



DENDROBIUM MINE AND CORDEAUX COLLIERY ANNUAL REVIEW FY21



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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
Name of holder of development consent / project approval	Dendrobium Coal 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) and 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)
MOP/RMP start date	1 October 2015
MOP/RMP end date	1 July 2022
Annual Review start date	1 July 2020
Annual Review end date	30 June 2021



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 2020 – 30 June 2021 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 122B (2) of the Environmental Planning and Assessment Act 1979. Section 122E 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 issued June 2020)
Signature of authorised reporting officer	
Date	27 September 2021



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	
MOD-11-2-2002	Permitting the access of construction traffic to the Bradford Breaker Emplacement Area	
MOD-36-5-2002-I	Application for commencement of vehicles accessing Benjamin Road.	
60-03-2001 MOD3	Modification to Development Consent (Dept. Planning)	No
60-03-2001 MOD4	Modification to Development Consent (Dept. Planning)	
60-03-2001 MOD5	Modification to Development Consent (Dept. Planning)	
60-03-2001 MOD6	Area 3 Consent Modification	
60-03-2001 MOD7	Strategic Biodiversity Offset	
60-03-2001 MOD8	Surface Supply Upgrade	
Mining Lease	Number	
Mining lease	1510	No
Consolidated Coal Lease	768	Yes
Mining Lease	1566	Yes
Environment Protection Licence		
EPL 3241	Dendrobium Mine	No
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 10.



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 and 12 of Schedule 2/ Condition 12 of Schedule 4	Applicant to ensure discharges from surface facilities comply with discharge limits.	Non-compliant	Uncontrolled release of water from Kemira Valley Sediment Pond.	Section 11 of this report
EPL 3241	Condition L1.1	Licencee not to pollute waters except as provided by condition of licence.			
ML 1510	Condition 25	Maintain means to minimise contamination, pollution or siltation of any stream.			
DA 60-03-2001	Condition 12 of Schedule 4	Applicant to ensure discharges from surface facilities comply with discharge limits.	Non-compliant	Total suspended solids limit exceeded at LDP5.	
EPL 3241	Condition L2.4	Water quality concentration limits not to be exceeded.			
EPL 6092 ²	Condition O2	Plant and equipment to be maintained in a proper and efficient condition.	Non-compliant	Visible dust emission occurred from Stockpile 4.	
DA 60-03-2001	Condition 7 of Schedule 4	Noise monitoring to be undertaken at specified locations.	Non-compliant	Noise monitoring undertaken at different location to specified location in Noise Management Plan for R39a.	

² EPL 6092 is issued to BlueScope Steel. South32 operates on a leased area within the licenced premises.



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. 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: Dendrobium Mine Consent Condition Compliance Report.



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 2021 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 (the Consent) and the NSW Resources Regulator requirement to submit an Annual Environmental Management Report (AEMR) (Condition 3) and Compliance Report (Condition 4) under Consolidated Coal Lease (CCL) 768 for Dendrobium Mine and Cordeaux Colliery.

A copy of the report is publicly available via the South32 website under Dendrobium Mine:

<https://www.south32.net/what-we-do/places-we-work/illawarra-metallurgical-coal/documents>.

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 Mt Kembla, approximately 8 km west of Wollongong, NSW. Mt 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 is currently being undertaken in Area 3B (refer to Plan 1A: Location of Mining Domain and Plan 1B: LW Status as at end of Financial Year). 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 and oily water separation facility.

The Pit Top layout is shown in Plan 2: Dendrobium Mine Site.



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. 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 3: Site Layout – Kemira Valley.

2.2.1.3 Kemira Valley Rail Line (KVRL)

The private KVRL is used to transport the 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 outlined in Plan 4: No. 1 Ventilation Shaft Site Layout.

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 Shaft 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 5: No. 2 and 3 Ventilation Shaft Site Layout.

2.2.1.6 Dendrobium Coal Preparation Plant (DCPP)

The DCPP is located within the Port Kembla Steelworks. The plant provides washing facilities for Dendrobium coal product 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 the IMC Appin mines. The site is managed by Linfox.

2.2.1.8 Dendrobium Extension Project

IMC submitted an application to the Department of Planning, Industry and Environment (DPIE) for the Dendrobium Mine – Plan for the Future: Coal for Steelmaking (the project). The Environmental Impact Statement (EIS) was submitted to DPIE 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.

A judicial review of the findings of the IPC is to be heard in the Land and Environment Court. An EIS for a revised Project is being developed for submission in FY22.

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 exploration activity across the Dendrobium and Appin mining leases and exploration tenements, and also for access into the catchment.

Dendrobium Mine's future underground mining operations consider Cordeaux Colliery Pit Top and the Corrimal No. 3 shaft site to be 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 9: Cordeaux Colliery Pit Top Infrastructure). Cordeaux Colliery was serviced by four vertical shafts consisting of:

- People 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	Robert Gordon	(02) 4255 4874
Superintendent Exploration Cordeaux	Amanda Crehan	(02) 4286 3160
Superintendent Environment	Chris Schultz	(02) 4286 3384
Specialist Environment – Dendrobium	Tom McMahon	(02) 4255 4463



3. APPROVALS

Current development consent approvals, leases and licences for Dendrobium Mine and Cordeaux Colliery are included in Table 5, Table 6, Table 7, Table 8 and Table 9.

3.1.1 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 2002	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, Mt 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 MOD3	Modification to Development Consent (Dept. Planning)	28 Aug 2003	21/ Dec 2023
60-03-2001 MOD4	Modification to Development Consent (Dept. Planning)	5 Apr 2006	21 Dec 2023
60-03-2001 MOD5	Modification to Development Consent (Dept. Planning)	30 Nov 2006	21 Dec 2023
60-03-2001 MOD6	Area 3 Consent Modification	8 Dec 2008	31 Dec 2030
60-03-2001 MOD7	Strategic Biodiversity Offset	2 Apr 2015	31 Dec 2030
60-03-2001 MOD8	Surface Supply Upgrade	13 Jul 2018	31 Dec 2030



Table 6: Mining Leases associated with Dendrobium Mine

Mining Lease / Sub-Lease	Number	Issue Date	Expiry Date	Mine Site
Mining Lease	1510	24 Apr 2002	23 Apr 2023	Dendrobium
Consolidated Coal Lease	768	29 Oct 1991	7 Oct 2029	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
Radiation Licence (EPA) ³	5061173	27 Jul 2021	27 Jul 2022
Radiation Licence (EPA) ⁴	5096770	26 Feb 2021	26 Feb 2022
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	A143	28 Jul 1979	7 Nov 2023
Exploration Licence	A374	24 Oct 1986	24 Oct 2022
WaterNSW Access Consent	F2020/1545	14 Mar 2020	13 Mar 2025

³ KVCLF.

⁴ DCP.



Table 8: Current Mining Approvals for Dendrobium Mine

Approval	Number	Issue Date
Area 3A Longwall 19 SMP	N/A	11 Mar 2021
Area 3B – Longwalls 9-18 SMP	N/A	8 Dec 2020
Area 3C – Longwall 21	N/A	19 Dec 2019
Mining Operations Plan	DOC19/681058	24 Jul 2020 ⁵

3.1.2 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	A338	8 Oct 1984	8 Oct 2019 ⁶
WaterNSW Access Consent	F2020/1545	14 Mar 2020	13 Mar 2025
Consolidated Coal Lease	768	29 Oct 1991	7 Oct 2029
Mining Lease	25	31 Oct 1975	As per CCL768
Mining Lease	28	31 Oct 1975	As per CCL768
Mining Lease	23	2 Sep 1981	As per CCL768
Mining Lease	24	2 Feb 1976	As per CCL768
Mining Lease	30	18 Oct 1976	As per CCL768
Mining Lease	Lease No. 66 portion D1106	18 Oct 1976	As per CCL768
Mining Purposes Lease	MPL205	29 Sep 1982	As per CCL768

⁵ Approval of latest Addendum.

⁶ An application to renew A388 was applied for on 8 October 2019. The granting of this renewal is still pending and continues until the department grants the renewal.



4. OPERATIONS SUMMARY

4.1 Mining

4.1.1 Dendrobium Mine

The Run of Mine (ROM) product for the reporting period was 4.58 million tonnes with a saleable product yield of 78.5%. 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 3B. Development will continue in Area 3B and 3C in the next reporting period.

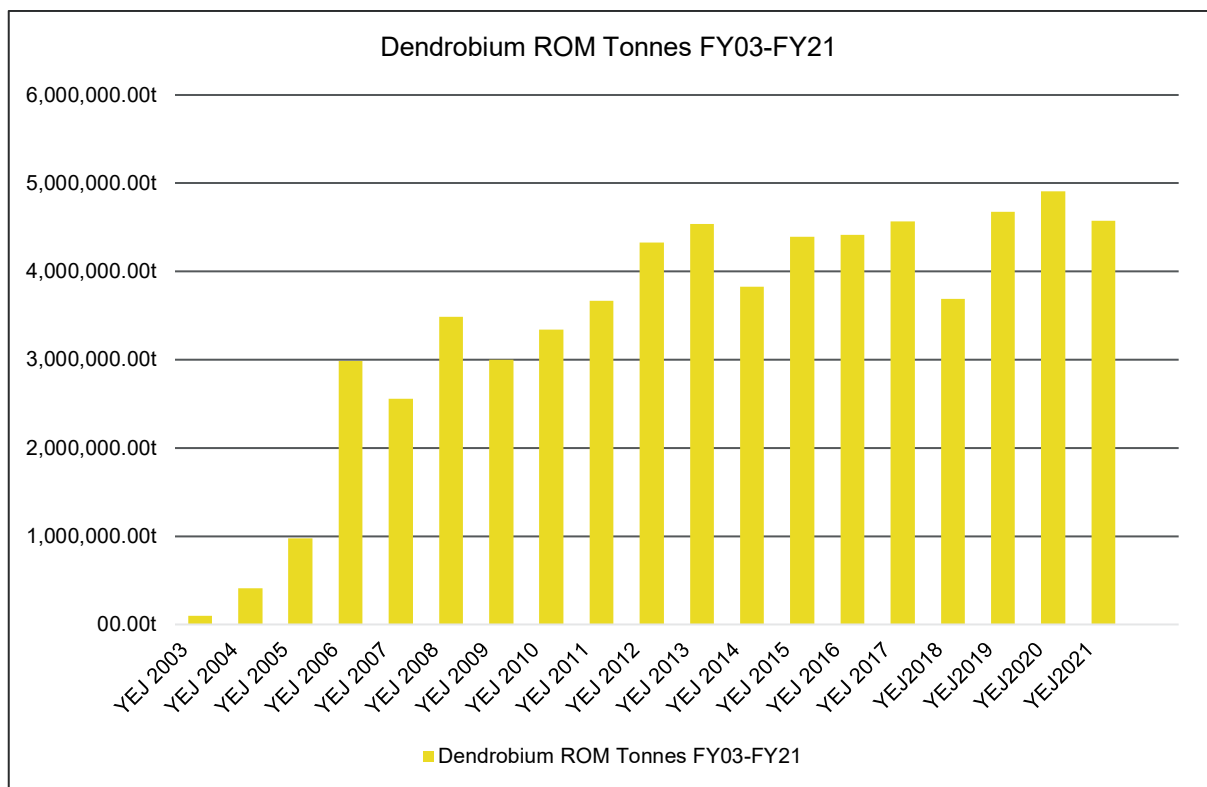


Figure 1: ROM Production for Dendrobium Mine.

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	ETC Sept/Oct 2021

4.2 Mineral Processing

4.2.1 Dendrobium Mine

Processing of the ROM coal produced at Dendrobium Mine is undertaken at the DCP. Coal wash is emplaced at the Appin Mine Coal Wash Emplacement Area (CWEA) or directed to beneficial reuse. Additional information on the emplacement operations is provided in the Appin Mine Annual Review. 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 (tonnes)	N/A	0	0	0
ROM Coal/Ore (tonnes)	5,200,000	4,906,074	4,578,216	4,170,160
Coarse reject (Coal Wash tonnes)	N/A	1,308,998	1,117,384	811,819
Saleable product (tonnes)	N/A	3,767,563	3,595,401	3,333,340

⁷ Estimate.



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 DCP. Train movements are limited to between 6 am and 11 pm as required by the Consent. During the reporting period, 2,825 trains were loaded at the KVCLF, transporting 4,661,411 tonnes of coal. A summary of train movements for FY21 is included in Table 12.

Table 12: Summary of KVCLF train movements for FY21

Month	Tonnes	Train Movements	Average Train Movements/Day
Jul-20	523,346	317	10.23
Aug-20	503,737	305	9.84
Sep-20	446,644	271	9.03
Oct-20	406,455	246	7.94
Nov-20	24,422	15	0.50
Dec-20	195,034	118	3.81
Jan-21	359,038	218	7.03
Feb-21	457,250	277	9.55
Mar-21	446,095	270	8.71
Apr-21	452,315	274	9.13
May-21	480,672	291	9.39
Jun-21	366,403	222	7.72
TOTAL	4,661,411	2825	AVERAGE = 7.72



4.4 Construction

4.4.1 *Dendrobium Mine*

4.4.1.1 Visitor Car Park Extension

Construction commenced during the reporting period on the visitor car park extension near the site entrance. This included the sealing of the surface for an additional 17 spaces.

The project was completed in FY21 and the car park is currently in use (see Plate 1).



Plate 1: Visitor car park extension

4.4.1.2 Compressor Upgrades

Preliminary planning work to upgrade the existing compressors on site commenced in FY19 during which possible locations for the upgrades were assessed.

The project moved into execution in FY21, with upgrades planned for the compressors located at the Kemira Valley Tunnel Portal. The two existing compressors were replaced and a third compressor was installed at the same location in FY21.

4.4.1.3 Lower Portal Road Upgrade

Initial planning work to upgrade the Lower Portal Road commenced in FY21 with earth works commencing at the end of June 2021. The project will involve upgrading the Lower Portal Road with a rigid pavement and drainage improvements. This will also allow additional access in the event of emergency requiring the use of the secondary roadway.



4.4.1.4 Electrical Infrastructure

Electricity for Dendrobium Mine is currently supplied by Endeavour Energy with point of connection opposite the entry to the mine. The installation of a new kiosk substation was completed in FY21. The former 33KV powerline that was fed from BlueScope Steel has been demolished and rehabilitated by the Legacy Sites and Rehabilitation Program. Refer to Section 8.1.1.

4.4.1.5 Minor Improvement Projects

Other improvement projects completed throughout the FY include:

- Ongoing maintenance to the drainage and greywater treatment systems.
- Installation of temporary reinforcing in the culvert under the Upper Portal Road while the Lower Portal Road upgrade continues.

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.

4.4.2 KVCLF

On 10 August 2020, an uncontrolled release of approximately 10 ML of water containing fine coal particles occurred from the KVCLF Sediment Pond after a period of excessive rainfall (greater than 150 mm in three days). The water, sediment and some pond construction materials entered Brandy and Water Creek.

Following the initial release of water, remedial actions were put in place to divert the water flows to the buffer dam. A project manager was engaged to coordinate further remedial activities, which included clean-up activities along the banks of Brandy and Water Creek and American Creek to remove materials that were deposited during the event.

An investigation determined that the cause of the event was the corrosion and subsequent failure of a clean water diversion pipe beneath the sediment pond. This caused a void to form underneath the sediment pond and the subsequent release of water. Measures to reinstate the sediment pond were undertaken, including replacement of the clean water diversion pipe. The sediment pond returned to normal operation in December 2020.

An assessment of all stored water bodies at IMC was undertaken in response to the event.

4.4.3 DCPP

Several major works were undertaken at DCPD over the reporting period. These included structural repairs, re-sheeting, replacement of four tailings presses and conveyor pullcords.

For the coming reporting period there are also various works planned 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.



4.5 Exploration

4.5.1 Drilling Program

A total of 16 exploration boreholes (coal quality/resource definition) were completed in FY21. All of these holes coincide with CCL 768, although exploration holes are drilled under exploration titles wherever they are present. 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. All were standard vertical coal exploration boreholes, and one was a re-drill due to core loss in the target seam of the original hole.

Exploration was also involved in the drilling of a series of seven environmental/mining approval holes in CCL 768 for the purpose of groundwater and/or swamp monitoring, and the investigation of possible effects on the Avon Reservoir from planned mining. All but one of these holes were fully cored but none were drilled to coal seam level. All are instrumented for the purpose of continual hydrological monitoring.

Plan 6: Exploration Activities – Dendrobium Mine provides an overview of the locations of the exploration and environmental/mining approvals boreholes drilled across CCL 768 in the FY21 reporting period (note: some approvals holes and exploration holes were drilled on the same site and therefore are shown as one point).

4.5.2 Seismic Program

Seismic reflection surveys involve the use of artificially-generated sound ('seismic') waves to image sub-surface geological conditions. The sound reflects off the coal seam and receiving devices (geophones) are placed in a line on the surface to detect the seismic signal that is reflected back from subsurface geological features, such as changes in rock type or faults. The sound wave is generated by the initiation of a 800-gram charge, placed into a shot hole. Shot holes are nominally 14 m deep so the sound wave is not affected by any subsurface weathering and to ensure the safety of the seismic team. Shot holes are drilled every 15 m to ensure high quality of data for the detection of seam displacement faults, with geophones placed every 7.5 m.

In FY21, six 2D seismic lines were acquired in CCL 768, to close out the campaign which commenced seismic line preparation in FY20. Plan 6: Exploration Activities – Dendrobium Mine also shows the location of these lines.

4.5.3 Cordeaux Colliery

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



5. ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

The actions arising from the previous Annual Review are detailed in Table 13.

Table 13: Actions arising from previous Annual Review

Action Required	Requested by	Where covered in this Report
Rehabilitation of Legacy Sites and Exploration Activities should be documented in more detail.	Resources Regulator	Section 8.1.1
The areas of disturbance and rehabilitation associated with Legacy Sites and Exploration Activities should preferably be included in the 'Rehabilitation Summary' table, or an alternative method of reporting on rehabilitation progress for these sites may be included. In the 2019/2020 Report there was no change to rehabilitation areas in the Rehabilitation Summary table (7.97 hectares total) despite significant rehabilitation works apparently having occurred in the reporting period.	Resources Regulator	Section 8.1.1
Additional information should be provided regarding monitoring and maintenance of rehabilitation areas, including an overview of monitoring results.	Resources Regulator	Section 8.1.1.6
Additional information should be included regarding subsidence related impacts which require rehabilitation, including any rehabilitation works undertaken during the reporting period, scheduling of rehabilitation works for the next reporting period and assessment as to whether identified subsidence impacts do or do not warrant rehabilitation works.	Resources Regulator	Section 8.1.1.5
Mining Operations: - Continue longwall mining Area 3B - Continue development in Area 3B Main Gates and Wonga Mains - Development towards future mining domains of Area 3C and Area 5, subject to approvals being in place	IMC	Section 4.1
Exploration – Area 5: - Complete surface-to-inseam dyke definition drilling - Continuation of exploration drilling (JORC resource improvement and modelling forecast) - Geotechnical investigations 2D seismic data acquisition	IMC	Section 4.5
Exploration – Area 3A/B: - Pre/post-mining monitoring boreholes - Exploration boreholes in advance of longwall - Approval boreholes at the request of various government agencies	IMC	Section 4.5
Exploration – Area 3C: Re-commence exploration drilling to improve resource definition and geological understanding of area	IMC	Section 4.5
Commencement of work to upgrade existing compressors located at the Kemira Valley Tunnel. The two existing	IMC	Section 4.4.1.2



compressors planned to be replaced with a third to be installed at the same location.		
Erosion and sediment control improvements:		
- Improvements and ongoing maintenance to drainage and greywater treatment systems. - Continued sealing of unsealed areas. - Completion of repairs of erosion on the bank of American Creek near the bridge at the entrance of Dendrobium Pit top site	IMC	Section 6.2
Rectification works will be undertaken at the Kemira Valley sediment pond to reinstate the pond functionality following the event in August 2020 that resulted in the uncontrolled release of water from the pond.	IMC	Section 4.4.2
An additional trackside rail noise monitor was installed and commissioned adjacent to the corner of track near William James Drive in FY20. During the FY21 reporting period it will be used to validate and identify feasible noise reduction initiatives.	IMC	Section 6.8.1
Directional noise monitoring system to be installed at the Pit Top.	IMC	Section 6.8.1.4
Replace the bulk diesel tank and bulk solcenic tanks with self-bunded tanks.	IMC	Section 4.4.1.5 and 12.1.4.4
Continue environmental management in accordance with ISO 14001. Environmental Management Plans updated as needed.	IMC	Section 10
Legacy Sites and Rehabilitation Program:		
- Site investigations and planning approvals for the rehabilitation of the O'Brien's Gap Pumphouse progressed, including negotiating a development approval with Council to undertake this work. - Demolition and rehabilitation of a section of the 6-67 powerline circuit (Wongawilli to Wongawilli Air Shaft) that is within rural residential areas.	IMC	Section 8.1.1.3
Ongoing review of the Dendrobium Conceptual Closure Plan	IMC	Section 8.1.1.2
Review of the MOP	IMC	Section 8.1.1.1
Cordeaux Colliery mining operations will remain on care and maintenance.	IMC	Section 2.2.2



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. At the Dendrobium Pit Top, the following dust controls were utilised during the reporting period:

- The use of a vacuum sweeper truck which operates on a regular basis.
- Hose downs of the yard.
- The use of an automatic dust suppression spray system along the portal road.

During the reporting period, the Trigger Action Response Plan (TARP) continued to be implemented to manage dust in the yard at the Pit Top. The TARP details triggers levels and associated management actions in response to dust related events.

At the KVCLF, the following dust controls were utilised during the reporting period:

- Automatic dust suppression system on the stockpile. Eight sprays are located around the base of the stockpile whilst a further two sprays are located at the top of the rill tower. The spray system is programmed to activate if wind velocities exceed 10 m/s and/or when the coal moisture level drops below the trigger level of 8%. The sprays can also be activated by site personnel via a dial up system when required.
- Dust suppression system in the train loading chamber. This system maintains an adequate coal moisture level to minimise the potential for fugitive dust emissions whilst being transported from the KVCLF to the DCPD via the KVRL.
- Enclosed train loading facility that enables coal to be loaded into the train without fugitive emissions.
- Doors on the rill tower to minimise the fugitive emissions from the rill tower. A program to replace damaged doors was implemented during the last reporting period with inspections of works completed during FY21.
- Dust suppression system on the Kemira Valley conveyor (including sprays at the top and bottom of the Sizer, the jib pulley, and also around the Nebo Mains transfer point) that maintains an adequate coal moisture content to prevent dust emissions from the conveyor.
- Wind protection on conveyor gantries.

The dust suppression systems at the Pit Top and sprays at the KVCLF both use recycled water.

6.1.1.1 **Air Quality Monitoring System**

Dendrobium's air quality monitoring program consisted of five dust deposition gauge (DDG) sites and two High Volume Air Samplers (HVAS) during the reporting period as required by the approved Air Quality Management Plan and Environment Protection Licence (EPL).

