition 4.3.1 of Consent F2020/1545 for an annual report to be submitted by 30 September for the reporting period.

4. Signature and certification

The Statement of Compliance must only be signed by a person(s) with legal authority to sign it as set out below:

- By affixing the common seal in accordance with *Corporations Act 2001*, or
- By 2 directors, or
- By a director and a company secretary, or
- By a person delegated to sign on the company's behalf in accordance with the *Corporations Act 2001* and approved in writing by Water NSW to sign on the company's behalf.

Signature: 
Name: Chris Schultz
(printed)
Position Superintendent Environment (signed under Power of Attorney dated 17 March 2023)
Date: 1 September 2023

Signature:
Name:
(printed)
Position
Date:

SEAL (if signing under seal)

The Consent Holder can request Water NSW approval for the compliance requirements of this Consent be linked to and built into other compliance reporting that may be required under approvals issued under the EP&A Act.

Appendix 9: Annual Rehabilitation Report

Note that at the time of submission of the Annual Rehabilitation Report, there were issues with the template in the Resources Regulator Portal that resulted in the following:

- The answers to the following questions are switched:
  - *The rehabilitation monitoring carried out in the annual reporting period.*
  - *Rehabilitation monitoring program findings.*

- The answer to the following question is incorrectly reported as No. The correct answer is Yes.
  - *Are all rehabilitation areas in Landform Establishment phase or higher represented in the monitoring program to assess performance against the rehabilitation objectives and approved or, if not yet approved rehabilitation completion criteria and final landform and rehabilitation plan?*

NSW GOVERNMENT

NSW Resources Regulator

ARR0001112

DENDROBIUM COLLIERY ANNUAL REHABILITATION REPORT

Friday 1 July 2022 to Friday 30 June 2023

Contents

Summary table

DETAIL	
Mine	Dendrobium Colliery
Reference	ARR0001112
Annual report period commencement date	Friday 1 July 2022
Annual report period end date	Friday 30 June 2023
Forward program	FWP0001016
Mining leases	ML 1566 (1992), ML 1510 (1992), CCL 768 (1973)
Lease holder(s)	Dendrobium Coal Pty Ltd, Illawarra Coal Holdings Pty Ltd
Contact	Amy Alice Bradbury
Date of submission	Thursday 28 September 2023

Important

The department may make the information in your report and any supporting information available for inspection by members of the public, including by publication on its website or by displaying the information at any of its offices. If you consider any part of your report to be confidential, please communicate this to the department via the message function on this submission within the NSW Resources Regulator Portal.

Mine details

Project description

The Dendrobium Operations are managed in accordance with Development Consent 60- 03-2001, as modified (the Consent). Dendrobium Operations incorporate legacy sites and the Cordeaux Pit Top which are covered by CCL 768 and Development Consent D74/134 (Cordeaux). Dendrobium Mine is owned and operated by Dendrobium Coal Pty Ltd, a subsidiary company of Illawarra Coal Holdings Pty Ltd (ICHPL), a wholly owned subsidiary of South32 Limited. The mining operations are located immediately adjacent to Mt Kembla, approximately 8 km west of Wollongong, NSW, on the Woronora Plateau. Under the Consent, Dendrobium Mine is approved to produce up to 5.2 million tonnes (t) per annum until 31 December 2030. Dendrobium Mine primarily extracts hard coking coal from the Wongawilli Seam of the Southern Coalfield. Five major mining areas make up the approved mine plan for Dendrobium (Areas 1, 2, 3A, 3B and 3C). Cordeaux is under "care and maintenance" and has maintained this status.