The DDGs (shown in Plan 7: Dendrobium Monitoring Locations) were:

- located around the site to monitor control effectiveness and throughout the community to determine amenity impacts; and
- measured on a monthly basis for ash content, combustible matter, total insoluble matter and total solids (with analysis performed at a NATA [National Association of Testing Authorities] accredited laboratory).



The results from the DDGs are compared to the amenity goal of 4 g/m²/month for total insoluble solids as outlined in Table 14 and visually analysed to determine the percentage contribution of dirt, coal, fibrous material, metallics, foam/rubber, vegetation and insect matter.

Additional DDGs may be deployed around the operations and throughout the community for investigative purposes as required. No additional DDGs were deployed during the reporting period.

The two HVAS measured total suspended particulates (TSP) and particulate matter less than 10 micrometres (PM₁₀). The HVAS (shown on Plan 7: Dendrobium Monitoring Locations) were:

- located on site (Pit Top and KVCLF);
- analysed for TSP and PM₁₀ on a monthly basis over a 24-hour period in accordance with the approved Air Quality Management Plan and EPL requirements (with samples analysed by a NATA accredited laboratory); and
- compared to the air quality standards (from the Consent) outlined in Table 14.

Results from the air quality monitoring program are reported:

- via the South32 website in the 14-day report; and
- annually in the EPL Annual Return and Annual Review.

Table 14: Relevant Standard for Air Quality

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

In April 2021, the Air Quality and Greenhouse Gas Management Plan (AQMP) was reviewed and submitted to DPIE. The AQMP was revised to remove the DDGs and HVAS from the air quality monitoring program and replace the HVAS with optical photometers. The revised AQMP was approved on 8 June 2021.

In July 2021, Dendrobium's EPL was amended to include the use of real-time air quality optical photometers and remove the requirement to monitor air quality using DDGs and HVAS. In the next reporting period, DDG and HVAS monitoring will be decommissioned in place for real-time monitoring. Photometers were installed and commenced monitoring on 15 July 2021. The photometer installed at the KVCLF is shown in Plate 2.



Plate 2: Photometer dust monitor located at the KVCLF

6.1.1.2 DDG Results

Dust levels measured in the DDGs located within the community were below the amenity goal of 4 g/m²/month for insoluble solids. Point 13 and 18 are operational control gauges. Dust levels varied over the reporting period, however the 12-month moving averages have remained below the amenity goal for all sites. The results have decreased over the past year.

Figure 2 shows the annual averages for each of the sites monitored since FY08.

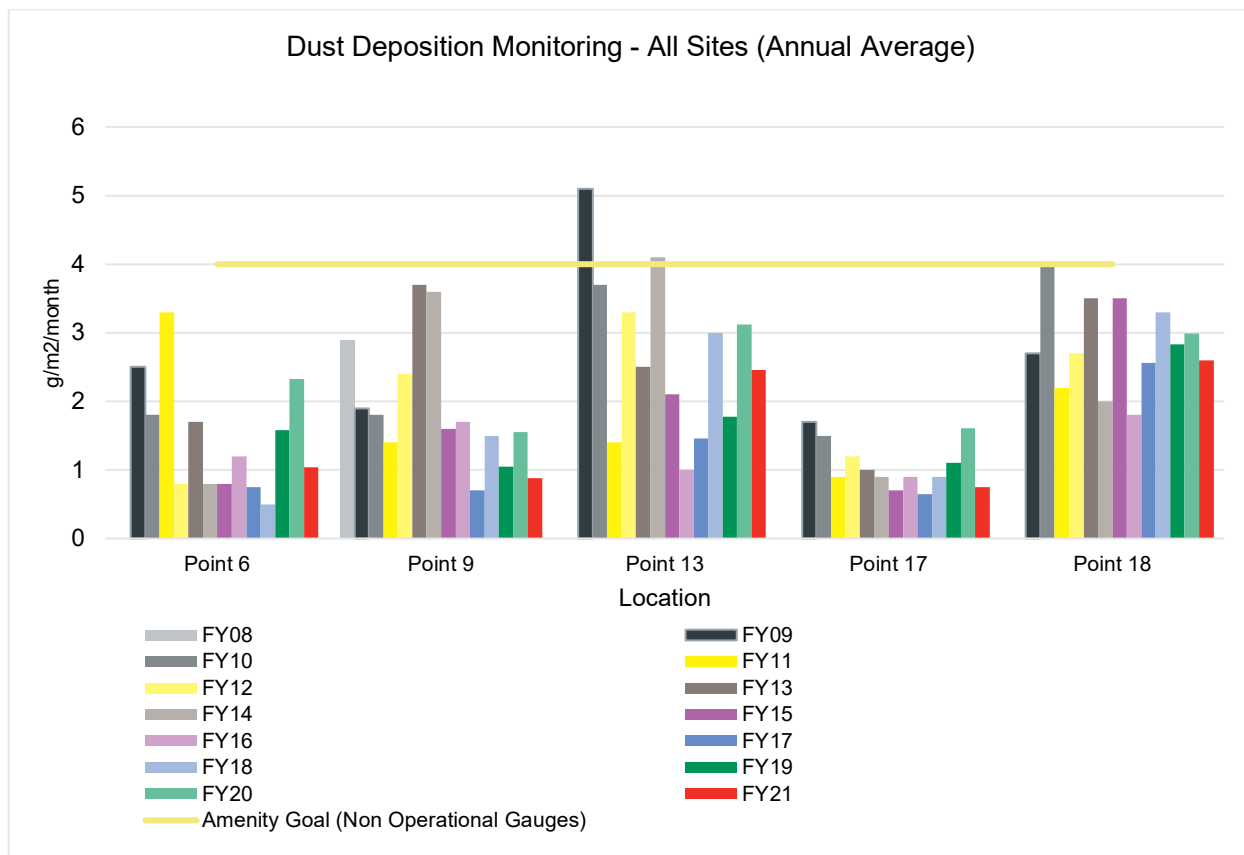


Figure 2: DDG results

6.1.1.3 HVAS Results

While dust levels from HVAS have varied during the reporting period, with minor elevated levels over the summer months, results remained within the compliance criteria (Table 14).

Figure 3 and Figure 4 show the PM₁₀ and TSP monthly 24-hour average results for Points 20 (Kemira Valley) and 21 (Pit Top) respectively.

Figure 5 and Figure 6 shows annual averages for PM₁₀ and TSP for these monitoring sites.

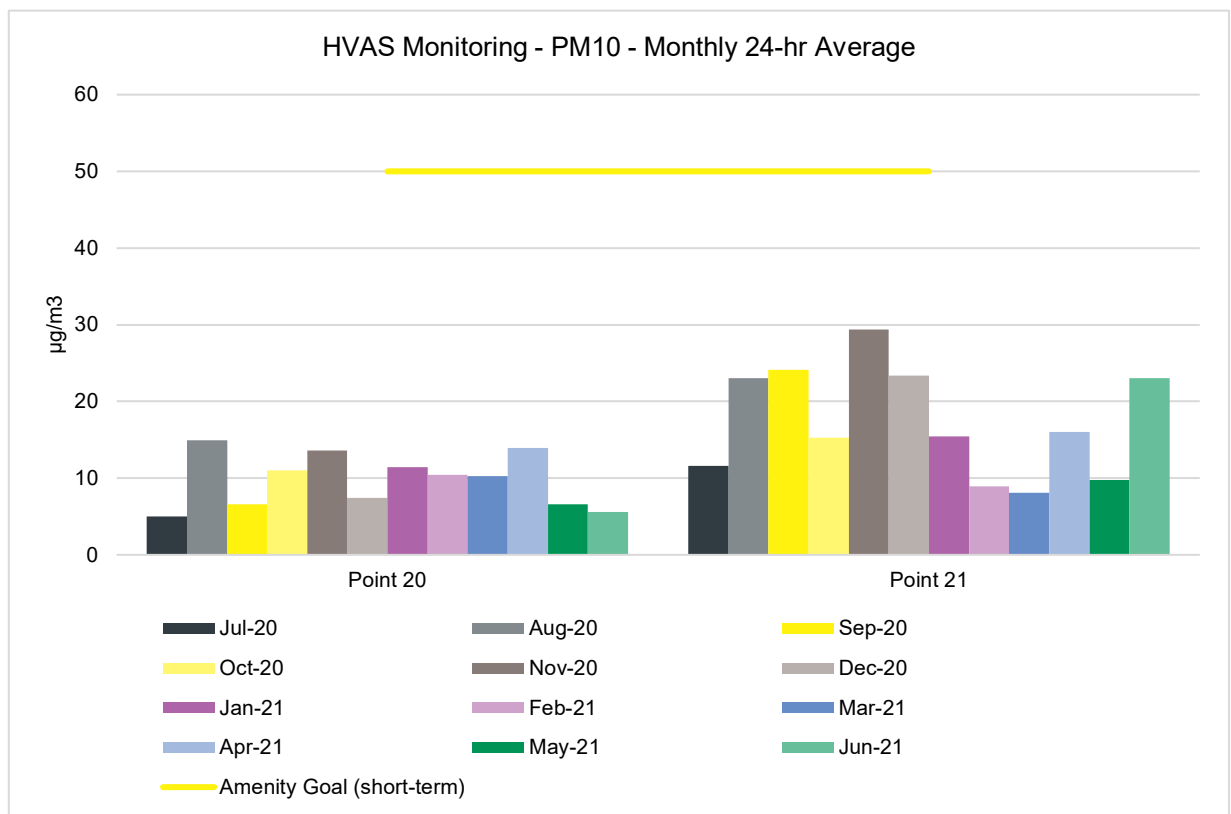


Figure 3: Monthly 24-hour average HVAS Results (PM₁₀)

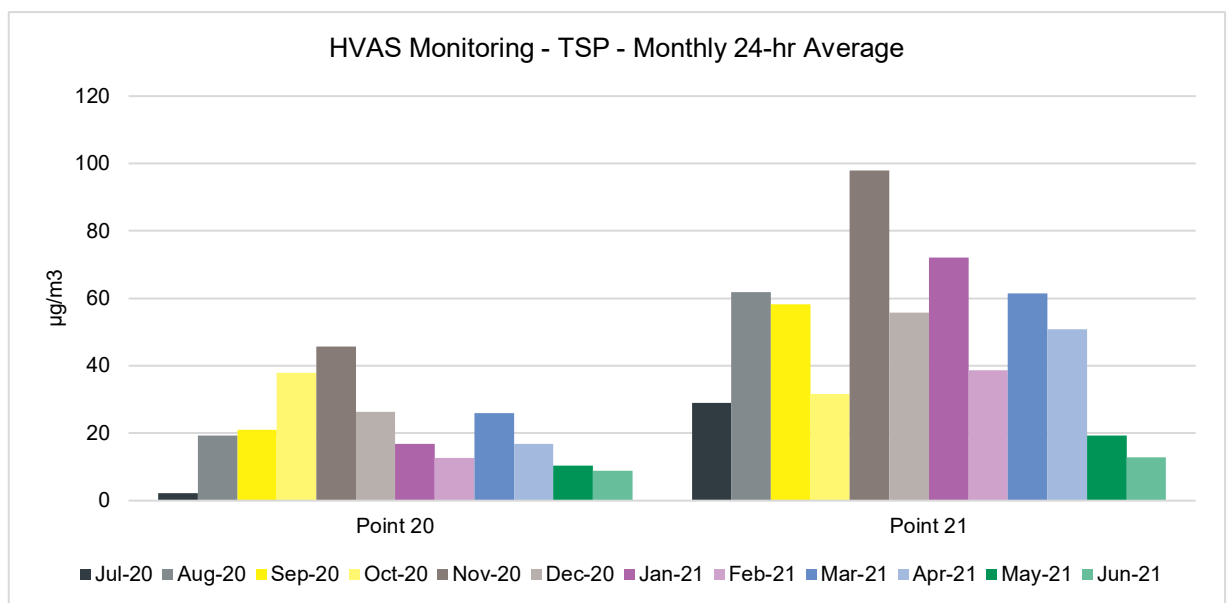


Figure 4: Monthly 24-hour average HVAS Results (TSP)

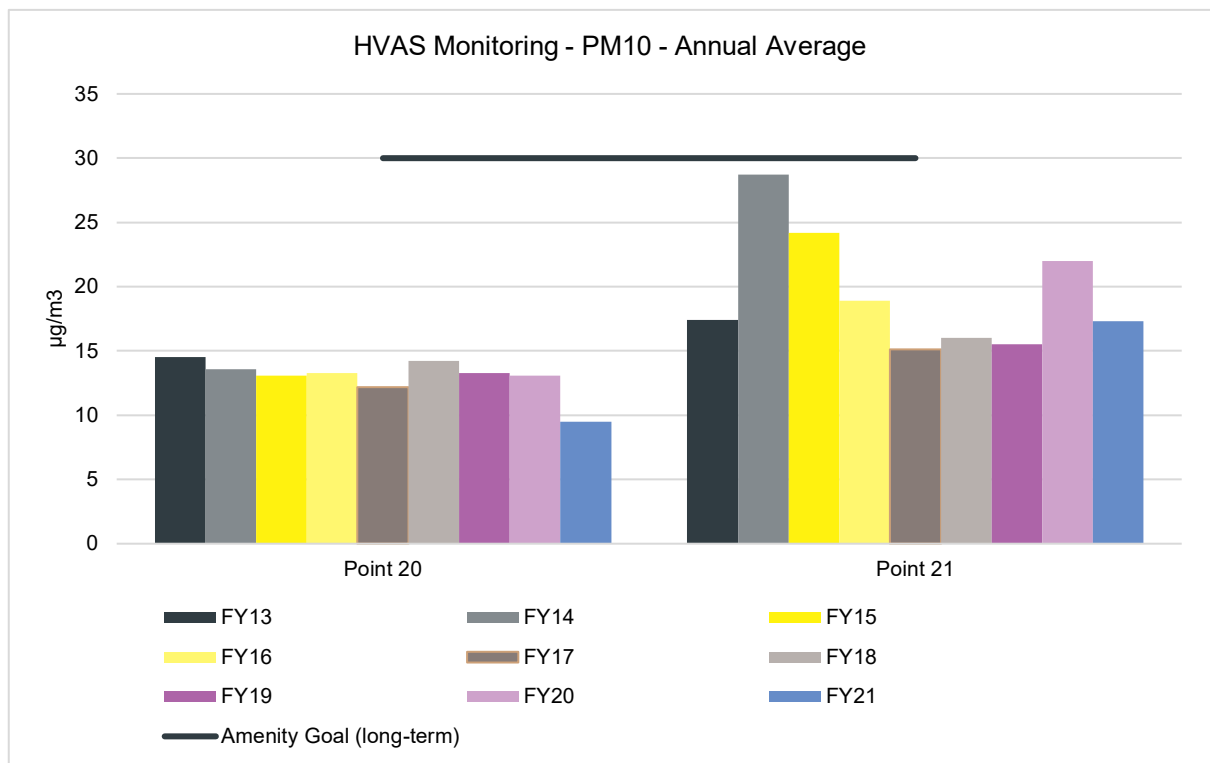


Figure 5: Annual average HVAS Results PM₁₀

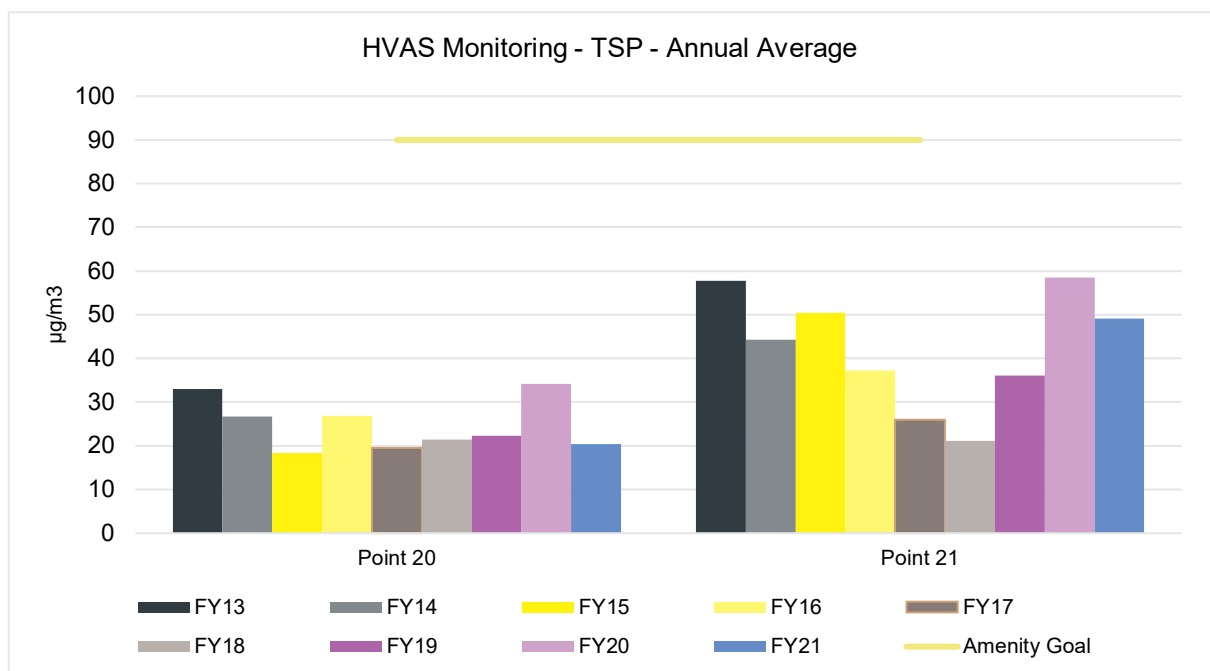


Figure 6: Annual average HVAS Results TSP

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

No air quality issues are considered relevant for Ventilation Shaft 2/3 as the site has been rehabilitated or is covered with gravel. 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.

An Advisory Letter was issued by the EPA on 3 December 2020 regarding the dust emission event at Stockpile 4. Refer to Section 11 for further details.

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 and Landscape Management Plan. These plans address 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 grey water treatment plant (GWTP) by an industrial vacuum tanker as required. The sediment pond assists in settling out suspended solids before surface water enters the GWTP.

An uncontrolled release of water, including sediment, occurred from the Kemira Valley sediment ponds in August 2020. Refer to Section 11 for further details.

6.2.2 Ventilation Shaft 1 and 2/3

Erosion is not a significant issue at the ventilation shaft sites as disturbed areas have been rehabilitated or stabilised with gravel.

6.2.3 Cordeaux Colliery

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



6.2.4 DCPP

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

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 7: Dendrobium Monitoring Locations) which include sites upstream and downstream of both the Pit Top and Kemira Valley, as well as the mine dewatering Licence Discharge Point (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 Point 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 below. 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 regular monitoring. Results indicate that the water management system in operation at the KVCLF site is effective with minimal influence on the surrounding Brandy and Water Creek. The results are summarised in Table 15 and Table 16. There was natural variation in sample results throughout the reporting period. However, trends for Dend 7 and Dend 10 remained relatively consistent for FY21. pH, electrical conductivity (EC) and Total Suspended Solids (TSS) for the reporting period are shown in Figure 7, Figure 8 and Figure 9 respectively. Elevated TSS in March can be attributed to high rainfall during the sampling period. The resulting higher TSS is observed in both upstream and downstream sites.

Elevated TSS levels were recorded following the uncontrolled release of water from the Kemira Valley sediment ponds in August 2020. Upstream and downstream of the KVCLF indicated TSS



levels of 27 mg/L and 113 mg/L respectively. These results were not recorded as part of the water monitoring program in the 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 6: Dendrobium Long-Term Environmental Monitoring Data.

Table 15: Summary of Water Quality Results – Dend 7 (Upstream of KVCLF)

Parameter	Units	Min	Max	FY Average
pH	pH units	7.0	8.3	8.0
TSS	mg/L	<5	82	20
Oil and Grease	mg/L	<5	<5	<5
Conductivity	µS/cm	395	563	447

Table 16: Summary of Water Quality Results – Dend 10 (Downstream of KVCLF)

Parameter	Units	Min	Max	FY Average
pH	pH units	7.9	8.4	8.3
TSS	mg/L	<5	99	22
Oil and Grease	mg/L	<5	<5	<5
Conductivity	µS/cm	398	581	459

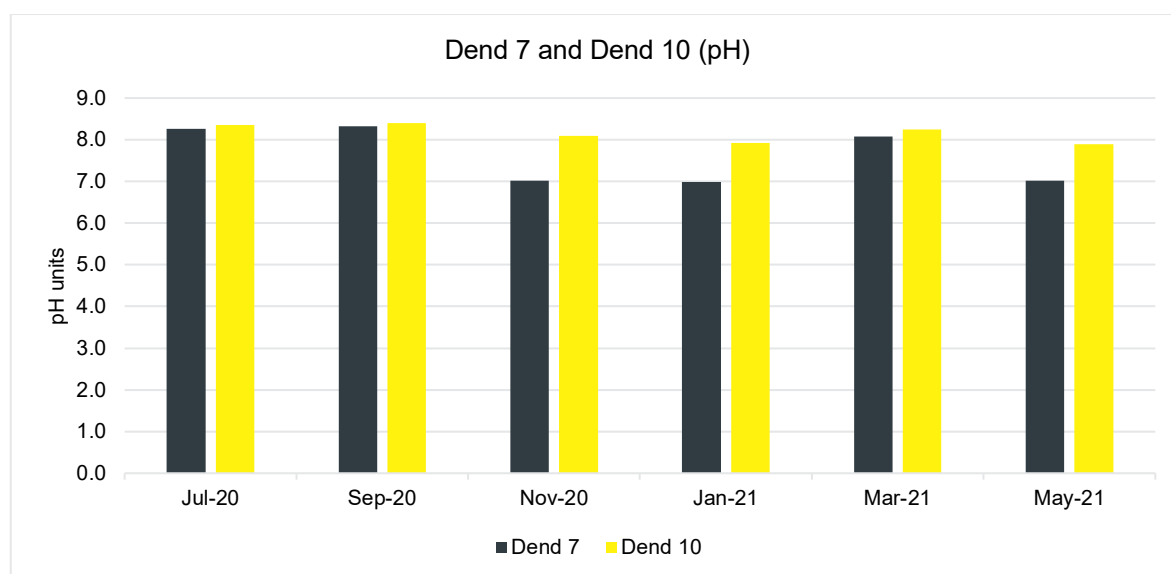


Figure 7: Dend 7 (upstream KVCLF) and Dend 10 (downstream KVCLF) - pH

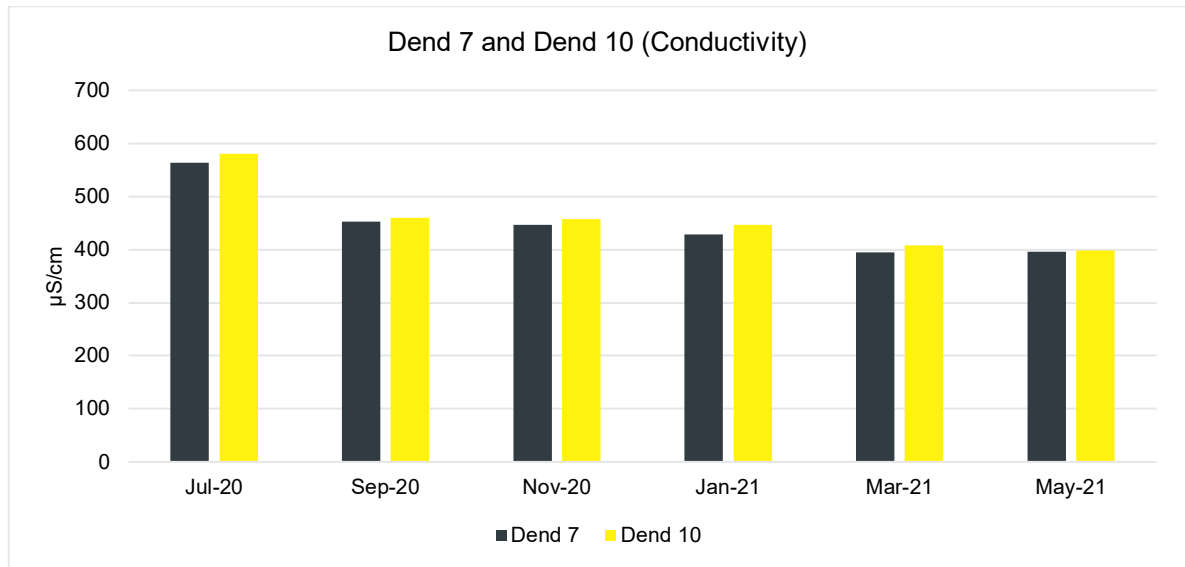


Figure 8: Dend 7 (upstream KVCLF) and Dend 10 (downstream KVCLF) – Conductivity

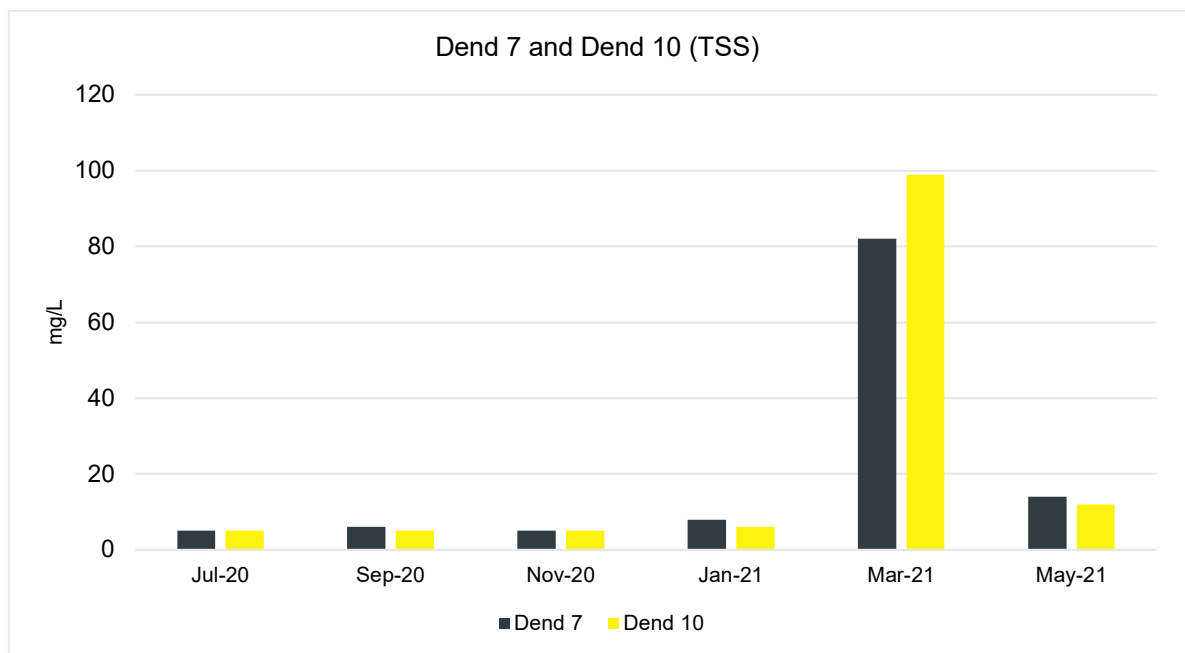


Figure 9: Dend 7 (upstream KVCLF) and Dend 10 (downstream KVCLF) – TSS



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, with the exception of March 2021, where the variation between the upstream and downstream sites was not able to be determined post receipt of sampling results, and was likely to have been a result of a sampling issue. The results are summarised in Table 17 and Table 18. Trends for pH, conductivity and TSS for FY21 are shown in Figure 10, Figure 11 and Figure 12 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 6: Dendrobium Long-Term Environmental Monitoring Data.

Table 17: Summary of Water Quality Results – Dend 12 (Upstream of Pit Top)

Parameter	Units	Min	Max	Average
pH	pH units	7.7	8.1	7.9
Total Suspended Solids	mg/L	<5	172	32.8
Oil and Grease	mg/L	<5	<5	<5
Conductivity	µS/cm	184	413	272

Table 18: Summary of Water Quality Results – Dend 13 (Downstream of Pit Top)

Parameter	Units	Min	Max	Average
pH	pH units	7.4	8.1	7.9
Total Suspended Solids	mg/L	<5	8	6
Oil and Grease	mg/L	<5	<5	<5
Conductivity	µS/cm	218	325	291

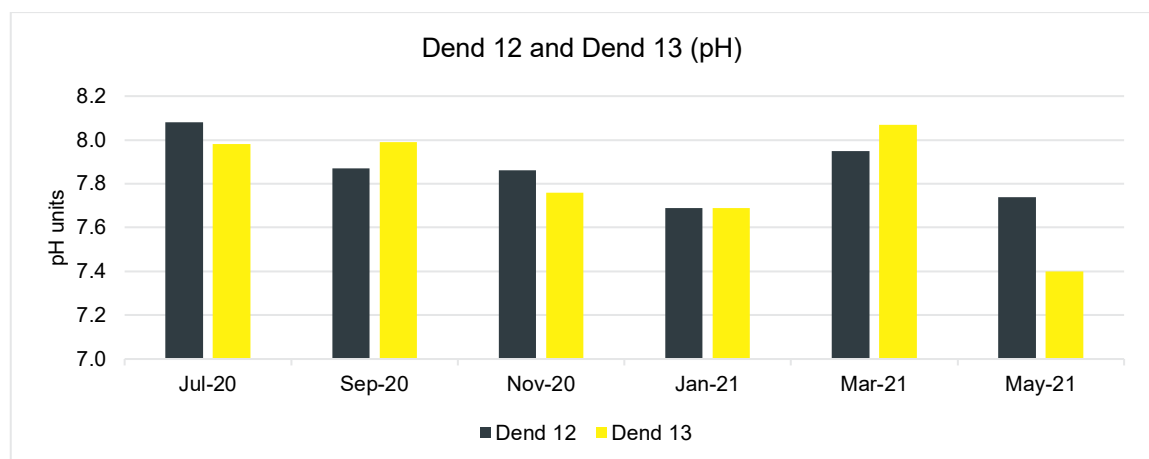


Figure 10: Dend 12 (upstream of Pit Top) and Dend 13 (downstream of Pit Top) – pH

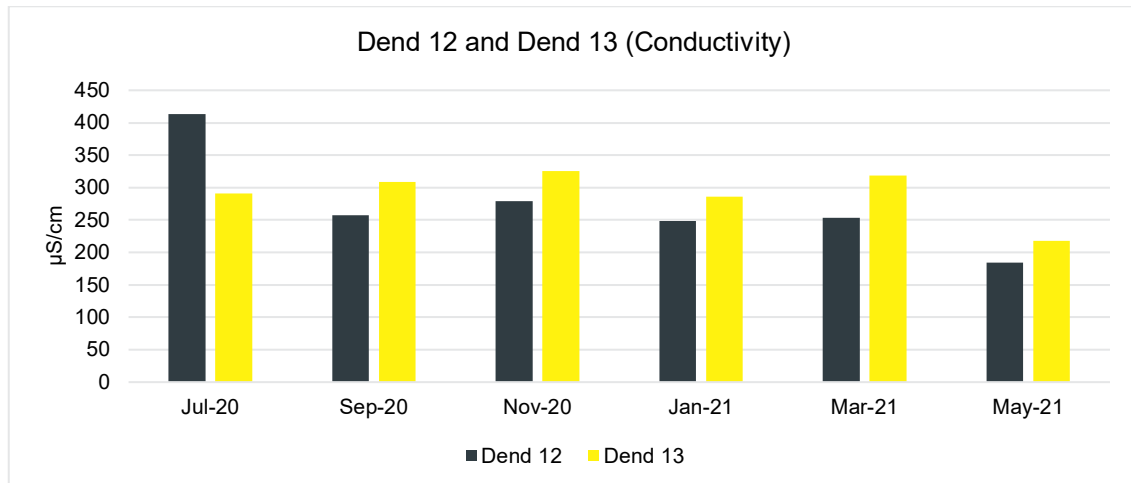


Figure 11: Dend 12 (upstream of Pit Top) and Dend 13 (downstream of Pit Top) – Conductivity

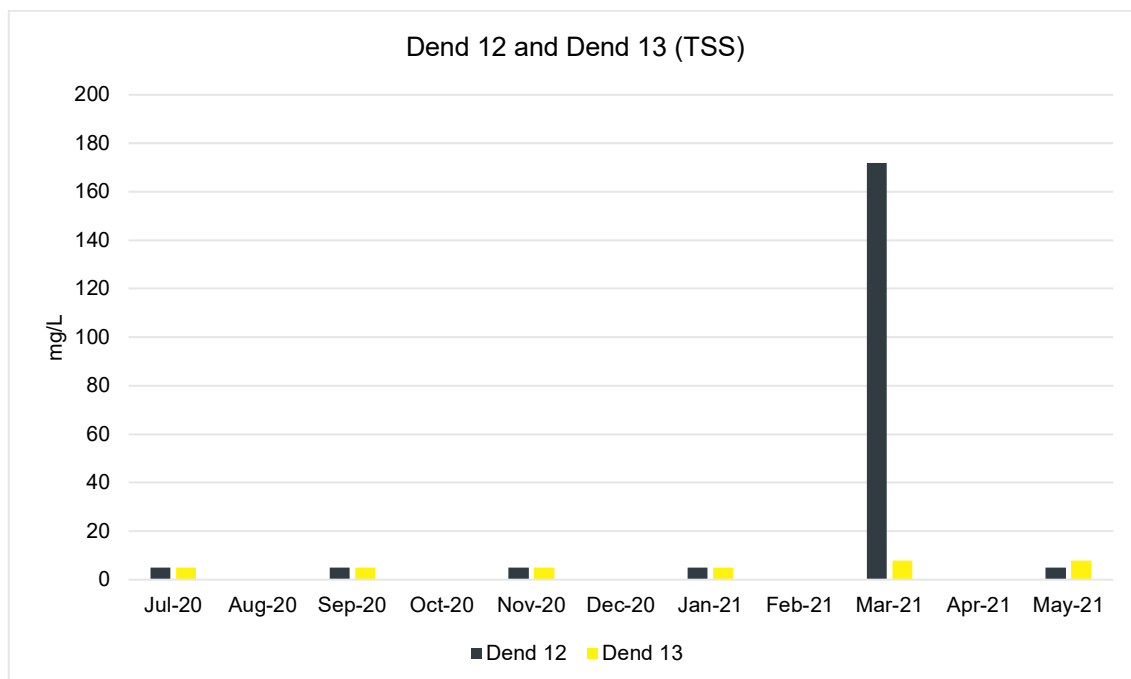


Figure 12: Dend 12 (upstream of Pit Top) and Dend 13 (downstream of Pit Top) – TSS

6.3.1.6 **Monitoring and Results – Licenced Discharge Point LDP 5**

Water from the old Kemira Mine workings and KVCLF sediment ponds is discharged through LDP 5, located at Marley Place (refer to Plan 7: Dendrobium Monitoring Locations). Brine from the IMC Appin West and Appin North Water Treatment Plants is transported by truck to Marley Place and discharged through LDP 5. A total volume of 2,627.67 ML (including 137.36 ML and 1.16 ML of brine from the Appin West and Appin North Water Treatment Plants respectively) was discharged in this reporting period. Trends in water discharge over previous years is provided in Appendix 6: Dendrobium Long-Term Environmental Monitoring Data.

A summary of the monitoring requirements and limits for the reporting period for LDP 5 are provided in Table 19. There was natural variation in sample results throughout the reporting period. A single



non-compliance was reported for TSS limits in October 2020, however the general trends for LDP 5 remained relatively consistent for FY21 as shown in Figure 13 and Figure 14. Long-term average trends have shown stable results within limits. Graphs depicting trends in water quality over previous years is provided in Appendix 6: Dendrobium Long-Term Environmental Monitoring Data.

Table 19: Monitoring Requirements and Prescribed Limits for LDP 5

Parameter	Units	Frequency	Sampling Method	Licence Limit
Arsenic	mg/L	Monthly	Grab sample	1.3
Conductivity	µS/cm	Monthly	Grab sample	—
Copper	mg/L	Monthly	Grab sample	0.08
Nickel	mg/L	Monthly	Grab sample	5
Oil and Grease	mg/L	Monthly	Grab sample	10
TSS	mg/L	Monthly	Grab sample	30
Zinc	mg/L	Monthly	Grab sample	0.4
pH	pH	Monthly	Grab sample	6.5 - 9.0

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: EPA Annual Return - FY21);
- Annual Review; and
- South32 website (14-day Report).

A summary of monitoring results for the reporting period is provided in Table 20. The reporting period saw a single recorded non-compliance for TSS above the EPL limit. This single event is an outlier against long-term trends. Graphs depicting long-term trends in water quality are provided in Appendix 6: Dendrobium Long-Term Environmental Monitoring Data.

Table 20: EPL Annual Monitoring Summary for LDP 5

Parameter	Units	Min	Average	Max	EPL Limit
Arsenic	mg/L	0.008	0.011	0.020	1.3
Conductivity	µS/cm	1680	1908	2840	N/A
Copper	mg/L	<0.001	0.001	0.002	0.08
Nickel	mg/L	0.010	0.019	0.075	5
Oil and Grease	mg/L	<5	5	9	10
pH	pH	8.0	8.3	8.5	6.5 - 9.0
Total suspended solids	mg/L	<5	9	34	30
Zinc	mg/L	0.026	0.052	0.093	0.4



A copy of the 2020/2021 EPA Annual Return has been provided as Appendix 1: EPA Annual Return - FY21.

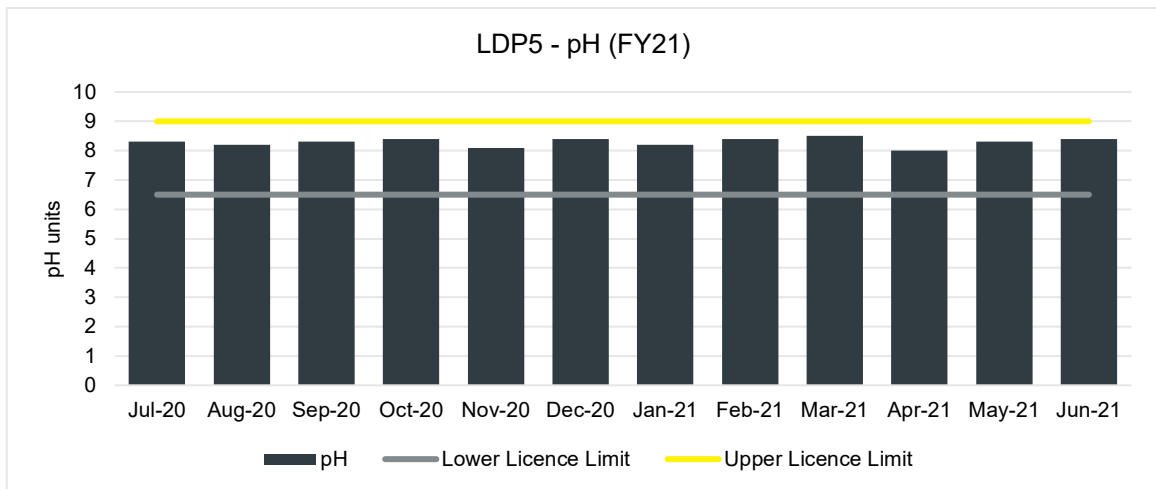


Figure 13: LDP 5 - pH (FY21)

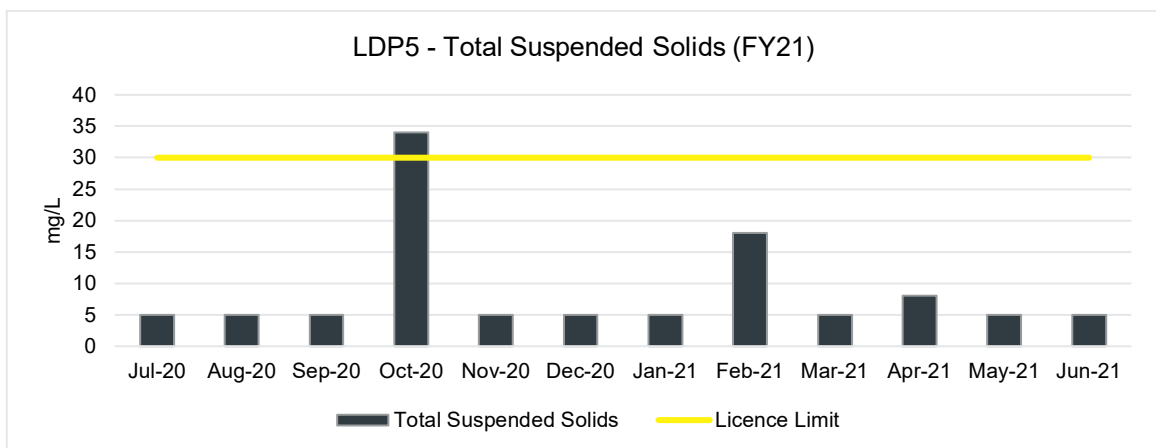


Figure 14: LDP 5 - TSS (FY21)

6.3.1.7 Allans Creek Monitoring Program

A monitoring program commenced 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 water treatment plants on Allans Creek, following the commissioning of the new water treatment plant at Appin North⁸. The results from the monitoring will be compared to the predictions in the modelling undertaken. The monitoring is undertaken at five sites along Allans Creek (including LDP 5). The results of the monitoring and the comparison to the modelling results is planned to be completed in FY22, pending commissioning timeframes for the permanent water treatment plant.

⁸ The temporary water treatment plant was commissioned in May 2021. The permanent water treatment plant is planned to be commissioned in FY22.



6.3.2 Cordeaux Colliery

Due to the cessation of coal mining, 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 mine water holding lagoons for settlement. 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 3.9 ML of water was discharged from the mine water holding lagoons to the underground workings.

Figure 15 shows the trends for water quality results for pH and conductivity of water within the mine holding lagoons from 2000 to 2021. Since cessation of underground pumping operations in 2002, water quality in the mine water holding lagoons has greatly improved (particularly in relation to conductivity) and remained generally stable. During the reporting period, monitoring results within the mine water holding lagoons continue to reflect good water quality. The pH ranged between 6.43 and 8.05 and conductivity ranged between 148 and 236 $\mu\text{S}/\text{cm}$. Oil and grease results were below the limit of reporting in all FY21 sampling events.

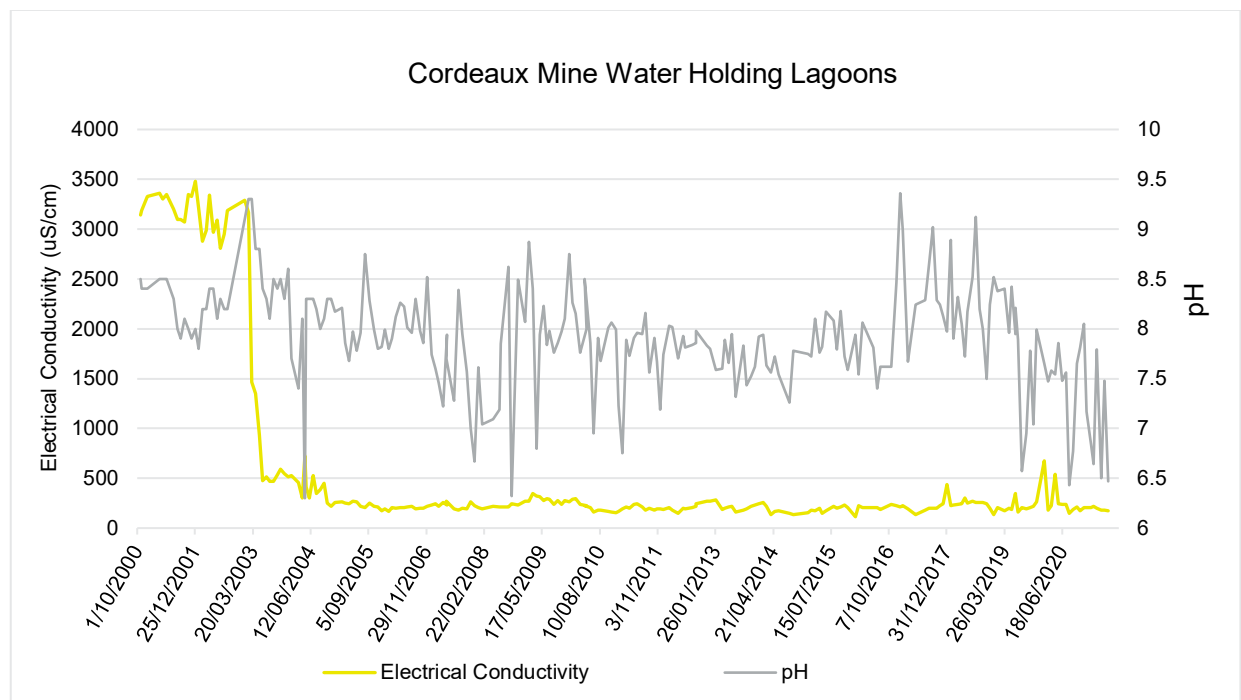


Figure 15: Water Quality Data from the Mine Water Holding Lagoons

The clean area catchment run-off from the Cordeaux Pit Top site (including the sealed employee car parking area) reports to the sand filter lagoon and leaves site to the local environment via the sand filter 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 pH 6.67 and 8.14, with conductivity ranging between 196 and 586 $\mu\text{S}/\text{cm}$. Oil and grease results were below the limit of reporting in all FY21 sampling events. Results from the Cordeaux Filter Lagoon underflow for the period 2000 to 2021 are shown on Figure 16.