Life of mine

9 years

Current development consents, leases and licences

Development consents granted under the *Environmental Planning and Assessment Act 1979*

DA60032001
DA60032001
DA60032001
DA60032001
DA60032001
DA60032001
DA60032001
D74/134
DA60032001
DA60032001
DA60032001
DA60032001
DA60032001
DA60032001

Authorisations covering the mining area granted under the *Mining Act 1992*

ML 1566 (1992), ML 1510 (1992), CCL 768 (1973)

Any other approvals, licences, or authorities issued by government agencies that are relevant to the progress of mining operation and rehabilitation activities

Environment Protection Licence - 3241
Environment Protection Licence - 611
WaterNSW Access Consent - F2020/1545
AUTH 143 - Exploration Authorisation
AUTH 374 - Exploration Authorisation
AUTH 338 - Exploration Authorisation
Longwall 19 SMP Approval
Longwall 21 SMP Approval

Summary of the scope and/or purpose of the new applications or modifications to existing approvals (if applicable)

On 8 July 2022, a modification to Development Consent 60-03-2001 was approved. Changes to the development consent can be found on the Illawarra Metallurgical Coal (IMC) website: https://www.south32.net/docs/default-source/operations/illawarra/illawarra-metallurgical-coal-mine/documents/dendrobium/development-consent/instrument-of-modification---mod-9---july-2022.pdf.

Changes to land ownership and land use

No changes to land ownership and land use occurred during the annual reporting period.

Surface disturbance and rehabilitation activities during the reporting period

Surface disturbance and rehabilitation activities that were conducted and an analysis of the progress against the rehabilitation schedule

Contaminated soils were removed from the footprint of the O'Briens Gap pump house during the reporting period. Validation testing and backfilling was also completed.

Exploration site rehabilitation takes place progressively at the cessation of drilling and/or monitoring and is monitored for success over several years. All rehabilitation is conducted according to all the relevant REF documentation related to each activity, as well as in accordance with any additional conditions imposed by WaterNSW activity approvals. Exploration rehabilitation across CCL 768 in FY23 was primarily focused on the rehabilitation of sites drilled in FY22 and FY23.

Vegetation removal and topsoil stripping occurred at the Ventilation No. 2 and 3 Shafts in preparation of gas management and ancillary infrastructure. This was conducted in compliance with the IMC Permit to Disturb process and Construction Environmental Management Plan. Prior to construction, the two existing sediment ponds were enlarged to provide additional capacity for potential sediment laden runoff. The project is anticipated to be completed in FY24.

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 due to be completed in FY24.

Rehabilitation planning activities that were conducted, including any specialist studies

Investigations and studies continued into the removal of redundant infrastructure associated with O'Briens Drift, particularly at the KVCLF. 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.

Overview of subsidence repair and/or remediation works undertaken

Subsidence impacts associated with underground mining operations, predominantly soil cracking, were reported progressively as identified. Where these cracks occurred on access tracks, they were repaired. Cracks identified in bushland were monitored to verify they

remediated naturally to avoid additional ground disturbance. Where there is a potential safety risk to workers walking near these sites, signage and caution tape is put in place. Details of remediated sites is included in the latest End of Panel Report. Any ongoing changes to these impacts will be rehabilitated as required.

The WC21 and Donalds Castle Creek Rehabilitation Plan was approved by the Department following extensive consultation with various agencies. The trial rehabilitation program commenced in FY23 with drilling and grouting of the two pools in WC21. These trial works were completed in FY23 and post-grouting monitoring of pool water levels is underway, with results due to be reported in FY24.

Overview of rehabilitation management and maintenance activities

Erosion and sediment control at Dendrobium is managed in accordance with the approved Water Management Plan. Due to significant rainfall over FY22 and FY23, the Dendrobium Pit Top experienced significant slope stability issues in the form of landslips in several locations – mostly along the portal road and adjacent to the Operations Building. Tree removal was conducted along the slope to reduce the likelihood of further slippage and risk of harm to personnel, infrastructure and equipment. An engineering consultancy was engaged to provide a permanent repair solution utilising soil nails and soil reinforcing mesh that avoided undercutting the unstable material and will allow vegetation to re-establish. Works commenced in FY23, with completion due in FY24.

Weeds are managed in accordance with the Rehabilitation Management Plan. Weed control was undertaken at Dendrobium Pit Top area, Kemira Valley Coal Loading Facility, Kemira Valley Rail Line, Cordeaux Colliery and Corrimal No. 3 Shaft.

Details of any rehabilitation actions taken as required by any letters, notices or directions issued by government agencies, including the NSW Resources Regulator

The rehabilitation security cost estimate for the Dendrobium operations was reviewed during the reporting period to align with the latest Resources Regulator Rehabilitation Cost Estimate (RCE) tool updates. No major changes to the existing security estimate were identified, although there were increased costs associated with rehabilitation at the Ventilation Shaft 2/3 site due to the construction of gas management infrastructure.

The Rehabilitation Management Plan was revised following feedback from DPE.

Details of any rehabilitation areas that have achieved the final land use

An application for part cancellation of CCL 768 was submitted in December 2022 for the area of land covered by Stage 2 of the Mount Kembla Mine Memorial Pathway. IMC considers that the area has been successfully rehabilitated to the agreed final land use. A response has not yet been received from the Resources Regulator.

Key production milestones

MATERIAL	UNIT	FWP0001016 YEAR 1	THIS REPORT
Stripped topsoil (if applicable)	(m^3)	67	450
Rock/overburden	(m^3)	0	0
Ore	(Mt)	4.7	4.6
Reject material[1]	(Mt)	1	1.1
Product	(Mt)	3.6	3.4

[1] This includes coarse rejects, tailings and any other wastes resulting from beneficiation.

Disturbance and rehabilitation statistics

Current disturbance and rehabilitation progression

	ELEMENT	UNIT	THIS REPORT
A	**Total surface disturbance footprint**	(ha)	232.18
B	**Total active disturbance**	(ha)	228.57
C	**Land prepared for rehabilitation**	(ha)	0.7
D	**Ecosystem and land use establishment**	(ha)	2.65
E	**Ecosystem and land use development**	(ha)	0.21
F	**Rehabilitation completion**	(ha)	0.05

Rehabilitation key performance indicators (KPIs)

	ELEMENT	UNIT	THIS REPORT
G	**Total new active disturbance area**	(ha)	NA - this value will display after 2nd year ARR submission as calculation relies on comparison between sequential yearly ARR data
H	**New rehabilitation commenced during annual reporting period**	(ha)	NA - this value will display after 2nd year ARR submission as calculation relies on comparison between sequential yearly ARR data
I	**Established rehabilitation**	(ha)	0.25
J	**Annual rehabilitation to disturbance ratio**	%	NA - this value will display after 2nd year ARR submission as calculation relies on comparison between sequential yearly ARR data
K	**Rehabilitated land to total mine footprint**	%	0.11

Progressive achievement of established rehabilitation

	ELEMENT	UNIT	THIS REPORT
L	**Established rehabilitation - agricultural final land uses**	%	0
M	**Established rehabilitation - native ecosystem final land uses**	%	100
N	**Established rehabilitation - other/non-vegetated final land uses**	%	0

Variation to the rehabilitation schedule

Identify the components of the most recent forward program that were not achieved

The stripped topsoil was greater than predicted in Year 1 of the Forward Program. This is primarily due to construction work at the Area 3C Gas Drainage Plant. Works were conducted in compliance with the IMC Permit to Disturb process and the Gas Drainage Plant – Area 3C Construction Environmental Management Plan.

The Rehabilitation Land Preparation and, Ecosystem and Land Use Establishment values, were lower than predicted in the Forward Program. This was a result of land preparation work being projected for WC21 and Donalds Castle Creek, however the trial is in the monitoring and reporting phase, with land preparation not likely to occur until the results of the trial have been analysed.

Key factors that delayed progressive rehabilitation

The WC21 rehabilitation trial grouting works commenced in November 2021 and were paused in December 2021 due to restricted access to WaterNSW Special Area during wet weather. Ongoing La Nina conditions restricted access to the Special Areas until September 2022 and lead to track damage requiring repair. Following track repairs the grouting trial resumed and was completed in November and December 2022.

Outline actions that will be included in the forward program and carried out to minimise disturbance and undertake progressive rehabilitation as far as reasonably practical

Progression of the WC21 and DCC Rehabilitation Plan is contingent on the outcomes of the trial. Revision of the WC21 and DCC Rehabilitation Plan with the results and recommendations of the trial is planned for Q1 FY24.