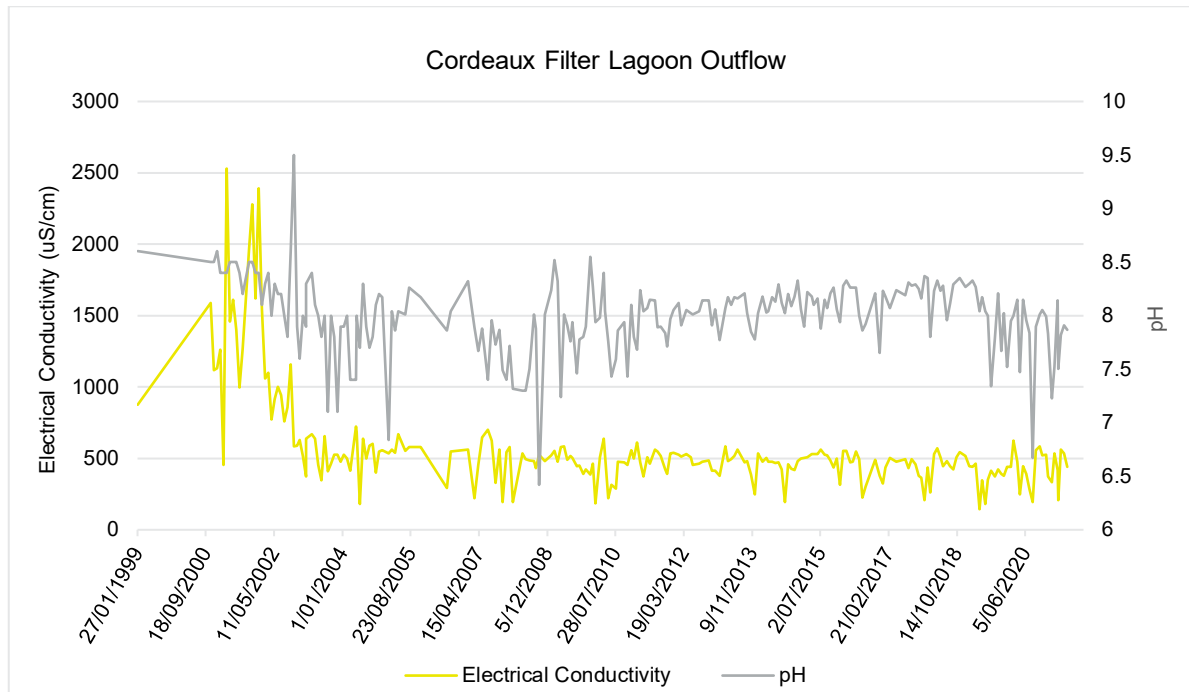


Figure 16: Water Quality Data from the Cordeaux Filter Lagoon Underflow

Water quality from the Cordeaux Filter Lagoon outflow improved following cessation of operations in 2002. Since then water quality has remained generally stable.

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 DCP

Surface water quality at the DCP is managed under the BlueScope Steel EPL 6092.

6.4 Contaminated Land

6.4.1 Dendrobium Mine

No significant land pollution events occurred during the reporting period at Dendrobium Mine. Basix Environmental Solutions (BES, 2010) completed a preliminary contamination assessment of the Dendrobium Mine Pit Top and KVCLF in March 2010. The results from subsequent soil sampling were provided in previous Annual Reviews and indicated that:

- Polycyclic aromatic hydrocarbon levels were below the National Environment Protection Measure health investigation level criteria for parks, recreation open space and playing fields.
- Total petroleum hydrocarbon levels were below the Dutch Intervention Value of 5,000 mg/kg.
- Minor oil staining of sealed surfaces occurred. For the majority of the Pit Top, it is likely that any potential contamination (existing under sealed surfaces or on unsealed road verges storage areas) is minor and not likely to export off site.

Following the uncontrolled release of water containing sediment from the Kemira Valley sediment ponds in August 2020, coal fines were observed in various sections of Brandy and Water Creek and American Creek. A clean up program was implemented to remove the coal fines. An environmental assessment of the creeks in November 2020 observed no ongoing evidence of coal fines.



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 FY21.

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. The site is located north of Picton Road in proximity to Fire Trail No. 8, Cataract NSW. The spill was reported to relevant Government agencies. A clean up notice was issued by WaterNSW and a Remedial Action Plan (RAP) was submitted. The works included the removal of above ground structures, transformer bunds, footings and impacted soils and sediments. Validation works associated with the RAP were completed in the transformer yard and associated areas of the site and the report submitted to WaterNSW, who advised that they consider the requirements under the Clean Up Notice 4/2017 to be fully discharged.

The implementation of the Corrimal No. 3 Water Quality Monitoring Program (WQMP) has demonstrated that the remediation activities at Corrimal No. 3 have been effective in mitigating impacts to the environment. The TARP was updated in FY20 to reflect a reduced monitoring program. The final WQMP report was completed in March 2020 and recommended no further environmental monitoring related to the remediation of the transformer vandalism spill is warranted. The WQMP has now been endorsed by an independent auditor. Periodic 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.

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

6.5.2 Cordeaux Colliery

No activities have occurred at Cordeaux Colliery that would affect threatened flora or fauna species.

6.6 Weeds

6.6.1 Dendrobium Mine

Weeds are managed in accordance with the Landscape Management Plan. Regular maintenance was carried out during the reporting period that included weed control.



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. Weed treatment was also undertaken along the KVRL.

6.6.2 Cordeaux Colliery

Weeds 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.

6.6.3 Ventilation Shafts 1, 2 and 3

Weed management is conducted at Ventilation Shaft 1 and Ventilation Shaft 2/3 in accordance with the Landscape Management Plan.

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 will continue to monitor the presence of weed species.

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 requirements of the Consent and the approved Noise Management Plan.

Noise management strategies in place include:

- Low frequency reversing alarms installed on most underground and surface-based vehicles.
- Rail track related noise management program.
- Noise monitors installed on the KVRL.
- Steel rollers replaced with polyurethane coated rollers on the Kemira Valley conveyor.
- Steel belt clips removed at Kemira Valley Tunnel.
- Self-imposed night time noise restrictions limiting mobile equipment and ballast movements around the Dendrobium Pit Top (from 10 pm to 6.15 am).
- Employee/contractor environment and community awareness training.

Noise from the rail operations on the KVRL has been a community concern since the commencement of operations under the Consent.



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 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 FY21. They were discussed at the RNWG and some of the actions undertaken include an independent review of the previous actions undertaken and actions proposed, a review and trial of different train speeds, track adjustment, track tamping, rail grinding, lubrication point relocation and the use of a friction modifier.

The RNWG will continue to meet in FY22 to discuss complaints and monitoring results and identify improvement opportunities.

6.8.1.2 **Noise Monitoring Program**

The program includes noise monitoring of the Pit Top site, the KVCLF and the rail operations. Attended noise monitoring is carried out quarterly at three locations as shown on Plan 7: Dendrobium Monitoring Locations.

During the reporting period, in addition to the noise monitors on the KVRL, five real-time noise monitors were installed at the Pit Top site as a proactive, internal measure to manage noise (refer to section 6.8.1.4).

The 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} noise criteria are shown in Table 21.

Table 21: Monitoring Requirements and Prescribed Limits

Location	Noise Criteria $LA_{eq,15\text{ min}}$ (dBA)			Noise Criteria for Dendrobium Operations, $LA_{1,1\text{ min}}$ (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 $LA_{eq,15min}$ criterion, with the exception of one exceedance against the $LA_{eq,15min}$ criterion at location R39a for KVCLF. This exceedance is discussed in Section 11.

Location R1 (17 High Street)

R1 is located to the north of the Pit Top. Representative noise results did not exceed the noise criteria. The $LA_{eq,15-min}$ representative noise results for R1 for FY21 are provided in Figure 17 and annual averages are provided in Figure 18.

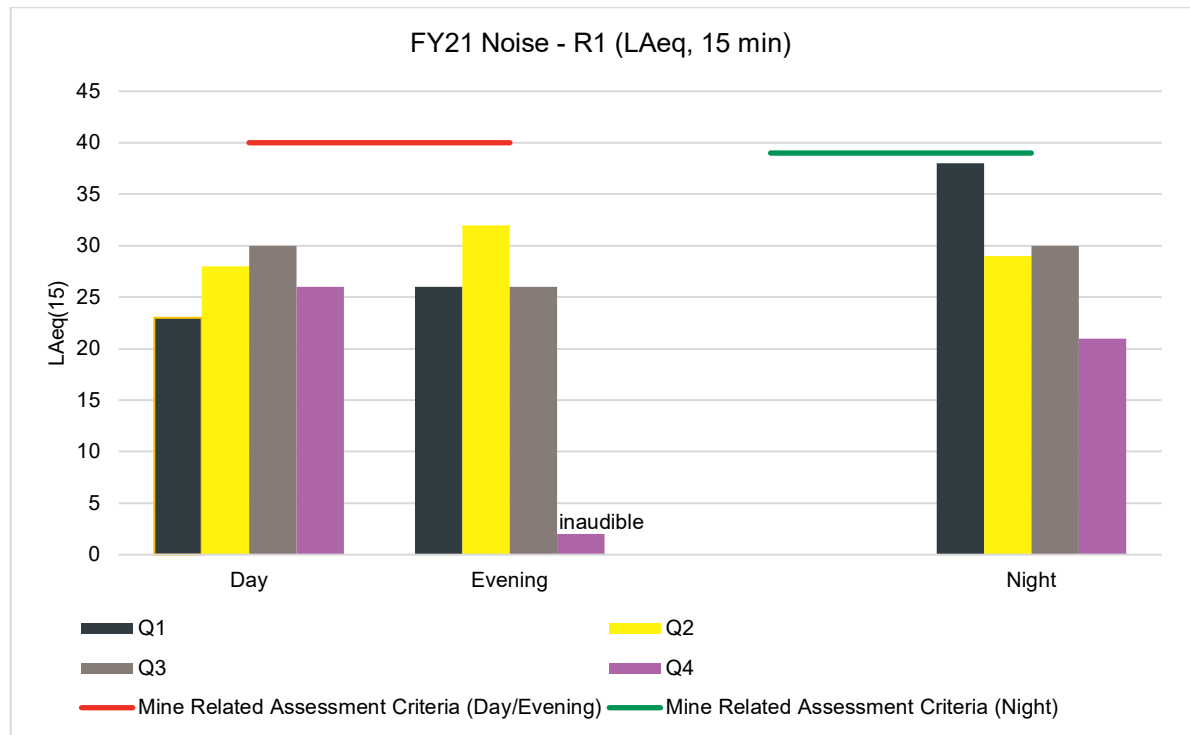


Figure 17: Site R1 Noise Compliance ($LA_{eq,15 min}$) – FY21

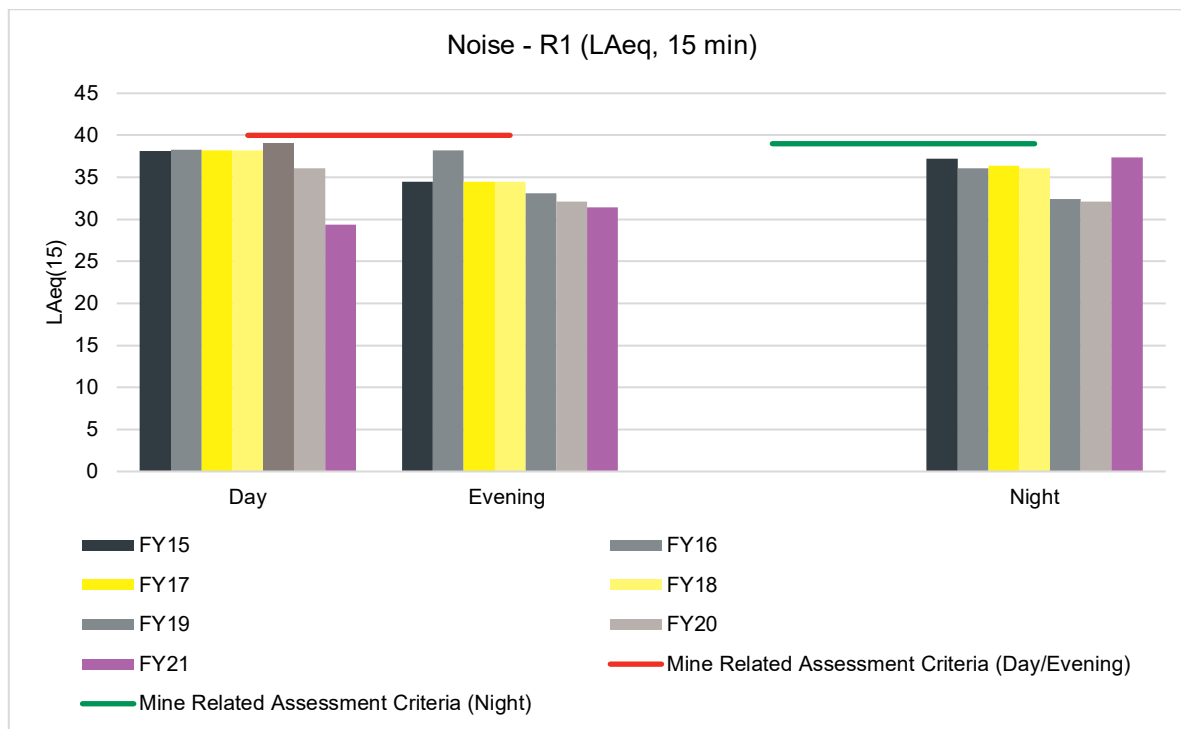


Figure 18: Site R1 Noise Compliance (LAeq,15 min) – FY15 to FY21

Location R6a (374 Cordeaux Road)

R6a is located to the east of the Dendrobium Pit Top. The representative noise results did not exceed the noise criteria. LAeq 15-min representative noise results for R6a for FY21 are provided in Figure 19 and annual averages are provided in Figure 20.

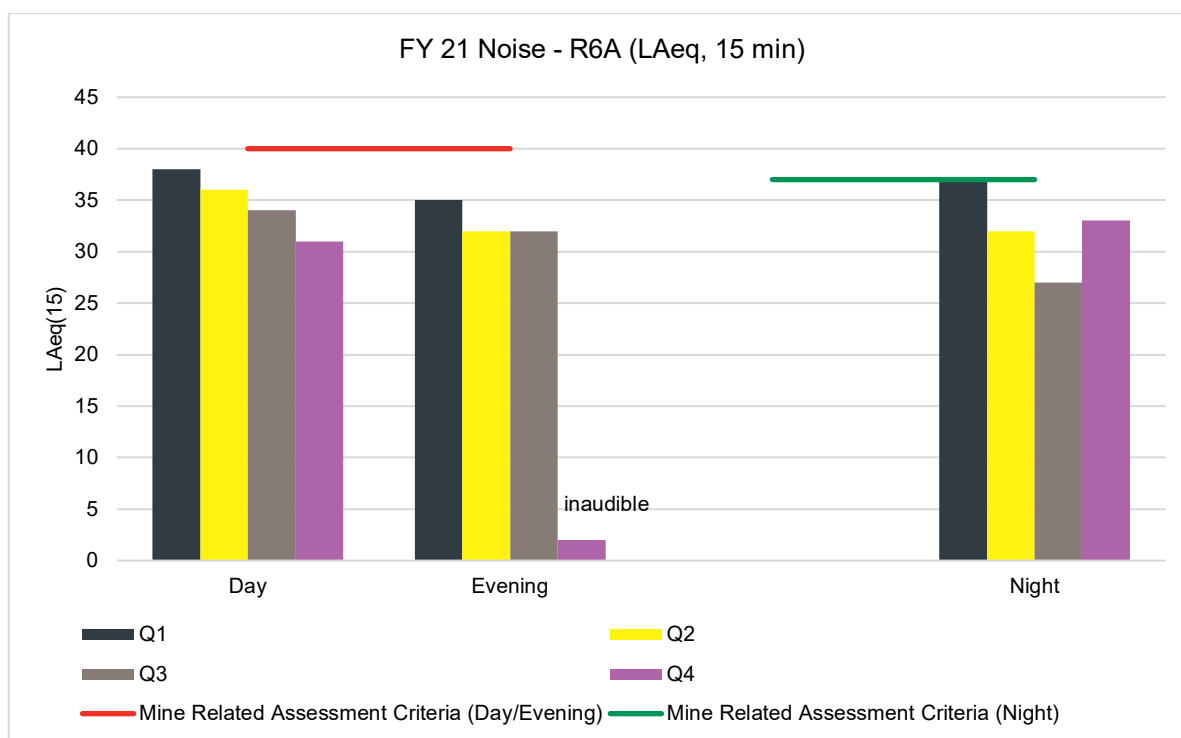


Figure 19: Site R6a Noise Compliance (LAeq,15 min) – FY21

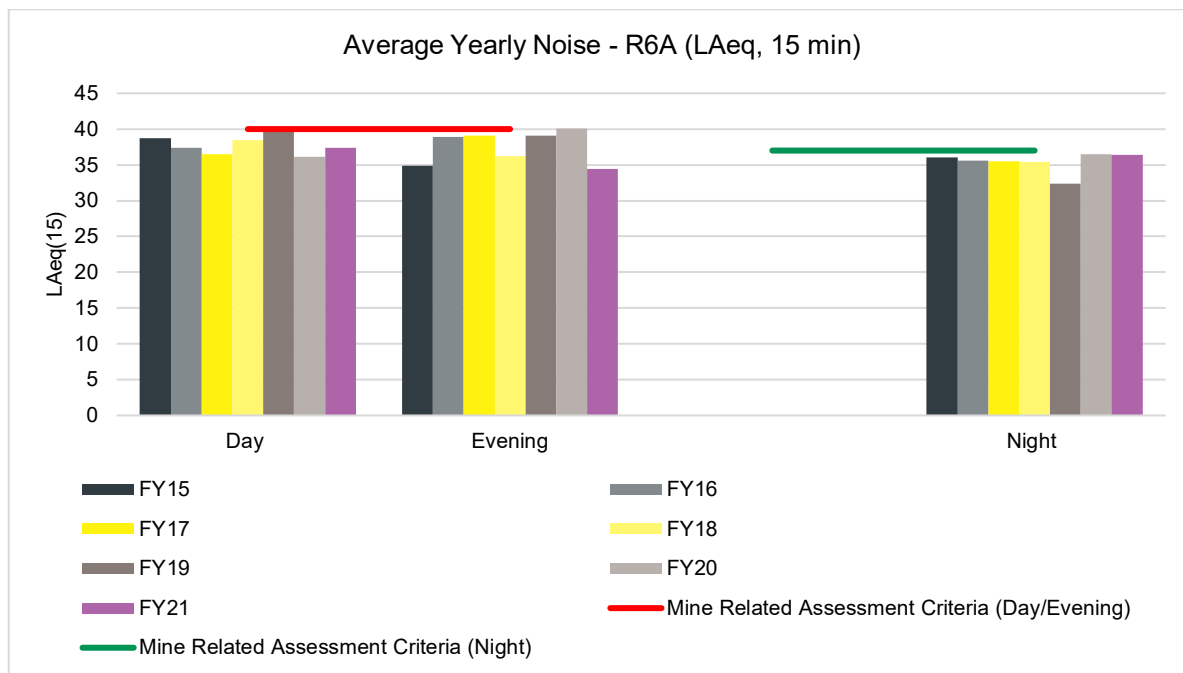


Figure 20: Site R6a Noise Compliance (LAeq,15 min) – FY15 – FY21

Location R39a

R39a is located to the south-east of the KVCLF. There was one exceedance on 8 February 2021 of the LAeq,15 min criterion in Condition 1 of Schedule 4 of the Consent. A result of 39 dBA was recorded and the limit is 37 dBA. This exceedance is discussed in Section 11. The LAeq,15-min representative noise results for R39a are provided in Figure 21 and annual averages are provided in Figure 22.

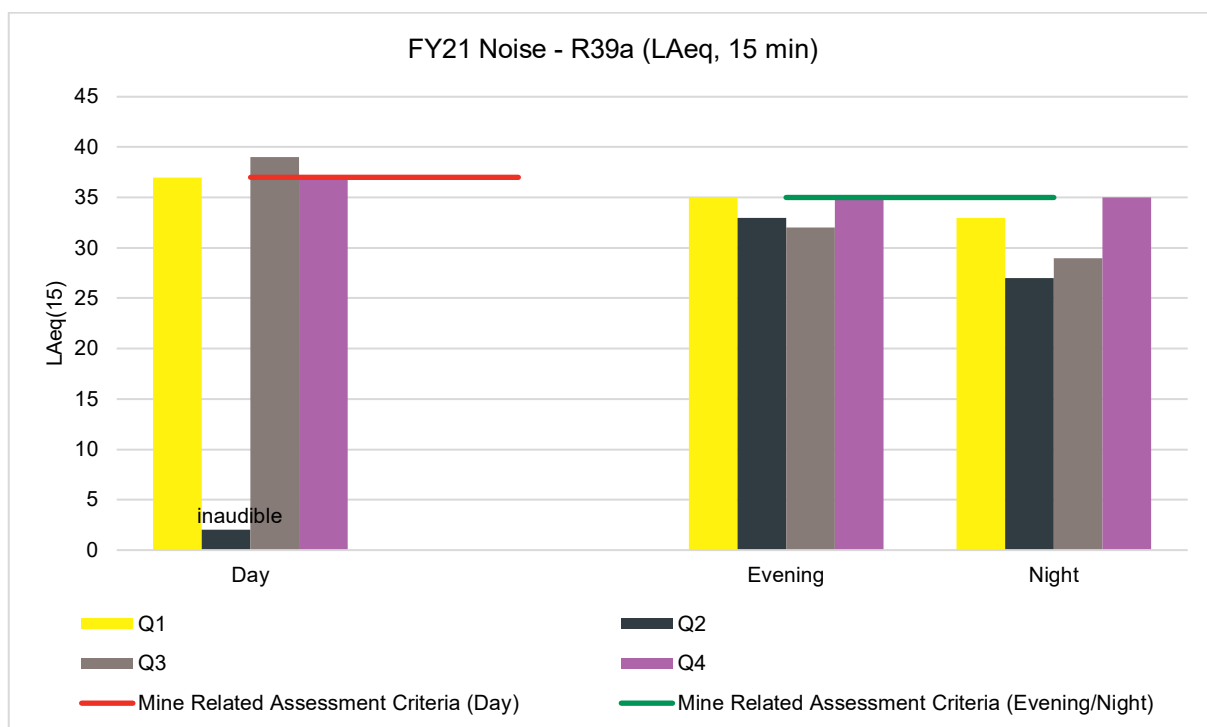


Figure 21: Site R39a Noise Compliance (LAeq,15 min) – FY21

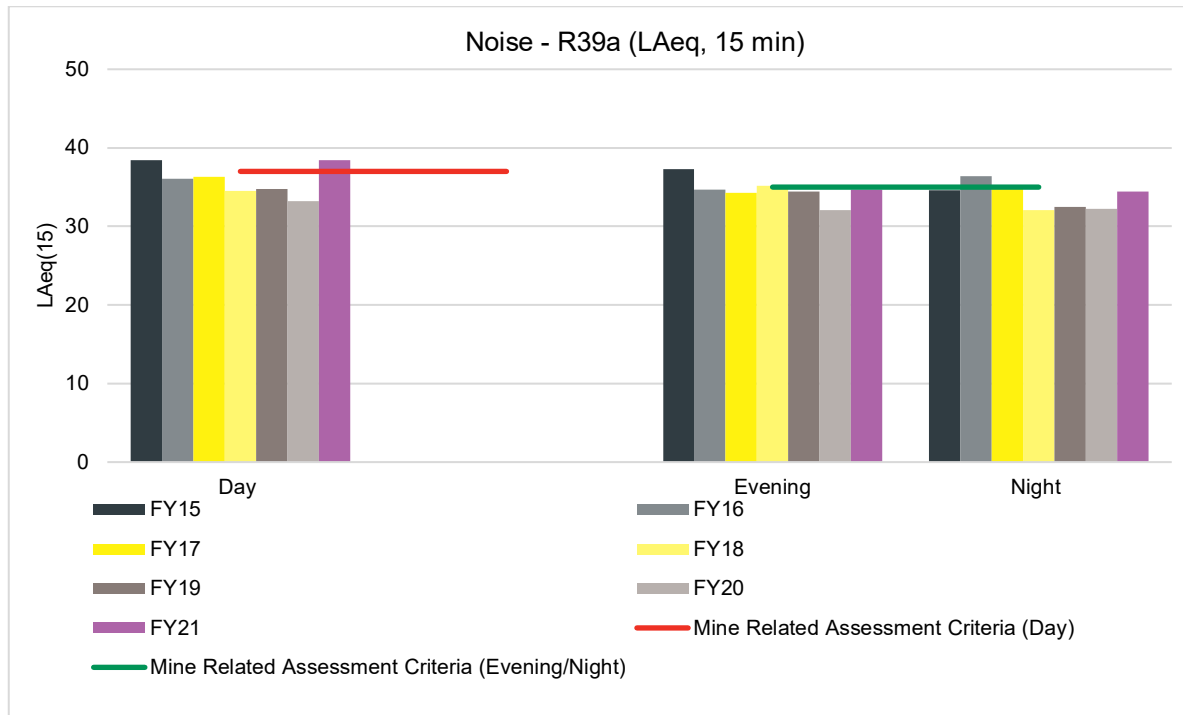


Figure 22: Site R39a Noise Compliance ($LA_{eq,15\text{ min}}$)

$LA_{1,1\text{ min}}$

There were no exceedances or non-compliances recorded for the $LA_{1,1\text{ min}}$ criteria at any of the monitoring locations. $LA_{1,1\text{ min}}$ representative noise results for sites R1, R6a and R39a are shown in Figure 23.