Rehabilitation monitoring and research findings

Rehabilitation monitoring

The rehabilitation monitoring carried out in the annual reporting period

Findings from the WC21 trial monitoring are to be finalised in FY24.

Status of performance against rehabilitation objectives and rehabilitation completion criteria

The monitoring program that has been implemented

Monitoring of trial works is underway along WC21. Analysis of monitoring data (principally pool water level recession curves) from pre-mining, control, impact and mitigation sites is used to determine the success of the rehabilitation. Objective performance criteria will be developed following the rehabilitation works and monitoring at the WC21 trial remediation sites. For more information refer to the WC21 and DCC Remediation Plan located on the IMC website: https://www.south32.net/what-we-do/our-locations/australia/illawarra-metallurgical-coal/documents.

Are all rehabilitation areas in Landform Establishment phase or higher represented in the monitoring program to assess performance against the rehabilitation objectives and approved or, if not yet approved rehabilitation completion criteria and final landform and rehabilitation plan?

NO

Year rehabilitation areas will be included as part of the monitoring program

N/A

An appraisal of whether rehabilitation is moving towards achieving the proposed rehabilitation objectives, approved or, if not yet approved, rehabilitation completion criteria and final landform and rehabilitation plan as soon as reasonably practicable.

Rehabilitation is managed and progressing in accordance with the approved Rehabilitation Management Plan.

Due to the anticipated long life of the mine, and the requirement of most surface facilities for operational function, detailed rehabilitation and monitoring programs will be developed closer to the time of closure. Rehabilitation plans will be formed to align with the proposed final landform and land-use.

Trial remediation works along WC21 are progressing as described above and per the WC21 and Donalds Castle Creek Rehabilitation Plan, available from the IMC website:

https://www.south32.net/what-we-do/our-locations/australia/illawarra-metallurgical-coal/documents.

Rehabilitation completion criteria will be developed following the approval of the rehabilitation objectives and therefore have not been considered in this appraisal.

Appraisal description

Rehabilitation is moving towards achieving the final land use as soon as reasonably practicable.

Rehabilitation monitoring program findings

Rehabilitation Monitoring is undertaken in accordance with the Rehabilitation Management Plan, located on the IMC website: https://www.south32.net/what-we-do/our-locations/australia/illawarra-metallurgical-coal/documents.

No rehabilitation monitoring was undertaken in the reporting period at surface facilities as no recent rehabilitation has been undertaken.

The O'Briens Gap Switchyard final report was submitted to the Resources Regulator in FY23.

Subsidence remediation monitoring is undertaken when travelling along tracks where remediation activities have occurred.

Pool water level monitoring is underway along WC21 following completion of trial works in FY23. Results are due to be reported in FY24. For more details, refer to the WC21 and Donalds Castle Creek Rehabilitation Plan published on the IMC website: https://www.south32.net/what-we-do/our-locations/australia/illawarra-metallurgical-coal/documents.

Analogue sites were established for the Dendrobium Pit Top, KVCLF, Ventilation Shaft 1, Ventilation Shaft 2/3 and the Cordeaux Pit Top in FY23 (two for each site). A baseline assessment of all ten analogue sites was undertaken and baseline data collected for future comparison with each of the five sites and to enable the identification of suitable species for use in rehabilitation (seed and tube stock). Soil chemistry, soil microbial activity and soil health attributes from each of the analogue sites was also assessed. Further, observations of erosion, slope instability or other landscape attributes that may influence the sites rehabilitation success were also collected whilst on site. A monitoring program has not yet been established.

Performance issues and their causes including identification of any knowledge gaps that must be addressed

Nil.

Outcomes of rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	UPDATED DATE OF COMPLETION	STATUS	ON TRACK?	ON TRACK UPDATE
ARR0001112								

Outcomes of completed trials and research

N/A

Attachment 1 – Reporting Definitions

REPORTING CATEGORY		DEFINITION
A1	Total disturbance footprint – surface disturbance	All areas within a mining lease that either have at some point in time or continue to pose a rehabilitation liability due to surface disturbance activities. The total disturbance footprint is the sum of the total active disturbance, decommissioning, landform establishment, growth medium development, ecosystem and land use establishment, ecosystem and land use development and rehabilitation completion (see definitions below). Underground mining operations should not include the footprint of underground mining areas/subsidence management areas in the total disturbance footprint.
A2	Underground Mining Area	Underground mining operations areas/subsidence management areas.
B	Total active disturbance	Includes on-lease exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste rock emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped) and temporary stabilised areas (e.g. areas sown with temporary cover crops for dust mitigation and temporary rehabilitation).
C	Rehabilitation – land preparation	Includes the sum of all disturbed land within a mining lease that have commenced any, or all, of the following phases of rehabilitation– decommissioning, landform establishment and growth medium development. Refer to the glossary of terms in this document for the definition of these phases of rehabilitation.

REPORTING CATEGORY		DEFINITION
D	Ecosystem and land use establishment	Includes the area which has been seeded/planted with the target vegetation species for the intended final land use. However, vegetation has not matured to a stage where it can be demonstrated that it will be sustainable for the long term and or require only a maintenance regime consistent with target reference/analogue sites. Typically, rehabilitation areas would be in this phase for at least two years (and usually more) before rehabilitation can be classified as being in the ecosystem and land use development phase. This phase does not apply to infrastructure areas that are being retained as part of final land use for the site.
E	Ecosystem and Land Use Development	Rehabilitation has matured to a level where target revegetation outcomes are on a trajectory towards meeting the final rehabilitation objectives and rehabilitation completion criteria (as verified by monitoring). This phase includes infrastructure areas that are to be retained for an approved post mining land use, following completion of all necessary measures to render the infrastructure fit for this purpose (for example structural integrity).
F	Rehabilitation Completion	The NSW Resources Regulator has determined in writing that the mining area has achieved the approved rehabilitation objectives and approved rehabilitation completion criteria and final landform and rehabilitation plan following the submission of *Form: ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate and/or notification of mine or petroleum site closure.*
G	New active disturbance area	The area of any new active disturbance that has been created during the annual reporting period (definition A1 in Table 5).
H	New rehabilitation commenced during annual reporting period	The sum of any new rehabilitation commenced in the annual reporting period. These areas may be in the rehabilitation land preparation phase or the ecosystem & land use establishment phase (definitions C and D in Table 5).
I	Established rehabilitation (hectares)	The total area of land that is verified to be within either the ecosystem and land use development phase or the rehabilitation completion phase (definitions E & F in Table 5).

REPORTING CATEGORY		DEFINITION
J	Annual rehabilitation to disturbance ratio	The rehabilitation to disturbance ratio (H/G) indicates how many hectares of new rehabilitation are undertaken for each hectare of land disturbed during the year. A ratio of 1/1 indicates that the area of new rehabilitation and disturbance in that year are the same.
K	% Rehabilitated land to total mine footprint	The proportion of the total mine footprint (area of land that has been disturbed by past or present surface disturbance activities) that has established rehabilitation (I/A1 x 100). For open cut mining, the proportion of the total mine footprint verified to be "established rehabilitation" should substantially increase as an operation progresses towards mine closure.
L	Established rehabilitation for agricultural final land uses (hectares)	The percentage of total area of land that is verified to be within either the ecosystem and land use development phase or the rehabilitation completion phase (definitions E & F in Table 5) that have been returned to an agricultural final land use.
M	Established rehabilitation for native ecosystem final land uses (hectares)	The percentage of total area of land that is verified to be within either the ecosystem and land use development phase or rehabilitation completion phase (definitions E & F in Table 5) that have been returned to native ecosystem final land use.
N	Established rehabilitation for other/non-vegetated final land uses (hectares)	The percentage of total area of land that is verified to be within either the ecosystem and land use development phase or the rehabilitation completion phase (definitions E & F in Table 5) that have been returned to other/non-vegetated final land use.