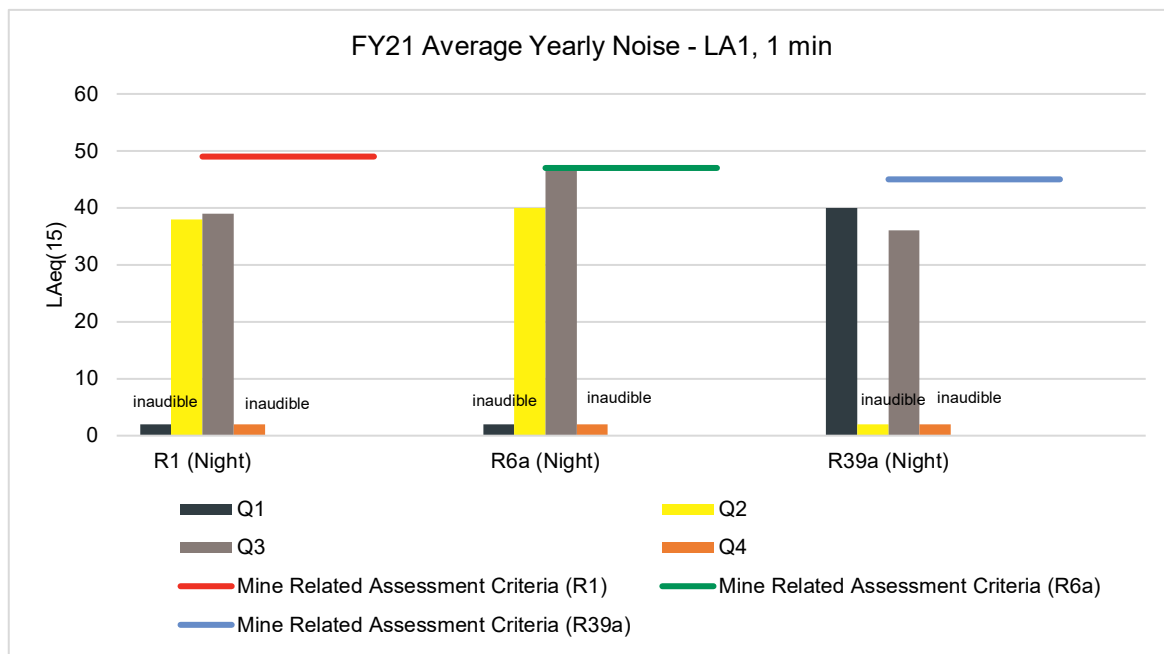


Figure 23: Site Noise Compliance (LA_{1,1 min}) for R1, R6a and R39a FY21

6.8.1.3 Rail Haulage

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 governed by these specific noise limits.

Table 22: Rail Haulage Noise Criteria

Operating Conditions	Speed and Location of Measurement	Noise Limits 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) was conducted in August 2020. No exceedances or non-compliances 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 will assist IMC to identify activities, events and locations that contribute to the site noise level 15-minute average. One of the noise loggers is shown in Plate 3.



When the project is complete, the data will be uploaded to a software interface that generates noise contour maps that show how activities on site are contributing to total noise levels.

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

Noise trigger levels have been identified, and when the trigger levels are reached, a notification will be provided to the control room personnel. This will allow the control room personnel to identify noisy equipment or activities that are contributing to higher noise levels and take action to reduce noise levels on site where practical and feasible.

It is anticipated that the system will be fully operational in the first half of FY22.



Plate 3: Real-time noise monitor on roof of Operations Building (Pit Top)

6.8.2 Cordeaux Colliery

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

6.8.3 DCP

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



6.9 Visual, Stray Light

6.9.1 *Dendrobium Mine*

Lighting at Dendrobium 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 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.

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

6.10 Aboriginal Heritage

6.10.1 *Dendrobium Mine*

The Dendrobium Area 3B Longwalls 9-18: Heritage Impact Assessment sets out the requirements to satisfy the Consent conditions for Aboriginal Heritage management in Dendrobium Area 3. Aboriginal Heritage Impact Permit (AHIP) No: 1132005 was issued to ICHPL on 18 December 2012. AHIP No: 1132005 allows for potential impacts (associated with subsidence movements from longwall mining) to Aboriginal archaeological sites within Dendrobium Area 3B. The management measures described in this Aboriginal Heritage Plan are the same as those to be implemented for AHIP No: 1132005. Details on subsidence impacts to Aboriginal Heritage sites over DA3B 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 significant 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 and overburden 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 no risk of spontaneous combustion.

6.13 Bushfire

6.13.1 Dendrobium Mine

During the reporting period, bushfire mitigation works were carried out in accordance with the Bushfire Management Plan.

Asset Protection Zones maintained around surface facilities include:

- 28-38 Harry Graham Drive – Kembla Heights;
- northern side of Cordeaux Road – Mount Kembla; and
- Ventilation Shafts 1, 2 and 3.

Fire Trails maintained around surface facilities include:

- containment line southern side of Dendrobium Mine Pit Top;
- Benjamin Road Fire Trail – Kembla Heights;
- Stones Road Fire Trail – Kembla Heights; and
- access to Ventilation Shafts 1, 2 and 3.

Bushfire suppression sprays were installed at the Dendrobium Pit Top during the last reporting period 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 site perimeter were identified during the reporting period and have been scheduled to be trimmed prior to the 21/22 bushfire season.

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 of its mining areas (1, 2, 3A, 3B and 3C) which describes the ongoing program of subsidence monitoring and management at the mine. 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, Resources Regulator and DPIE, including the Water Group and Biodiversity and Conservation Division. The implementation of the plan relates to monitoring and management of natural features, including:

- Surface 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 (man-made features).

During the reporting period, Longwall 16 extraction was completed on 4 November 2020. Longwall 17 extraction commenced on 12 December 2020, and as of 30 June 2021, had extracted approximately 1370 metres. Mine subsidence monitoring and reporting was carried out in accordance with the approved SMP for Area 3B and supporting management plans.

The monitoring program for Longwalls 16 and 17 is defined by the Area 3B SMP and supporting management plans which include:

- Dendrobium Area 3B Asset Protection Plan.
- Dendrobium Area 3B Groundwater Management Plan.
- Dendrobium Area 3B Swamp Impact, Monitoring, Management and Contingency Plan (SIMMCP).
- Dendrobium Area 3B Watercourse Impact, Monitoring, Management and Contingency Plan (WIMMCP).

A summary of monitoring commitments for this reporting period are provided in Appendix 7: Subsidence monitoring program for Dendrobium Mine. Additional information is provided in the Longwall 16 End of Panel (EoP) report, Area 3B SMP and supporting management plans, which can be accessed from the South32 Website: <https://www.south32.net/our-business/australia/illawarra-metallurgical-coal/document>.

6.14.1.1 Subsidence Movements

Subsidence movements resulting from the extraction of Longwall 16 were measured at the following survey points and lines:

- Avon Dam Closure Lines.
- Wongawilli Creek Closure Lines.
- Dendrobium Area 3B 3D monitoring points.
- Wongawilli Creek and Avon Dam Tributary Cross Lines.



- Swamp Cross Lines.
- Waterfall 54.
- Airborne Laser Scanner (ALS) of the area.

Subsidence parameters measured during the extraction and at the completion of Longwall 16 were generally similar to or less than what was predicted within the Area 3B SMP. For further detail on the subsidence movements measured for Longwall 16, refer to the Longwall 16 EoP Report. This report can be accessed via the South32 website: <https://www.south32.net/what-we-do/places-we-work/illawarra-metallurgical-coal/documents>.

6.14.1.2 Landscape Features

The IMC Environmental Field Team (IMCEFT) have conducted detailed monitoring and inspections on landscape features including swamps, watercourses, rock outcrops and the general area within Dendrobium Area 3B. This monitoring was conducted in accordance with the Dendrobium Area 3B SMP, WIMMCP (versions dated December 2013, June 2015, October 2015, October 2017, March 2019 and February 2020) and the SIMMCP (versions dated December 2013, June 2015, October 2015, October 2017 and March 2019, February 2020).

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

Sixty-four new surface impacts, and updates to existing impacts, were identified by the IMCEFT during the FY21 reporting period. Impacts were observed within watercourses and landscape features such as access tracks, cliff lines and steep slopes. For further information refer to the Longwall 16 EoP Report and Appendix 8: Summary of observed impacts and triggers identified during the reporting period.

6.14.1.3 Surface Water

HGEO (hydrogeologist consultants) completed an assessment of pre-, during and post-mining data after the completion of Longwall 16.

During Longwall 16, tributary site LA4_S1 recorded a Level 2 trigger for EC and a Level 3 trigger for pH.

EC triggers were recorded at Donalds Castle Ck (FR6) during extraction of Longwalls 15 and 16 however EC returned to baseline levels in the reporting period.

The effects of mining subsidence on surface water hydrology was assessed. TARP triggers for surface water hydrology were identified at Donalds Castle Creek (DCS2, DCU), DC13 (DC13S1), WC21 (WC21S1), WC15 (WC15S1), LA4 (LA4S1), LA2 (LA2S1), LA3 (LA3S1) and Wongawilli Creek. Water flow performance measures were met for Longwall 16.

6.14.1.4 Wongawilli Creek

Towards the end of 2017, the water level in Pool 43a on Wongawilli Creek fell below baseline levels (impact number DA3B_LW13_015, dated 28/11/2017). The observation triggered a Level 3 TARP because a previously reported fracture (first observed on 18/12/2013) is present in the sandstone forming the pool base. The water level returned to baseline levels during FY19 and have been sustained throughout FY21.

6.14.1.5 Upland Swamps – Shallow Groundwater and Soil Moisture

Longwall 16 mined beneath and/or passed within 400 m of shallow groundwater and soil moisture sites within three swamps: Swamps 13, 14 and 23.



Shallow groundwater TARP triggers were identified in Swamps 11, 14 and 23 following the analysis of shallow groundwater data.

Soil moisture TARP triggers were identified in Swamps 13 and 14 following the analysis of soil moisture data. Level 2 soil moisture TARPs for Swamp 23 were previously recorded however this was revised to 'No Trigger' following a specialist's review of the data in 2020 finding that changes were not clearly mining related.

For further information, refer to the EoP Surface Water and Shallow Groundwater Assessment: Longwall 16 (Area 3B). For more information please refer to the Longwall 16 EoP Report on the IMC website:

<https://www.south32.net/what-we-do/places-we-work/illawarra-metallurgical-coal/documents>.

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 Potential 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, Donalds Castle Creek, tributaries WC15, LA4 and LA2 and comparable control sites.

Reductions in aquatic habitat for over two years at Donalds Castle Creek constitute a Level 3 TARP trigger. No TARPs have been triggered with respect to Wongawilli Creek as there has not been a loss in aquatic habitat for longer than one year.

Fracturing of bedrock and potential diversion of flows in Avon Dam drainage line LA4A and Wongawilli Creek drainage lines WC15 and WC21 is likely to have resulted in some further minor reduction in quantity and connectivity of aquatic habitat in these drainage lines. Given the abundance of comparable first and second order stream habitat in the upper Avon and Cordeaux Catchments, associated impacts to aquatic biota would also be expected to be minor.

For more information on aquatic ecology refer to the Longwall 16 EoP Report on the IMC website: <https://www.south32.net/what-we-do/places-we-work/illawarra-metallurgical-coal/documents>.

6.14.1.7 Terrestrial Ecology and Swamps

An annual terrestrial ecology report was prepared for 2020 and forms the basis of assessment for the Longwall 16 EoP Report.

Visual trends of drying (or areas of die-back) were observed at swamps that have been directly mined beneath. The drying of these Impact Upland Swamps (those within the mining area) over time since impact may be exacerbated by the effect of the recent drought, though the correlation between impact of mining and drying of the Upland Swamps is evidenced by the significant difference between Control and Impact Upland Swamps over this drought period.

Cumulative impacts have been observed at several Impact Upland Swamps, which show stronger trends of significant decline in total species richness over time and significant changes to composition, with 'wetter' species becoming less common post-impact, suggesting a loss of species that prefer moist soils. Some swamps show species dying out over time, with limited recruitment of new species, suggestive of dieback.

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. This is also represented in the number of deeper pools at control sites in both Area 3A and Area 3B. For Area



3A, three tributaries (SC10C, SC10(10) and WC17) had triggered a TARP and for Area 3B four tributaries: WC15, DC(1), DC13 and WC21 had triggered a TARP.

For more information on terrestrial ecology results refer to the Longwall 16 EoP Report on the IMC website:

<https://www.south32.net/what-we-do/places-we-work/illawarra-metallurgical-coal/documents>.

6.14.1.8 Cultural Heritage

The assessment of cultural heritage and archaeological sites potentially impacted by Longwall 16 was conducted by Niche Environment and Heritage Pty Ltd (Niche). Three out of six Aboriginal archaeological sites were inspected as part of the assessment. Three were not accessed for safety reasons and will be assessed as part of the Longwall 17 assessment. No new impacts were recorded at the inspected sites. Site DM 21 experienced observable impacts from previous subsidence movements related to extraction of Longwall 15, however no further impacts to DM 21 were observed as a result of the extraction of Longwall 16. There were no European heritage sites identified as being potentially affected by the extraction of Longwall 16.

For more information refer to the Longwall 16 EoP Report on the IMC website: <https://www.south32.net/what-we-do/places-we-work/illawarra-metallurgical-coal/documents>.

6.14.1.9 Summary of Impacts

The observed impacts were generally less than 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 8. For further detail on impacts associated with Longwall 16, refer to the Longwall 16 EoP Report. The locations of the impacts identified in the reporting period are shown in Figure 24.

6.14.2 Cordeaux

In consideration of 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.

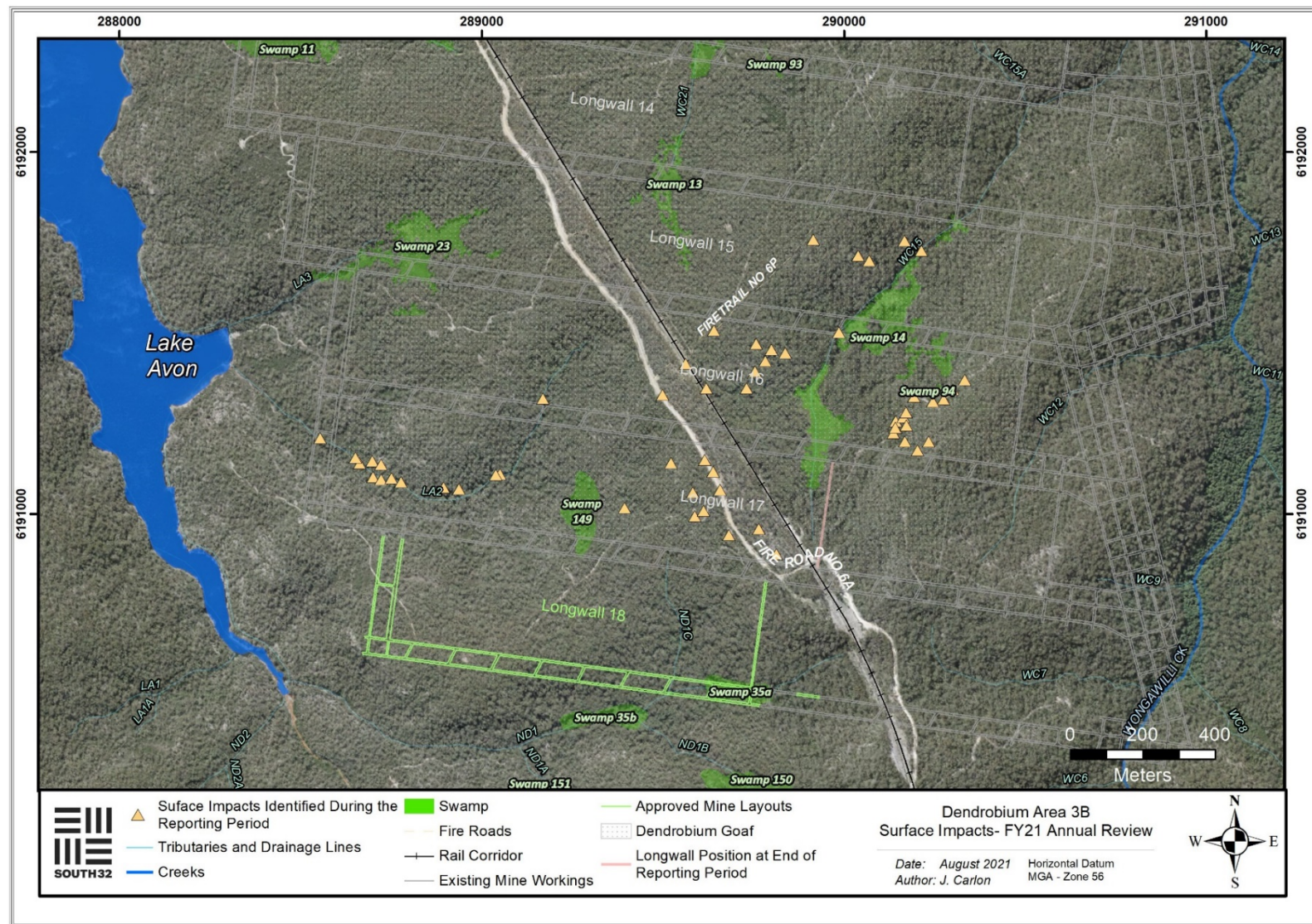


Figure 24: Dendrobium Mine subsidence impacts observed during the reporting period



6.15 Hydrocarbon Contamination

6.15.1 Dendrobium Mine

Hydrocarbon bunded areas utilised during the reporting period were located as follows:

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

Bunds are in place for 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, one of the permanent bunded storage areas was removed due to the planned Upper Portal Road upgrades. The OSS facility and portable bunds have been utilised during this transitional period with alternative storage solutions currently being investigated.

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

6.15.2 Cordeaux Colliery

IMC has implemented and actioned a RAP following a transformer oil spill as a result of vandalism at the Corrimall No 3 Ventilation Shaft during a previous reporting period. See more detail in Section 6.4.3.

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

There is one radiation gauge located at the KVCLF site. The gauge is not currently being utilised and may be decommissioned in FY22. It is licenced and maintained as per the legal requirements. The gauge is housed in an appropriate container and inspected and tested in accordance with legislative requirements.

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 containers, one for diesel and one for hydraulic oil (~16100 L). These materials are delivered to site by tanker. These are stored 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 one bulk storage tank (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. In 2019 the *Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019* was released. The Regulation aims to minimise the risk to human health and the environment by requiring best practice design, installation, maintenance, and monitoring of UPSS in NSW. To comply with the new Regulation, 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 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.

6.16.3 DCP

Hazardous waste management at DCP 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.

There are ten gauges located in the DCP 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

During the reporting period, the underground mine workings were ventilated by drawing fresh air into the mine (intake air) via the Dendrobium Mine Portal Tunnel, Kemira Valley Portal Tunnel, and air intake Shafts No.1 and 2. The ventilation air drawn through the mine was extracted via the No.3 Shaft Main Mine Ventilation Fans.



Three mine ventilation fans are installed at the No.3 Shaft site with two fans operating at any one time. Mine ventilation air was drawn through the mine during the reporting period at an average rate of 116 m³/s with the discharge air (mine vent air) having an average concentration of methane (CH₄) of 0.11% and an average concentration of carbon dioxide (CO₂) of 0.15%.

A summary of Scope 1 and Scope 2 greenhouse gas (GHG) emissions during the reporting period for Dendrobium and Cordeaux Colliery is contained in Table 23 and Figure 25. GHG emissions between FY15 and FY21 are shown in Figure 26. Cordeaux Colliery emissions are approximately 2% of the total emissions.