Attachment 2 – Definitions

WORD	DEFINITION
Active	In the context of rehabilitation, land associated with mining domains is considered 'active' for the period following disturbance until the commencement of rehabilitation.
Active mining phase of rehabilitation	In the context of rehabilitation, the active mining phase of rehabilitation constitutes the rehabilitation activities undertaken during mining operations such as salvaging and managing soil resources, salvaging habitat resources, and native seed collection. This phase also includes management actions taken during operations to manage risks to rehabilitation and enhance rehabilitation outcomes such as selective handling of waste rock and management of tailings emplacements.
Analogue site	In the context of rehabilitation, an analogue site is a 'reference site' that represents an example of the defining characteristics (such as vegetation composition and structure or agricultural productivity) of the final land use. Characteristics of analogue sites can be assessed to develop the rehabilitation objectives and completion criteria for final land use domains.
Annual rehabilitation report and forward program	As described in the Mining Regulation 2016.
Annual reporting period	As defined in the Mining Regulation 2016.
Closure	A whole-of-mine-life process, which typically culminates in the relinquishment of the mining lease. It includes decommissioning and rehabilitation to achieve the approved final land use(s).
Decommissioning	The process of removing mining infrastructure and removing contaminants and hazardous materials.
Decommissioning Phase of Rehabilitation	Activities associated with the removal of mining infrastructure and removal and/or remediation of contaminants and hazardous materials. In the context of the rehabilitation management plan this phase of rehabilitation may also include studies and assessments associated with decommissioning and demolition of infrastructure or works carried out to make safe or 'fit for purpose' built infrastructure to be retained for future use(s) following lease relinquishment.

WORD	DEFINITION
Department	The Department of Regional NSW.
Disturbance	See Surface Disturbance.
Disturbance area	An area that has been disturbed and that requires rehabilitation. This may include areas such as on-licence exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped), and areas requiring rehabilitation that are temporarily stabilised (i.e. managed to minimise dust generation and/or erosion).
Domain	An area (or areas) of the land that has been disturbed by mining and has a specific operational use (mining domain) or specific final land use (final land use domain). Land within a domain typically has similar geochemical and/or geophysical characteristics and therefore requires specific rehabilitation activities to achieve the associated final land use.
Ecosystem and Land Use Development	This phase of rehabilitation consists of the activities to manage maturing rehabilitation areas on a trajectory to achieving the approved rehabilitation objectives and completion criteria. For vegetated land uses this phase may include processes to develop characteristics of functional self-sustaining ecosystems, such as nutrient recycling, vegetation flowering and reproduction, and increasing habitat complexity, and development of a productive, self-sustaining soil profile. This phase of rehabilitation may include specific vegetation management strategies and maintenance such as tree thinning, supplementary plantings and weed management.
Ecosystem and Land Use Establishment	This phase of rehabilitation consists of the processes to establish the approved final land use following construction of the final landform. For vegetated land uses this rehabilitation phase includes establishing the desired vegetation community and implementing land management activities such as weed control. This phase of rehabilitation may also include habitat augmentation such as installation of nest boxes.
Exploration	Has the same meaning as that term under the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

WORD	DEFINITION
Final landform and rehabilitation plan	As defined in the Mining Regulation 2016.
Final land use	As defined in the Mining Regulation 2016.
Form and way	Means the form and way approved by the Secretary. Approved form and way documents are available on the Department's website.
Growth Medium Development	This phase of rehabilitation consists of activities required to establish the physical, chemical and biological components of the substrate required to establish the desired vegetation community (including short lived pioneer species. This phase may include spreading the prepared landform with topsoil and/or subsoil and/or soil substitutes, applying soil ameliorants to enhance the physical, chemical and biological characteristics of the growth media, and actions to minimise loss of growth media due to erosion.
Habitat	Has the same meaning as that term under the *Biodiversity Conservation Act 2016* and the *Fisheries Management Act 1994* (as relevant).
Indicator	An attribute of the biophysical environment (e.g. pH, topsoil depth, biomass) that can be used to approximate the progression of a biophysical process. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion criterion (i.e. defined end point). It may be aligned to an established protocol and used to evaluate changes in a system.
Land	As defined in the *Mining Act 1992.*
Landform Establishment	This phase of rehabilitation consists of the processes and activities required to construct the final landform. In addition to profiling the surface of rehabilitation areas to the approved final landform profile this phase may include works to construct surface water drainage features, encapsulate problematic materials such as tailings, and prepare a substrate with the desired physical and chemical characteristics (e.g. rock raking or ameliorating sodic materials).
Large mine	As defined in the Mining Regulation 2016.
Lease holder	The holder of a mining lease.

WORD	DEFINITION
Life of mine	The timeframe of how long a mine is approved to mine, from commencement to closure.
Mine rehabilitation portal	Means the NSW Resources Regulator's online portal that lease holders must use (via a registered account) to: ■ upload rehabilitation geographical information system (GIS) spatial data ■ develop rehabilitation GIS spatial data (using online tracing functions) ■ generate rehabilitation plans and rehabilitation statistics using the map viewer and Rehabilitation Key Performance Indicator functionalities. Data submitted to the mine rehabilitation portal is collated in a centralised geodatabase for use by the NSW Resources Regulator to regulate rehabilitation performance of lease holders.
Mining area	As defined in the *Mining Act 1992*.
Mining domain	A land management unit with a discrete operational function (e.g. overburden emplacement), and therefore similar geophysical characteristics, that will require specific rehabilitation treatments to achieve the final land use(s).
Mining land	As defined in the *Mining Act 1992.*
Native vegetation	Has the same meaning as that term under section 60B of the *Local Land Services Act 2013.*
Overburden	Material overlying coal or a mineral deposit.
Performance indicator	An attribute of the biophysical environment (for example pH, slope, topsoil depth, biomass) that can be used to demonstrate achievement of a rehabilitation objective. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion criterion, that is, a defined end point. It may be aligned to an established protocol and used to evaluate changes in a system.

WORD	DEFINITION
Phases of rehabilitation	The stages and sequences of actions required to rehabilitate disturbed land to achieve the final land use. The phases of rehabilitation are: ■ active mining ■ decommissioning ■ landform Establishment ■ growth medium development ■ ecosystem and land use establishment ■ ecosystem and land use development.
Progressive rehabilitation	The progress of rehabilitation towards achieving the approved rehabilitation completion criteria. This may be described in terms of domains, phases, performance indicators and rehabilitation completion criteria.
Rehabilitation Completion	The final phase of rehabilitation when a rehabilitation area has achieved the approved rehabilitation objectives and rehabilitation completion criteria for the final land use. Rehabilitation areas may be classified as complete when the NSW Resources Regulator has determined in writing that the relevant rehabilitation obligations have been fulfilled following submission of *Form ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate* application by the lease holder.
Rehabilitation Completion criteria	As defined in the Mining Regulation 2016.
Rehabilitation cost estimate	As defined in the Mining Regulation 2016.
Rehabilitation management plan	As defined in the Mining Regulation 2016.
Rehabilitation objectives	As defined in the Mining Regulation 2016.
Rehabilitation risk assessment	As defined in the Mining Regulation 2016.
Rehabilitation schedule	The defined timeframes for progressive rehabilitation set out in the forward program.

WORD	DEFINITION
Relevant stakeholders	Means any persons or bodies who may be affected by the mining operations, including rehabilitation, carried out on the lease land, and includes: ■ the relevant development consent authority ■ the local council ■ the relevant landholder(s) ■ community consultative committee (if required under the development consent) or equivalent consultative group ■ affected land holder(s) ■ government agencies relevant to the final land use ■ affected infrastructure authorities (electricity, telecommunications, water, pipeline, road, rail authorities) ■ local Aboriginal communities, and ■ any other person or body determined by the Minister to be a relevant stakeholder in relation to a mining lease.
Risk	The effect of uncertainty on objectives. It is measured in terms of consequences and likelihood (AS/NZS ISO 31000:2009).
Secretary	The Secretary of the Department.
Security deposit	An amount that a mining lease holder is required to provide and maintain under a mining lease condition, to secure funding for the fulfilment of obligations under the lease (including obligations that may arise in the future).
Surface disturbance	Includes activities that disturb the surface of the mining area, including mining operations, ancillary mining activities and exploration.
Tailings	A combination of the fine-grained solid material remaining after the recoverable metals and minerals have been extracted from the mined ore, and any process water[2].
Waste	Has the same meaning as that term under the *Protection of the Environment Operations Act 1997*.