Table 23: FY21 GHG Emissions – Dendrobium Mine and Cordeaux Colliery

Pollutant	Units	FY21 Total
Scope 1 emissions	kt CO _{2e}	240.99
Scope 2 emissions	kt CO _{2e}	60.65

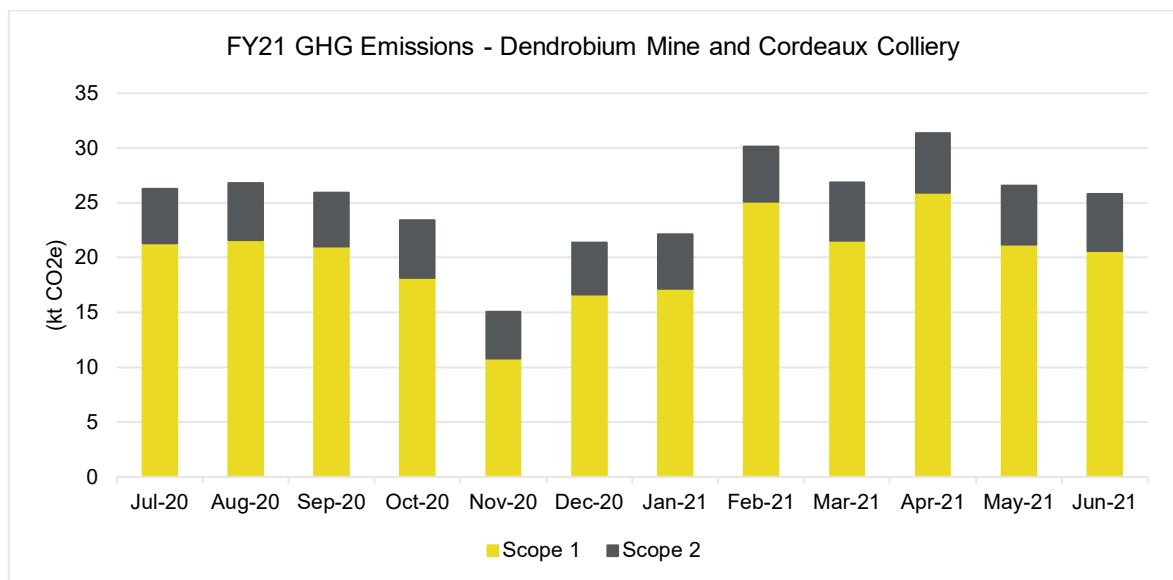


Figure 25: Dendrobium Mine and Cordeaux Colliery GHG emissions for FY21

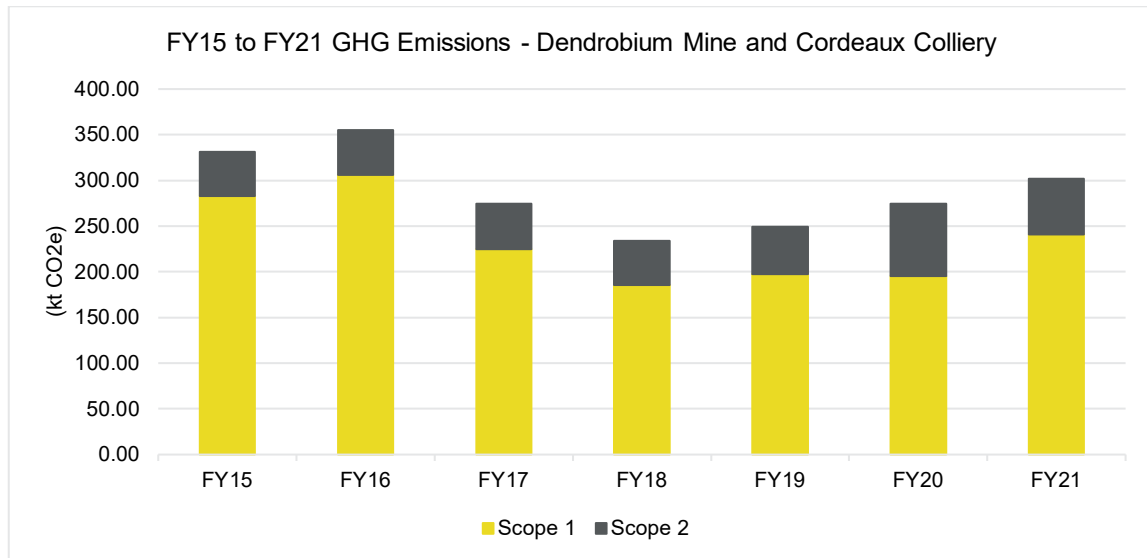


Figure 26: Dendrobium Mine and Cordeaux Colliery GHG emissions for FY15 to FY21

6.17.2 Sand Stimulation Trial

Exploration in parts of Area 3C has identified high levels of gas. A sand stimulation trial, which opens joints and cleats in the coal seam and creates paths for the migration of gas from the seam, occurred in FY20 to remove gas from the coal seam.

The sand stimulation trial was ongoing in FY21 with the aim of enabling safe mining operations in Area 3C, subject to all necessary approvals being in place. The trial is incidental to the extraction of coal and permitted under the Consent. During the reporting period, gas management in the current mining domain (Area 3B) did not change, and gas liberated during mining currently continues to be extracted via the ventilation system.

The sand stimulation trial is now complete with the results being inconclusive. In seam drilling is currently focusing on collecting cores to determine gas content/constituents in Area 3C. The current plan is to implement traditional gas drainage drilling.

6.17.3 Decarbonisation Strategies

South32 has set greenhouse gas emission targets, with a short-term target of maintaining Scope 1 emissions at FY15 levels through to the end of FY21, and a medium-term emissions reduction target of 50% by 2035 on a FY21 baseline (operational emissions only). The plan is then to progressively reduce emissions, such that the business is carbon neutral by 2050. The goal of carbon neutrality 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 carbon neutrality 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 to carbon neutrality began. In FY21, 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.

Study work relating to the introduction of VAM abatement technology also commenced during FY20. Delays to the study occurred through FY21 due to COVID19 impacts, in particular the pilot plant testing.



Consequently the study wasn't able to progress as planned, however attention still remains on four key areas related to IMC's decarbonisation roadmap. These involve:

1. Recommissioning the MEGTEC Vocsidizer at Appin North (the former 'WestVAMP' facility) – this will involve reconfiguration of the existing equipment, or moving the existing equipment to a different shaft within IMC.
2. Scaling up the CSIRO VAMMIT technology (successfully operated at a pilot plant scale) into a full scale VAMMIT demonstration plant at IMC.
3. Consideration of the feasibility to implement commercial scale Regenerative Thermal Oxidisers (including the aforementioned VAMMIT units) on new and existing IMC shafts.
4. Engagement with prominent tertiary institutes and the broader industry regarding development of future VAM technology or other decarbonisation opportunities.

Items 1 and 2 above are proposed to be the subject of a pending expression of interest through Coal Innovation NSW, which would see funding provided by the NSW government and potentially South32, through the Innovate32 program.

Pending success of these applications, work could commence in January 2022 on these initiatives. Items 3 and 4 are longer term objectives, and will follow on from the outcomes of items 1 and 2.

A concept study into alternative decarbonisation opportunities has also commenced.

6.17.4 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.

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
	<u>Dendrobium</u>
	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.
Safety on site	Workers are required to undertake a site 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 area they are required to contact the Illawarra Access Controller (IAC) at the turnstile or their site contact to gain access to the site. From this point the visitor is accompanied by their site contact. Once 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.

Cordeaux

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.

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.

Site security upgrades completed in FY20 included boom gates and turnstiles which further restrict site access to authorised personnel only.

Dendrobium

Road Safety

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 all employees and contractors during the site induction and copies are periodically distributed to major suppliers and transport companies. Compliance with the Code of Conduct is strictly enforced.

Cordeaux

Lane alignment and roadway markings have been upgraded at the Cordeaux Colliery entrance on Picton Road to provide for safer traffic movements when entering and exiting the site.

Dendrobium

Rail Safety

Rail facilities are fenced, 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 announcements, 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 Metropolitan 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.
	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 Charcoal Place, 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 and volumes are listed in Table 26. The volume of waste recycled and disposed of, and the recycling efficiency for Dendrobium Pit Top is listed in Table 27.

Table 26: Waste Streams and Total Volumes

Waste Stream	Treatment / Disposal	Volume (tonnes)
Timber	Recycled off site	60.7
Cardboard and paper	Recycled off site	5.7
Steel and scrap metal	Recycled off site	195.4
Commingle	Recycled off site	3.8
General waste (ResourceCo)	Recycled off site	594.3
Particulate (diesel) filters	Off-site treatment and disposal	358.6
General waste	Landfill	101.5



Electronic waste	Recycled off site	0.2 ⁹
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Table 27: Recycling Efficiency for Reporting Period

Total Recycled (tonnes)	Total Removed from Site (tonnes)	% Recycled
859.9	1,319.9	65%

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 processed engineered fuels, Low Calorific Value (CV) and High CV, comply with the requirement of the Clean Energy Regulator under the Emissions Reduction Fund.

Of the 1,319.9 tonnes of waste generated on site in FY21, 695.8 tonnes were general waste. From this 695.8 tonnes of general waste, 594.3 tonnes were diverted for recycling at ResourceCo and the remaining 101.5 tonnes was disposed as landfill. Redirecting this general waste to the recycling facility is an alternative end-of-life treatment and final disposal of products opportunity. Approximately 65% total waste was recycled off-site during the reporting period. Waste has increased over the reporting period with a rise in landfill due to additional machines on-site (see Figure 27).

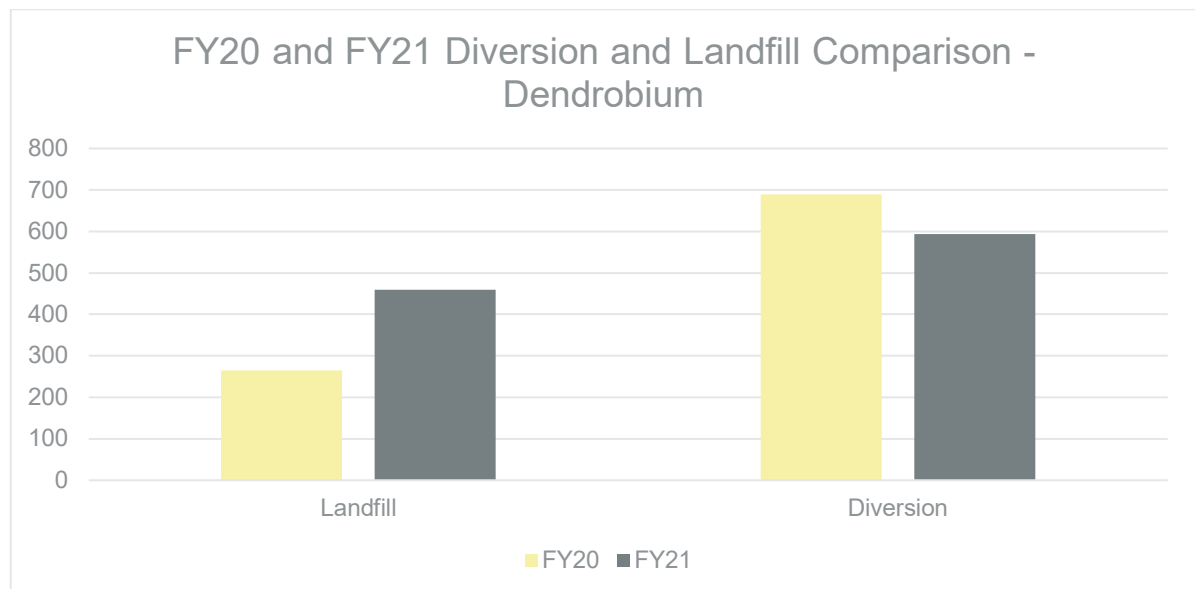


Figure 27: Recycled and landfill waste streams for FY20 and FY21

⁹ 68kg was disposed at the Regional Operations Centre (ROC) via the University of Wollongong (UoW) e-waste bin. 136kg was disposed via Certified Environmental Disposal services provided by DXC.



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)
Oil	35
Oily Water/Sludge/Grease	45.3
Hydraulic Oil	46.5

6.19.1.4 Coal Wash Management

Coal wash is a by-product of processing ROM coal. During FY21, a total of 0.995 Mt of coal wash was emplaced at the Appin Mine CWEA. This was comprised of 0.74 Mt of coal wash from the WCCPP and 0.26 Mt from the DCCP.

The Stage 3 CWEA provides 33.5 Mt of coal wash emplacement with an expected emplacement life of approximately five years as of June 2021 (based on projected coal wash volumes). The Stage 4 CWEA will provide an additional 26.0 Mt of coal wash emplacement with an expected life to 2048.

Table 29 outlines the 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	33.5	Current
4	26.0	Not Yet Commenced

During the reporting period, IMC diverted approximately 0.858 Mt of coal wash from the DCCP for beneficial uses (i.e. as an engineered fill in housing developments and Roads and Maritime Services (RMS) road infrastructure projects, for the development of arterial and agricultural roads, and under an Operational Purpose Deduction (OPD) to improve a stockpile design at WCCPP), with nearly 6 Mt diverted since 2009. IMC has a long-term agreement with Lend Lease at Calderwood, Western Earth Moving at Tullimbar, and with the RMS on the Albion Park Bypass project, that should continue to see a large volume of coal wash diverted for beneficial uses in FY21 and beyond. IMC has also developed a pipeline of major projects that will require engineered fill for the next five years.

The IMC Coal Wash Road Base Project was finalised in FY21, which utilises coal wash with other recycled materials such as fly ash to produce a material suitable for a variety of applications. IMC aligned with three universities (University of Wollongong, University of Sydney and University of Newcastle) and two other industry partners (RMS and Douglas Partners) and was successful in securing an Australian Research Council (ARC) Linkage Project grant of \$590k to conduct research into the long-term performance of this material in roads and railways. Although the three-year project was finalised by the end of 2020, IMC are still looking to utilise coal wash and fly ash as an engineering fill for a proposed haul road reconstruction at Appin North.



Considerable previous work has been 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.

IMC have also developed a new coal product (Berrima) destined for Vietnam that is a blend of high ash coal product constituted of coal wash that has been subjected to additional processing and Illawarra High Ash Coking Coal which is commonly referred to as Illawarra Energy Coal. 493 kT of the Berrima product were sold in FY21.

There is potential for the development of a continuing new market for the new blended product of coal wash and Illawarra Energy Coal.

6.19.2 Ventilation Shafts 1, 2 and 3

During the reporting period, any waste generated at the Ventilation Shaft 2/3 site was taken off site and disposed of through the Dendrobium Mine processes. No activities are undertaken at Ventilation Shaft 1 and therefore there was no waste generated.

6.19.3 DCP

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

6.19.4 Cordeaux Colliery

6.19.4.1 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. Periodically, Cleanaway Waste Management Services attend site to remove general waste from the bins. The amount of waste from Cordeaux Colliery is shown in Table 30. Waste such as cardboard, paper and batteries are set aside for recycling or reuse. As the site has been on care and maintenance since 2001, the volume of waste generated has been consistent over this period.

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

Waste Stream	Treatment / Disposal	Volume (tonnes)
Commingle	Recycled off site	8.8
General/Store Waste	Landfill	24.6
Oily Water/Sludge	Treated off site	8.5
Timber	Recycled off site	0
Steel	Recycled off site	0

6.19.4.2 Sewage Treatment / Disposal

All sewage effluent is transported off site by a licenced contractor for treatment and disposal.



6.19.4.3 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.

7. WATER MANAGEMENT

7.1 Groundwater

7.1.1 *Dendrobium Mine*

The Dendrobium groundwater monitoring program was undertaken during the reporting period as defined in the approved Water Management Plan and Groundwater Monitoring Plan under the SMP. 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 (DS NSW), DPIE, WaterNSW, and the Department of Resources and Energy (now Resources Regulator).

Monthly 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 DS NSW, WaterNSW and DPIE 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 NSW Notification Area Management Plan”. During most of the reporting period, the mine operated at ‘Normal’ in the Principal Response Flowchart (Figure 28) while entering ‘Level 1 Alarm’ in late June 2021. The Level 1 TARP is related to pumping down water build-up of stored water in Dendrobium Area 1 Mains.

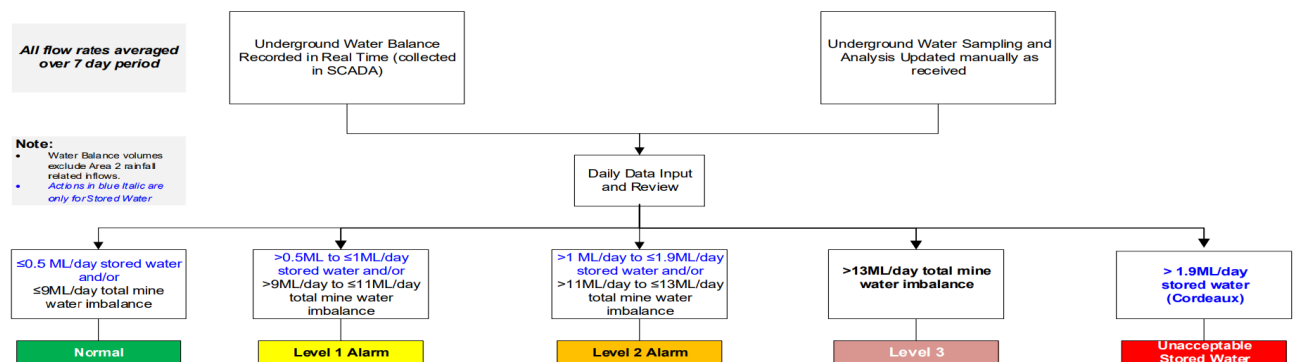


Figure 28: Cordeaux Principal Response Flowchart in “Avon and Cordeaux Reservoirs DS NSW Notification Area Management Plan”.

A summary of the mine water balance for the reporting period is provided in Figure 29.

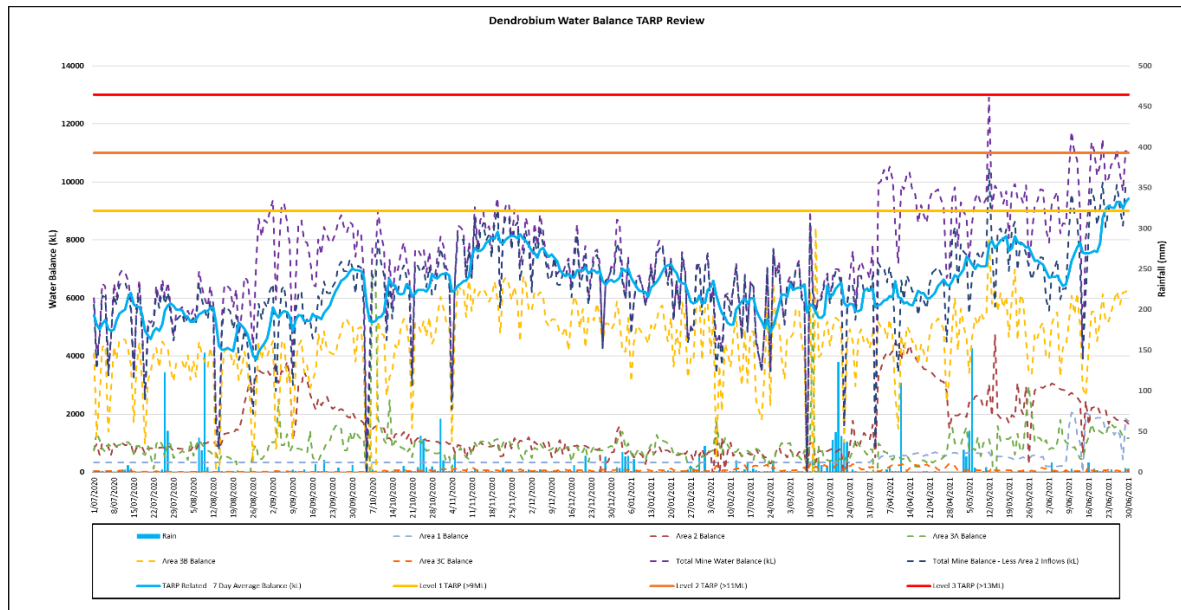


Figure 29: Dendrobium Mine Water Balance

The groundwater reporting to the mine workings during normal conditions is characteristic of coal measure 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 as a result of 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	7,521	6,554	kL/day
Maximum	12,914	9,420	kL/day
Minimum	-325 ¹⁰	3,880	kL/day
Total	2,970,907	2,588,987	kL

Mining of Longwall 17 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 decreases with height above the seam. Incremental drawdown in the Scarborough, Bulgo and Hawkesbury Sandstones is also apparent.

Between 2015 and 2020, a series of monitoring bores were installed along the barrier zone between Lake Avon reservoir and Area 3B. Groundwater monitoring in the Lake Avon barrier zone shows

¹⁰ Total Water Balance was negative on 9/03/2021 due to a power outage. A few readings for "Water In" were received but no "Water Out" values were available on that day.



widespread depressurisation of all strata in response to mining in Area 3B and a general hydraulic gradient towards Area 3B, consistent with numerical model predictions. Groundwater levels at the base of the Hawkesbury Sandstone were likely near or just above the lake level prior to mining and have since declined to be below the lake level. There is evidence for recovery in groundwater pressures in the Colo Vale Sandstone.

The HGEO local seepage model was updated to reflect the observations at the post-mining bore hole S24361E at location AD8 and S2379B at AD5. Each of the ten model layers were updated by interpolating the permeability at corresponding depths in each test bore.

The current model update assesses the seepage rate from the shoreline adjacent to Longwall 12 to Longwall 17, utilising data from holes S2436E and S2479B which are adjacent to Longwall 16 and 17. The average seepage rate for the 1.93 km of shoreline adjacent to Longwalls 12-17 is 0.36 ML/day/km.

When extrapolated over the length of shoreline adjacent to Longwalls 12-18 (2.5km), the total seepage rate is 0.89 ML/day. This estimate is broadly consistent with previous estimates for seepage adjacent to Longwalls 12-18.

The estimated seepage rate is most sensitive to permeability in the lower strata close to the longwalls, since the upper strata become desaturated when the model is run to a steady state (groundwater gradient towards the mine). The current data indicates that the post-mining permeability in the barrier zone adjacent to Lake Avon is highly heterogeneous, both within and between sites. The most recent regional numerical model results predict seepage loss from Lake Avon to Area 3B of between 0.09 and 0.45 ML/day, with a mean estimate of 0.18 ML/day (Watershed Hydrogeo, 2020). The estimate is somewhat higher than the range predicted by the regional model, but within the same order of magnitude. The higher estimate presented here reflects the conservative assumptions of the local scale model, such as uniform steady state flow towards the mine and complete desaturation above the longwall goaf. The modelled flux is within the 1ML/day tolerable limit set by DS NSW.

7.1.2 Cordeaux Colliery

A total of 3.788 ML was pumped from the surface to Cordeaux underground workings during the reporting period. This is an increase from the previous reporting period (0.701 ML). The increase is in line with an increase in total rainfall recorded at the site in FY21, compared to the previous 12 month period. There was also a decrease in the volume of water taken from the Mine Water Holding Lagoons for Exploration operations during the reporting period, compared to the previous 12 months.

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 was 12.1 ML, which is a 19% decrease compared to the previous 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 566 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 runoff streams include:

- Clean water – This system collects runoff originating from the surrounding undisturbed land on the upstream (western) side of the site. This water is piped via sealed drains through the site into American Creek.
- Oily Water – This system captures potentially contaminated water runoff from the workshop area and diesel fuel dispensing area. This is diverted into the oily water separator and then into the grey water treatment plant. Treated water is then pumped into the old Nebo Mine workings.
- Site Runoff – This system captures general site runoff from site roads and the car park. This runoff is directed into the Pit Top sediment pond via a series of drains and pits that are cleaned out on a regular basis using an industrial vacuum truck. Settled water is pumped from the sediment pond into the grey water treatment plant based on pond level. The treated water is then pumped into the old Nebo Mine Workings.

At the Kemira Valley site, surface water is separated into two streams, which include:

- Clean Water – This system captures clean runoff originating from the upstream side of the site. The runoff is diverted around the western side of the site and through a culvert beneath the rail line and sediment pond and into Brandy and Water Creek.
- Site Runoff – This system captures all site runoff from the roads and stockpile area. The runoff is treated and reused in the site dust suppression system and/or the firefighting system. If there is excess water in the sediment ponds, water may be disposed via the mine water discharge pipeline into Allans Creek via LDP 5.

The Pit Top Sediment Pond and Kemira Valley Sediment Ponds are managed in accordance with the Water Management Plan.

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



7.2.1.4 **Rainfall**

Dendrobium rainfall recorded during the reporting period was 1544 mm, an increase when compared to the previous reporting period in which 1048 mm rainfall was recorded. Annual rainfall for weather station DA3B located within the Dendrobium Mining Area is displayed in Figure 30. Rainfall data for FY11 to FY21 is displayed in Figure 31.

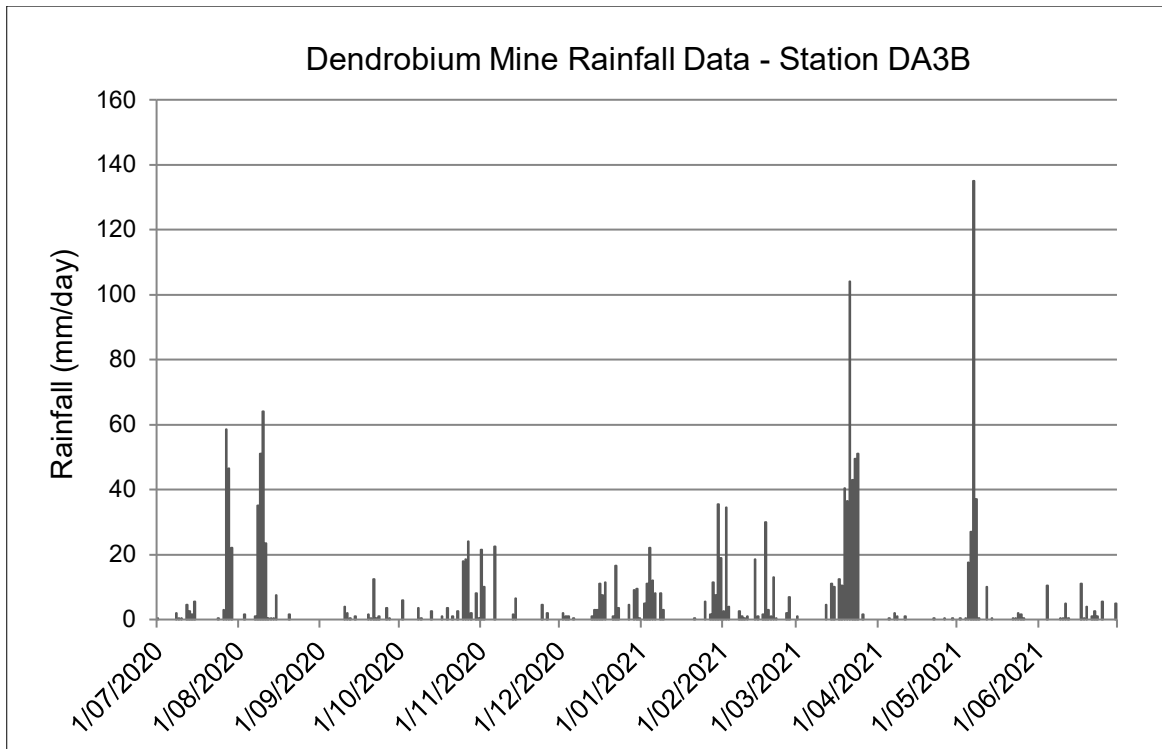


Figure 30: Dendrobium daily rainfall data for FY21

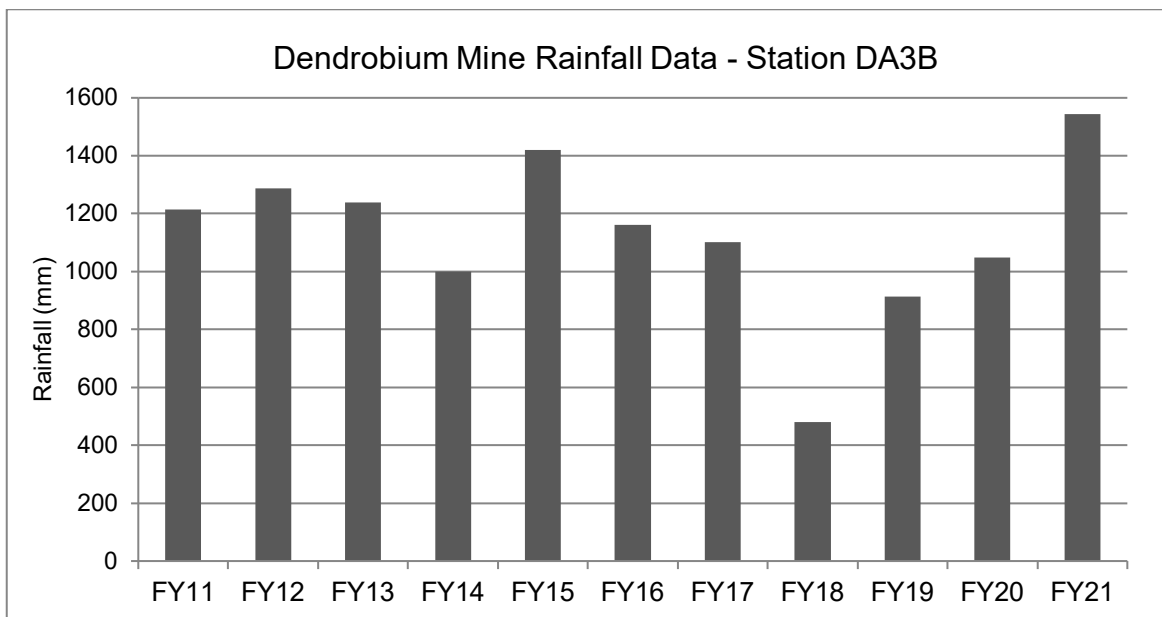


Figure 31: Annual rainfall data for Dendrobium - FY11 to FY21



7.2.2 Cordeaux Colliery

7.2.2.1 Water Supply and Use

Potable water use at Cordeaux Colliery is generally for personal consumption, showering 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 0.267 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 a dirty water holding 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 dirty water lagoon then transferred by pump to the upper level mine water holding lagoons for settlement. The water is then transferred to underground mine workings 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 pumping 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 Cordeaux Colliery Pit Top. The Cordeaux site received a total of 1561.5 mm of rainfall during the reporting period, which was an increase from the previous reporting period (1069.5 mm). Annual rainfall for the rain gauge located at Cordeaux Colliery is displayed in Figure 32. Figure 33 shows the total recorded rainfall for past reporting periods.

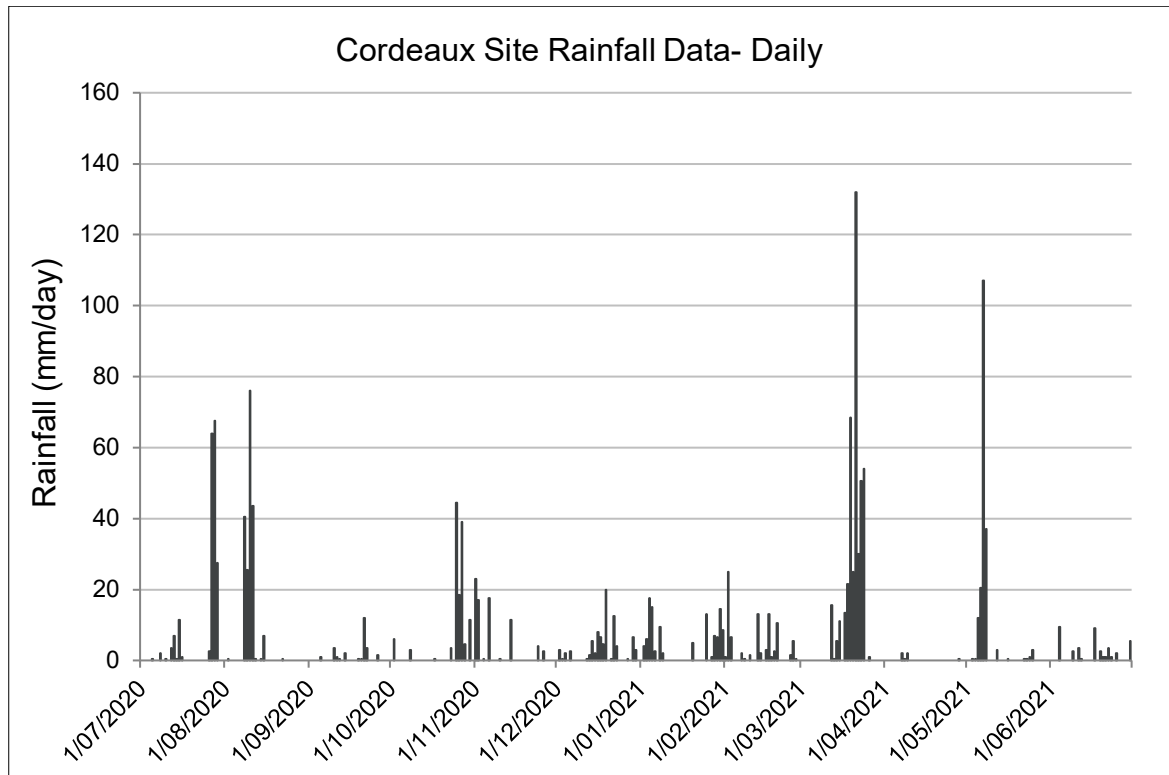


Figure 32: Cordeaux FY21 daily rainfall - site rain gauge

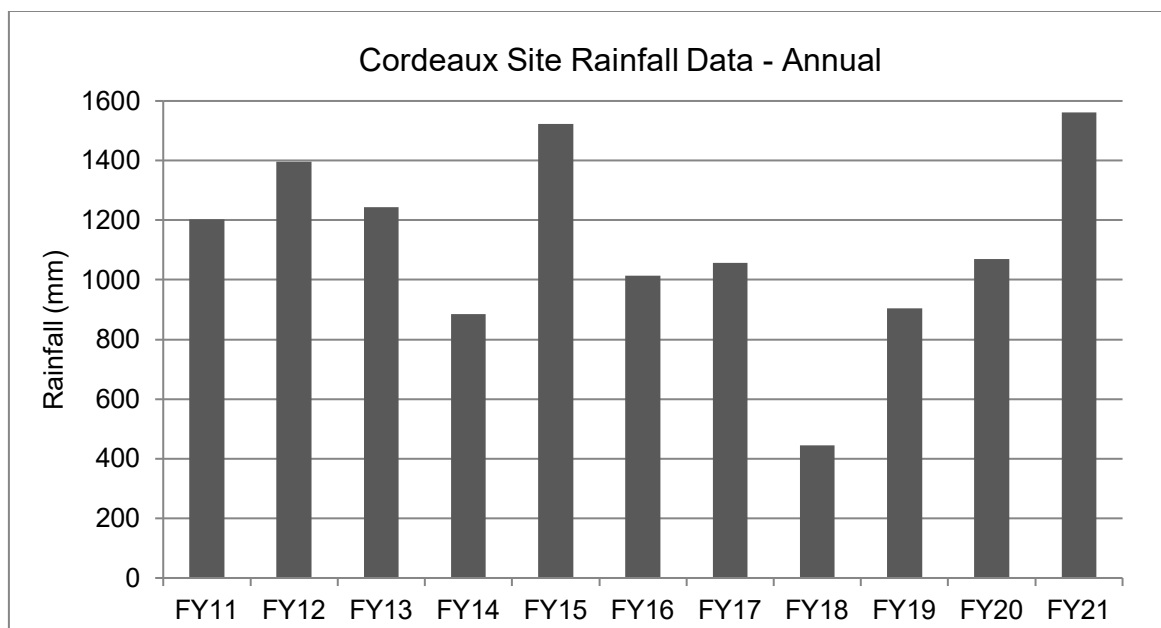


Figure 33: Cordeaux annual rainfall - FY11 to FY21

7.2.3 Ventilation Shafts 1, 2 and 3

No water usage occurs on the Ventilation Shaft 1 or Ventilation Shaft 2/3 sites.

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. Rehabilitation of disturbed areas has been undertaken.



7.2.4 DCPP

Industrial water is supplied by Sydney Water mains via the BlueScope Steel water network.

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.

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 FY21 is shown in Table 32.

Note: 1 unit = 1 ML.

Table 32: Water Take – Dendrobium Mine			
Water Licence 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 South Groundwater Source Nepean Management Zone 2	3962	2385
10AL123125	Greater Metropolitan Region Groundwater Sources Sydney Basin Nepean Groundwater Source Nepean Management Zone 2	3653	0 ¹¹
10AL123124	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.

¹¹ New licences for DND - 10AL123125 and 10AL123124



8. REHABILITATION

8.1 Rehabilitation for the Reporting Period

8.1.1 Dendrobium Mine

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. A copy of the latest security cost estimate is provided as Appendix B¹². A rehabilitation summary associated with the Dendrobium operation is provided in Table 33.

Due to planned continued operations, there is currently no plan to rehabilitate current infrastructure relating to Dendrobium Mine or Cordeaux Colliery operations.

Table 33: Dendrobium Mine and Cordeaux Colliery Rehabilitation Summary¹³					
Location	Area Affected/Rehabilitation (ha)				Reason for Variation
	To date	FY20	FY21	FY22¹⁴	
A: Total Mine Footprint	18,816	18,816	18,816	18,816	N/A
B: Total Active Disturbance	47.05	29.46	47.05	47.05	Note ¹⁵
C: Land being prepared for rehabilitation	0	0	0	0	N/A
D: Land under active rehabilitation	0	0	0	0	N/A
E: Completed rehabilitated area (Areas previously completed, currently include Corrimal No. 1 and 2 Shafts, ¹⁶ Ventilation Shaft 2/3, ¹⁷ Dendrobium Subsidence Event, ¹⁸ Bradford Breaker ¹⁹ , and Stage 2 Pathway ²⁰), ²¹	8.09	7.97	8.09	8.10 ²²	Inclusion of additional sites ²³

¹² The RCE is Commercial in Confidence and is only provided to the Resources Regulator.

¹³ Does not include exploration.

¹⁴ Estimate.

¹⁵ Increase as a result of database review. Fourteen additional sites included in the disturbance calculation in FY21. The areas included in the FY21 calculation are not new disturbance sites and are areas that were not previously counted in this calculation. The areas include: Cordeaux – Wilton Irrigation Buried Pipeline, Kemira Valley Rail Line, O'Brien's Drift - Motor House Building and access road, O'Briens Gap Pumphouse, O'Briens Drift Upper HV substation and Tank, O'Briens Drift Switchyard, O'Briens Water Pipeline, O'Briens Drift Historic Area, Water Tank and Truck Unloading Sheds and access road. There was also a minor decrease from the disturbance database as some sites were moved to the rehabilitation dataset.

¹⁶ Corrimal No. 1 and 2 Shaft sites have been decommissioned.

¹⁷ Vent Shaft 2/3 site is currently active. Temporary rehabilitation has been successfully established at the site.

¹⁸ Rehabilitation works were completed in response to identified impacts in November 2013.

¹⁹ Rehabilitation has been undertaken at the Bradford Breaker site however some additional works may be required.

²⁰ Dendrobium Coal Pty Ltd no longer owns land between Stones Road and Benjamin Road, Mount Kembla. As part of Stage 2 of the pathway project this land was sold, subsequent to a 4 Lot Subdivision or transferred to neighbours through boundary adjustments.

²¹ There were no new areas rehabilitated in FY21.

²² Predicted 0.005 ha increase from O'Briens Gap Pumphouse rehabilitation works in FY22.

²³ Inclusion of Summit Park Switchyard, O'Brien's Gap Switchyard, and Greenhills Substation.



The agreed post mining land use in the approved Mining Operations Plan (MOP) is infrastructure and native bushland. Rehabilitation will be undertaken at mine closure following decommissioning of site infrastructure.

No existing on site buildings were renovated or removed during the reporting period.

Legacy sites rehabilitated in FY20 were either not within the CCL 768 boundary or had a very small footprint. Descriptions are as follows:

- Summit Park Switchyard, Mt Keira – approximately 150 m² hand-seeded with grass seed.
- O'Brien's Gap Switchyard – approximately 300 m² hand-seeded with grass seed.
- O'Brien's Drift Switchyard – ground not yet rehabilitated and to be completed with future works.
- Greenhills Substation – approximately 2000 m² hydro-mulched.

8.1.1.1 Mining Operations Plan

No amendments to the MOP were submitted to the Resources Regulator in FY21.

As reported in FY19 and FY20, the MOP was planned to be converted to a Rehabilitation Management Plan (RMP) in FY20/21.

Legislative Rehabilitation Reforms under the *Mining Act 1992* were passed by the government on 2 July 2021²⁴. These reforms, through the *Mining Amendment (Standard Conditions of Mining Leases – Rehabilitation) Regulation 2021*, prescribe new mining lease conditions relating to rehabilitation and set clear, achievable and enforceable requirements for rehabilitation. A review of the MOP and its conversion to a RMP to meet the requirements of the Form and Way documents will be required. The revised RMP and associated documents are required to be submitted to the Resources Regulator by 2 July 2022.

The current MOP expires on 1 July 2022 and therefore an extension will need to be sought prior to expiry.

8.1.1.2 Further Development of the Final Rehabilitation Plan

A Landscape Management Plan has been developed to meet the requirements of the Consent. This document outlines rehabilitation and closure requirements for the sites associated with Dendrobium Mine. As referenced in the Landscape Management Plan, the Dendrobium Mine Conceptual Closure Plan has been developed in line with regulatory and internal South32 requirements. The Conceptual Closure Plan document outlines areas that are required to be progressively rehabilitated or rehabilitated at mine closure and includes a forward work plan. An internal review of the Dendrobium Mine Conceptual Closure Plan was completed in FY21 and a review of the Conceptual Closure Plan was undertaken by a consultant during FY21 and will be finalised in FY22. The outcomes of this review will be incorporated into the RMP.

Actions identified in the forward work plan include but are not limited to:

- liability review of historic infrastructure;
- post closure ground water study;
- materials balance assessment; and

²⁴ <https://www.resourcesregulator.nsw.gov.au/environment/rehabilitation/rehabilitation-and-compliance-reforms>



- site wide contamination assessment.

8.1.1.3 Legacy Sites and Rehabilitation Program

The Legacy Sites and Rehabilitation Program in the reporting period consisted of the following:

- Completion of reporting on projects undertaken during the FY20 reporting period.
- Removal of the O'Brien's Gap pumphouse (May 2021). This involved the demolition of the pumphouse building (see Plate 4). Contaminated soil identified post demolition is yet to be removed.
- Demolition and rehabilitation of a section of the 6-67 powerline circuit (Wongawilli to Wongawilli Air Shaft) that was within rural residential areas (August 2020). This involved the removal of poles and wires.
- Removal of the final power pole associated with the 6-10/15 circuit from BlueScope Steel to Figtree, located in the Australian Rail Track Corporation (ARTC) corridor (June 2021).



Plate 4: Demolition of O'Briens Gap Pump House

The following activities are planned for FY22:

- Removal of contaminated soil from the O'Briens Gap Pump House.
- Partial relinquishment of CCL 768 related to power line removals.
- Continued investigation into the removal of redundant infrastructure associated with O'Briens Drift, particularly at the KVCLF.
- Undertake final inspection of Summit Park Switchyard site.



8.1.1.4 Exploration

All of the exploration boreholes that were completed during the reporting period have been, or are in the process of being, rehabilitated. Some exploration rehabilitation across the Dendrobium domain (and in particular, across the Dendrobium Area 3C proposed mining domain) has been delayed during FY21. Delays were initially due to inadequate heavy machinery access (which has now been rectified) and subsequently by sustained periods of wet weather, making ground conditions unfavourable for rehabilitation. These sites will undergo rehabilitation over the coming warmer months as conditions improve. A comprehensive summary of the rehabilitation status of each exploration borehole and seismic line within the reporting period is captured in Appendix 9: Rehabilitation status of FY21 exploration activities in CCL 768. The total disturbed area for exploration boreholes and access tracks in FY21 is calculated at 30,295 m², with 8,520 m² rehabilitated and 21,775 m² currently unrehabilitated – noting that exploration is conducted under exploration title where present. Approvals holes have a disturbed area of 13,675 m² in FY21, and currently all tracks and sites must remain open for ongoing monitoring. 33,000 m² of seismic lines were also prepared for FY21 exploration, with rehabilitation of these lines commenced and currently in-progress.

CCL 768 occurs predominantly within WaterNSW catchment Special Areas, and as such rehabilitation practices are thoroughly prescribed to maintain the environment in which South32 IMC exploration activities take place. Site preparation and rehabilitation practices are guided by the stipulations in the Review of Environmental Factors (REF) document and associated activity approvals prepared for each exploration campaign, though as a rule include the following processes:

- Where possible, existing access tracks are used to reduce construction of new tracks.
- All drill sites are located where minimal earthworks/reshaping is required, with the appropriate storage of materials should re-shaping be required.
- Filling in of any sumps and re-contouring/stabilising the site (if required) to prevent erosion.
- Only approved sandstone materials are used as required for track and pad construction, and subsequently removed during site rehabilitation.
- Above-ground tanks are used for drill cuttings to minimise ground disturbance, and access to these is controlled with locked mesh and fencing.
- All waste is appropriately disposed of at a licenced offsite facility.
- Erosion is managed with established controls including sedimentation fencing, which is documented in the REF and borehole site preparation plan.
- Weed control is managed by vehicle washing facilities at Cordeaux Colliery.
- Site rehabilitation is commenced only when all materials and equipment associated with exploration activities have been removed from site.
- Once the hole is fully cemented, borehole casing is cut to at least 1.2m below the surface.
- The collar around the borehole is filled with stored soil, ensuring top soil is filled last.
- Where soil has been compacted, the soil is aerated.
- Topsoil, rocks and logs, set aside from the site during initial setup, are replaced to arrest water flow over disturbed ground and provide structure for emergent seedlings along the drill pad and track.
- Seismic line rehabilitation is treated much the same as for borehole access tracks. Additionally, all firing equipment is removed and shotholes are inspected for adequate stemming (and utilising approved drill cuttings or stemming material to infill if required).

A majority of these holes contain a piezometer string, used for groundwater monitoring. The piezometers are embedded in the sealing cement, attached to surface head-works or an in-ground pit with a data logger. In many cases, access to these sites is restricted to on foot only, by pulling logs and other vegetative material across the access tracks. This enables the majority of access



tracks and drill pads to commence revegetation. Once monitoring is no longer required, the sites will require final surface remediation. Final remediation for these boreholes consists of:

- the removal of any monitoring headwork/standpipes;
- the excavation of the surface casing to over one meter below ground level;
- termination of the piezometer wires in a gel termination kit;
- final cement plug in the top of the remaining casing if required and back filling of the excavation with original top soil; and
- promotion of revegetation for the areas disturbed during the borehole remediation process.