[2] Commonwealth of Australia (DITR), 2007. *Tailings Management.*

Attachment 3 – Rehabilitation Complaints

DATE	COMPLAINANT	COMPLAINT DETAILS	RESPONSE DETAILS	STATUS OF RESPONSE	DATE RESPONSE COMPLETED (IF APPLICABLE)

Attachment 4 – Stakeholder consultation

DATE	STAKEHOLDER	CONSULTATION ACTIVITIES AND FORMS	MATTERS SUBJECT TO CONSULTATION	ACTIONS TAKEN
2 Dec 2022	NSW Resources Regulator	• Email correspondence	Forward Program, particularly: • Requesting IMC to nominate a contact person in relation to the mining lease(s) for the purposes of the Mining Act 1992 • Requesting IMC publish the Forward Program on the IMC website	• Evidence submitted of nominated contact person provided previously to the NSW Resources Regulator • Forward Program published to the IMC Website
30 Jun 2023	Sydney Water	• Email correspondence • Onsite meetings Note: Consultation occurred over multiple dates.	Progress of the O'Briens Gap Pumphouse Rehabilitation Project	Continuation of O'Briens Gap Rehabilitation Project to satisfaction of the landowner (Sydney Water)
30 Jun 2023	Department of Planning and Environment, Biodiversity Conservation Division, WaterNSW, Dendrobium Community Consultative Committee	• Email correspondence • Inspections of WC21 trial rehabilitation site • Offsite meetings Note: Consultation occurred over multiple dates.	WC21 and DCC Rehabilitation Trial, particularly: • Update on the progress of WC21 Rehabilitation Trial	Revision of the WC21 and DCC Rehabilitation Plan
30 Jun 2023	-	-	-	-

DATE	STAKEHOLDER	CONSULTATION ACTIVITIES AND FORMS	MATTERS SUBJECT TO CONSULTATION	ACTIONS TAKEN
29 Aug 2022	Department of Planning and Environment, Environment Protection Authority	• Email correspondence Note: Consultation occurred over multiple dates.	Tree removal at Dendrobium Pit Top, including: • Complaint received on tree removal and noise at Dendrobium • Inclusion of Special Condition for slope stabilisation work within EPL 3241	• Response provided by IMC and accepted by Department of Planning and Environment • Special condition approved in EPL • CEMP for the Slope Stabilisation work submitted to the EPA as required. CEMP accepted by the Environment Protection Authority
30 Jun 2023	NSW Resources Regulator, Landholders	• Email correspondence Note: Consultation occurred over multiple dates.	Application for part cancellation of CCL 768 for area covered by rehabilitated powerlines approved by NSW RR	Correspondence issued to affected Landholders informing them that Leases have been cancelled
6 Sep 2022	Department of Planning and Environment, NSW Resources Regulator	• Email correspondence • Meetings Note: Consultation occurred over multiple dates.	Rehabilitation Management Plan, particularly: • Feedback on draft rehabilitation management plan • Meetings to discuss rehabilitation objectives and spatial data following refusal	• RMP revised • Rehabilitation objectives and spatial data revised and resubmitted in RMP
21 Sep 2022	NSW Resources Regulator	• Email correspondence	Inclusion of securities for exploration in Rehabilitation Cost Estimate (RCE) for CCL 768	RCE revised and submitted to the NSW Resources Regulator

Attachment 5 – Plans

Plan 1A - Current Status of Mining and Rehabilitation.zip

Plan 1B - Current Landform Contours.zip