Some earlier exploration campaigns across CCL 768 have undergone a comprehensive investigation into the success of previous rehabilitation in WaterNSW areas. This involved both remote sensing techniques with follow up ground truthing of old exploration sites and site inspections of more recently rehabilitated exploration sites. Additional rehabilitation was then carried out where necessary. Both the ground truthing and site inspections were carried out jointly with WaterNSW officers. From these inspections, it was determined that all pre-survey 1 exploration does not require any further rehabilitation work. For surveys 1-8 and 10, some follow-up work in consultation with WaterNSW and Niche was required to encourage revegetation. This work was completed and close-out reports submitted to WaterNSW. However, WaterNSW have not yet signed off as landowners on the rehabilitation of these programs, due to the outstanding remediation required on boreholes with water monitoring equipment installed. Survey 11 and later surveys have not as yet had a comprehensive rehabilitation investigation with WaterNSW.

To ensure more recent rehabilitation practices establish successfully, most of the exploration conducted during the FY21 reporting period is subject to a WaterNSW activity approval condition regarding the preparation of an ecological restoration plan (ERP). The plan must follow the guidelines of the National Standards for the Practice of Ecological Restoration in Australia. South32 IMC has engaged Niche to prepare these plans, and to collect the baseline and subsequent annual site inspection data over the five year stipulated monitoring period. Niche also prepare the final ERP reports per required program. A snapshot of the tracking utilised to meet the ERP guidelines is included as Figure 34. It demonstrates an example of a campaign whereby rehabilitation monitoring is underway ("Sandy Creek", conducted prior to this reporting period), and compares it to "Survey 16" (one of the exploration activities conducted in the current reporting period) that is flagged for ERP monitoring in 2021, noting that baseline plots cannot be conducted until rehabilitation has occurred. South32 IMC are presently making arrangements with Niche to conduct these inspections in FY22.



Exploration program	Site	Rehabilitation dates (MM/YYYY)	Monitoring equipment	Remediation (MM/YYYY)	Notes (e.g. leaving open for enviro team, close site not tracks etc. once monitoring equipment is removed, then no further treatment.	2019	2020	2021	2022	2023	2024
Sandy Creek	E	2012	Large monitoring box Small PVC pipe monitoring			Baseline BAM plot conducted	DRG Checklist undertaken	DRG Checklist required			BAM plot required (5 year monitoring plot)
Sandy Creek	F	2012				Baseline BAM plot conducted	DRG Checklist undertaken	DRG Checklist required			BAM plot required (5 year monitoring plot)
Sandy Creek	G	2012	None	2020		Baseline BAM plot conducted	DRG Checklist undertaken				BAM plot required (5 year monitoring plot)
Sandy Creek	H	2012	Yellow standpipe			Baseline BAM plot conducted	DRG Checklist undertaken	DRG Checklist required			BAM plot required (5 year monitoring plot)
Sandy Creek	I	2012	None	2020		Baseline BAM plot conducted	DRG Checklist undertaken				BAM plot required (5 year monitoring plot)
Sandy Creek	J	2012	Small PVC pipe monitoring			Baseline BAM plot conducted	DRG Checklist undertaken	DRG Checklist required			BAM plot required (5 year monitoring plot)
Sandy Creek	K	2012	None	2020		Baseline BAM plot conducted	DRG Checklist undertaken				BAM plot required (5 year monitoring plot)
Sandy Creek	L	2012	Large monitoring box Small PVC pipe monitoring			Baseline BAM plot conducted	DRG Checklist undertaken	DRG Checklist required			BAM plot required (5 year monitoring plot)
Sandy Creek	N	2012				Baseline BAM plot conducted	DRG Checklist undertaken	DRG Checklist required			BAM plot required (5 year monitoring plot)
Sandy Creek	SC1	05/2019	Large monitoring box			Baseline BAM plot conducted	DRG Checklist undertaken	DRG Checklist required			BAM plot required (5 year monitoring plot)
Sandy Creek	SC2	05/2019	Large monitoring box		once monitoring equipment is removed, then no further treatment.	Baseline BAM plot conducted	DRG Checklist undertaken	DRG Checklist required			BAM plot required (5 year monitoring plot)
Sandy Creek	SC3	05/2019	None	2020		Baseline BAM plot conducted	DRG Checklist undertaken				BAM plot required (5 year monitoring plot)
Sandy Creek	SC4	05/2019	Large monitoring box			Baseline BAM plot conducted	DRG Checklist undertaken	DRG Checklist required			BAM plot required (5 year monitoring plot)
Sandy Creek	X	2012	None	2020		Baseline BAM plot conducted	DRG Checklist undertaken				BAM plot required (5 year monitoring plot)
Survey 16	LD1							Baseline BAM plot and DRG Checklist			
Survey 16	S17-05							Baseline BAM plot and DRG Checklist			
Survey 16	LD3							Baseline BAM plot and DRG Checklist			
Survey 16	STIS 1							Baseline BAM plot and DRG Checklist			
Survey 16	S17-14							Baseline BAM plot and DRG Checklist			
Survey 16	STIS 2							Baseline BAM plot and DRG Checklist			
Survey 16	S17-13							Baseline BAM plot and DRG Checklist			
Survey 16	S17-12							Baseline BAM plot and DRG Checklist			

Figure 34: Example of exploration rehabilitation monitoring and tracking



8.1.1.5 Subsidence

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

The WC21 and Donalds Castle Creek Rehabilitation Plan has been updated to include a trial rehabilitation program targeted at two pools on WC21. The plan has been approved by the Department following extensive consultation with various agencies. The plan contains a timeline for implementation of activities.

8.1.1.6 Rehabilitation monitoring

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

Monitoring at legacy sites includes periodic inspections to review vegetation establishment. Issues at O'Briens Gap have been identified with dirt bike activity in the area. Grass has established at the Summit Park Switchyard site and a final inspection report will be submitted in FY22.

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.

Rehabilitation works have been previously undertaken and completed at Corrimal No. 1 and 2 Shaft sites, Cataract Weir Pump Facility, Cordeaux Re-injection Borehole, and Wilton Spray Irrigation site. These have been decommissioned and rehabilitated to the relevant guidelines.

The electrical substation on the Corrimal No. 3 site remains active. See Section 6.4.3 for more information on the Corrimal No 3 Shaft rehabilitation.

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.



9. COMMUNITY

9.1 Community Complaints

9.1.1 *Dendrobium Mine*

IMC operates a 24hr 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 operations. The call line number and email address have been advertised throughout the reporting period in all correspondence distributed to the community.

A complaint received by IMC in whatever format will be investigated and resolved by the Community Team. The appropriate team member will investigate the complaint and seek assistance from the relevant site or operational personnel. Where required, additional details will be sought from the complainant where there is insufficient information for investigation.

Community complaints must be responded to within 24 hours of the complaint being received²⁵. Some complaints require ongoing investigation and remedial action to address the nature of the complaint.

Complaint information is provided publicly on the South32 website, and to the DCCC, IMC management, and government agencies on a regular basis.

A total of 170 community complaints were received during the reporting period (compared to 131 received in FY20). Complaints made, and the resolutions to these complaints, are reported each month on the South32 website. As shown in Figure 35, the majority of complaints made during the reporting period were from one resident. Resident 2 is shown in the chart for comparison purposes only. Resident 1 was moved to a grievance process in June 2021 and complaints and outcomes under the grievance will be reported separately in future.

A summary of all complaints recorded in FY21 is provided in Appendix 5: Community Complaints Report - FY21. Figure 36 displays the complaints for the reporting period by issue. Figure 37 shows the complaints received since FY17. A new reporting category of “environment” was established in FY21. This covers issues such as litter in or damage to bushland, or issues associated with the uncontrolled release of water from the Kemira Valley sediment pond in August 2020.

Investigations into rail related noise are ongoing to identify ways further reduce noise emissions from the KVRL and Pit Top to minimise the likelihood of community complaints.

²⁵ This timeframe relates to contact with the complainant, not resolution/investigation of the matter.

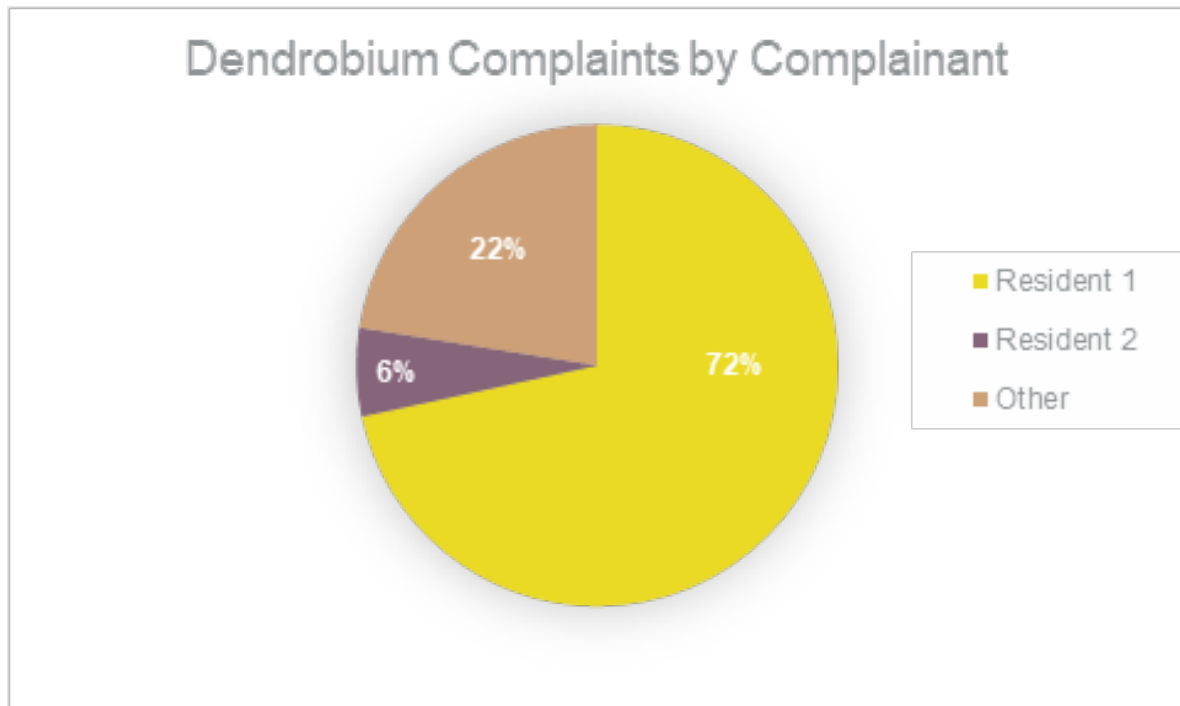


Figure 35: Contributors of complaints received FY21

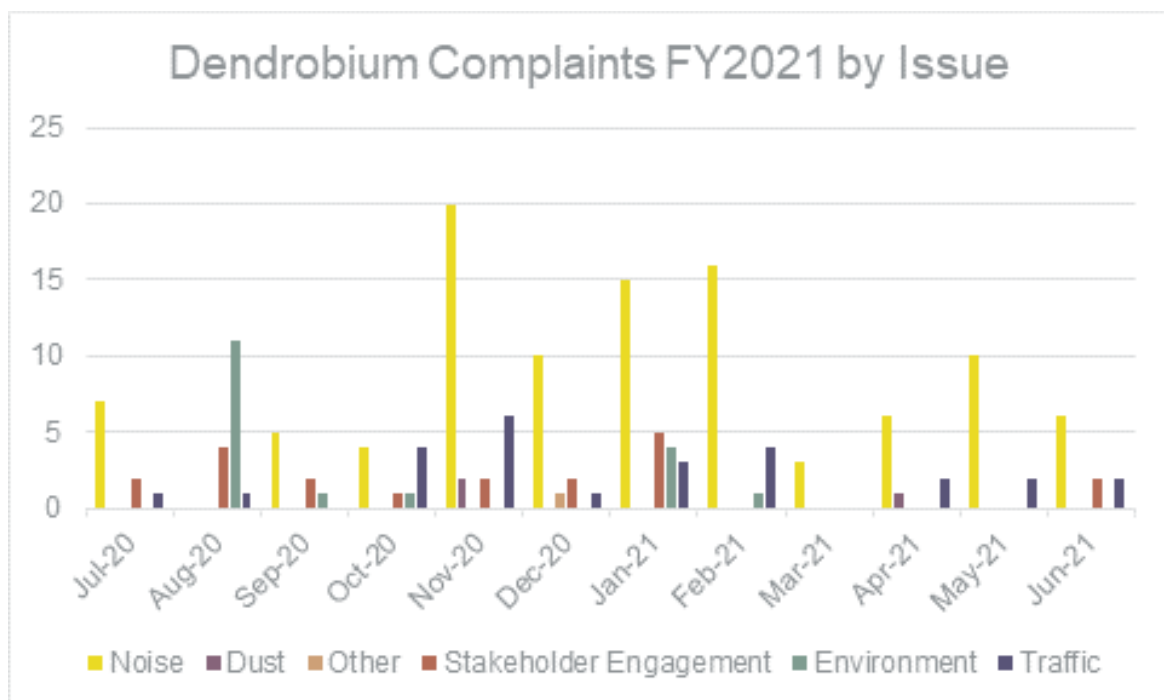


Figure 36: Dendrobium Community Complaints by issue - FY21

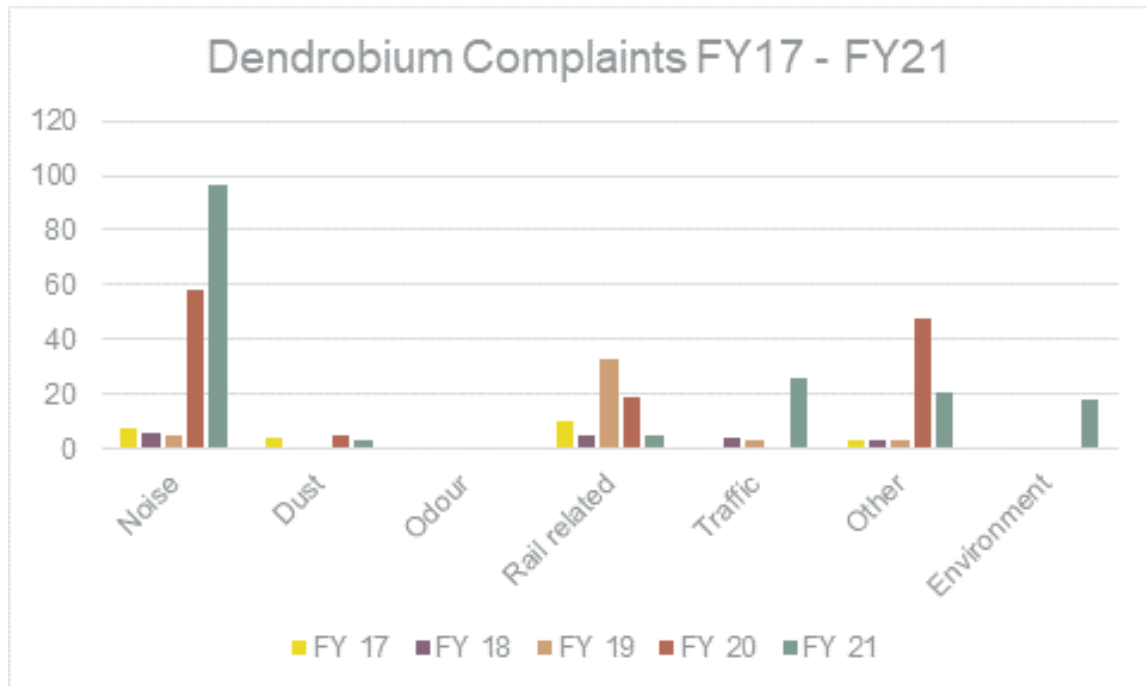


Figure 37: Dendrobium Community Complaints FY17 – FY21

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 Kemira Valley Coal Loading Facility, 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;
- Dendrobium Community Consultative Committee (DCCC) meetings;
- Dendrobium Community Enhancement Committee (DCEC) meetings;
- Dendrobium section on the South32 website;
- Dendrobium Mine Extension Project website;
- Dendrobium Mine Extension e-newsletter;
- participation in community events and activities;
- 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 comprised of an Independent Chairperson, local community members, environmental group representatives, representatives from Wollongong City Council and Wollondilly Shire Council and IMC representatives as outlined in Table 34.

Table 34: Membership of the DCCC as at 30 June 2021

Name	Member Category
Mike Archer	Independent Chairperson
Alex Beccari	Community Representative
Phil Diamond	Community Representative
Phil Grant	Community Representative
Vivien Twyford	Community Representative
Phill Clunas	Community Representative
Jennifer Evans	Community Representative
Anita Mulrooney	Community Representative
Cr Noel Lowry	Wollondilly Shire Council
Ron Zwicker	Wollongong City Council
Anna May Fauconnier	IMC
Chris Schultz	IMC
Antony Leone	IMC

The Independent Chairperson Mike Archer was appointed to the role of Chair in October 2013 and has continued in the role since that date.

DCCC meetings cover discussions on the longwall and development activities, SMPs/Extraction Plans, approval processes, environmental compliance and management, EoP Reports, community complaints and community programs. Copies of minutes from the DCCC meetings are available on the South32 website at: <https://www.south32.net/our-business/australia/illawarra-metallurgical-coal/documents>.

9.2.1.3 **Newsletters and Information Sheets**

During the reporting period, IMC distributed community newsletters to the local community (Mt 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; and
- DCCC and DCEC activities, including information on inspections and projects supported.

9.2.1.4 *Dendrobium Community Enhancement Program*

The Dendrobium Community Enhancement Program (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 committee 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 FY21 include:

- Ryan Park playground, Mount Kembla;
- essential fire-fighting equipment, Farmborough Heights Rural Fire Brigade;
- Life Education Program in local schools;
- Yesterday Stories Project, Wollongong Heritage Collections;
- maintenance equipment, Mount Kembla Pathway;
- water bubbler, Mount Kembla Pathway; and
- Western Suburbs Pool Shade cover, Unanderra.

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, which can be viewed at: <https://www.south32.net/our-business/australia/illawarra-metallurgical-coal/documents>.

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 (shown in Table 35). SAI Global has endorsed a "governance check" process as a 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 35: Environmental Audits Undertaken During Reporting Period

Date	Type	Internal	External	Comments
May 2021	Annual ISO 14001		X	Re-certification
June 2021	Self-Assessment	X		Self-assessment of compliance with the South32 Environment Standard
June/July 2021	Reasonable Assurance Audit	X	X	Review of externally reported greenhouse gas and water data
Ongoing	Management plan governance checks	X		Governance checks are conducted internally as a part of ISO 14001 certification. A schedule has been developed and checks are undertaken as per the schedule.

10.1.1 ISO 14001

The IMC Environmental Management System has been certified to the International Standard ISO 14001 since May 2003. ISO 14001 Certification for Dendrobium Mine, DCPD and Cordeaux was maintained following an external audit over May and June 2021. No non-conformances were identified.

Dendrobium Mine, Cordeaux Colliery and the DCPD are included in IMC's schedule of certified ISO 14001:2015 sites. Each of these operational sites has been regularly audited for compliance against this standard.

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.

All ISO 14001 Actions from 2020 were completed, as confirmed by the 2021 audit.

10.1.2 Environment Standard Self Assessment

An updated version of the South32 Environment Standard was released in October 2020. The Environment Standard Self Assessment for this reporting period was conducted by IMC personnel. It was found that the requirements of the Environment Standard are largely in place with some opportunities to update existing processes. All corrective actions were raised in the action tracking system utilised by IMC and will be closed out as required.

10.1.3 Governance Reviews

The following internal Governance Reviews were conducted for Dendrobium during the reporting period:

- Pollution Incident Response Management Plan;
- Air Quality Management Plan;
- Water Management Plan;
- Noise Management Plan;
- Waste Management Plan; and



- Environmental Management Strategy.

From these, the majority of corrective actions raised were administrative. All 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.

10.1.4 Independent Environmental Audit

Environmental Resources Management Australia Pty Ltd (ERM) completed an independent environmental audit (IEA) of the Consent 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 independent audit every 3 years, unless the Secretary directs otherwise.

The IEA identified four non-compliances (two duplicate), five administrative non-compliances and three observations.

An action plan to address the non-compliances and observations was developed and submitted to DPIE. The action plan and an update on progress of action close out is provided in Appendix 4: Independent Environmental Audit Progress – FY21.

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

10.1.5 KPMG

KPMG undertook a reasonable assurance audit for NGER (National Greenhouse and Energy Reporting) and water data for the reporting period. This audit commenced in June and was completed in July 2021.

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 36 and Table 37 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.

An Advisory Letter and Penalty Notice were issued by the EPA in the reporting period (see Table 38).

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



Table 36: Non-compliances during the reporting period

NC1	
Non-compliance	Uncontrolled discharge of water from the Kemira Valley Sediment Pond. This event was a non-compliance with Condition 1 and 12 of Schedule 2 and Condition 12 of Schedule 4 of DA 60-11-2001, Condition L1.1 of EPL 3241 and Condition 25 of ML 1510. A Penalty Notice was issued by the EPA.
Date	10 August 2020
Details of non-compliance	A release of approximately 10 ML of water containing fine coal particles occurred from the Kemira Valley Sediment Pond after a period of excessive rainfall (greater than 150 mm in three days). The water, sediment and some pond construction materials entered Brandy and Water Creek.
Location	Brandy and Water Creek, adjacent to the KVCLF.
Cause of non-compliance	It was determined that the cause of the event was the corrosion and subsequent failure of the clean water diversion pipe that is located beneath the sediment pond, which directs clean water from the western side of the site to Brandy and Water Creek.
Actions taken to mitigate adverse effects of non-compliance	Following the initial release, remedial actions were put in place to divert the water flows to the buffer dam. A project manager was engaged to coordinate further remedial activities, which included clean-up activities along the banks of Brandy and Water Creek and American Creek to remove materials that were deposited during the event. An Environmental Assessment was undertaken in August 2020 that indicated that there was limited measurable impact to stream ecology. Immediately downstream of the sediment pond showed some immediate impact to stream ecology however this location had a high potential for recovery due to the presence of several macroinvertebrate families, as well as connection to unimpacted upstream habitat from which this location could quickly recolonise. Follow up aquatic monitoring undertaken in November 2020 indicated that there were no long-term impacts associated with the event. Sampling of the creek a week after the event showed that there had been an improvement in stream health. Monitoring conducted in November 2020 showed that this improvement was maintained, and the stream health in downstream sites was similar to the upstream sites. This finding was reflected up and downstream of the American Creek and Brandy and Water Creek confluence which also showed similarities in invertebrates, water quality and stream health indicators. Overall, all sites were considered to be consistent with the ecology expected in a moderately disturbed system. The lack of coal fines evident in the November monitoring support the recovery in aquatic habitat and that there were no long-term impacts associated with the event.
Actions taken to prevent reoccurrence	An external review was undertaken of all water storages at IMC. A new clean water diversion culvert was constructed using DN2000 high density polyethylene (HDPE) SN10 pipe with a design life of at least 50 years.



NC2	
Non-compliance	A visible dust emission occurred from the No. 4 Stockpile Area, which was a non-compliance with the BlueScope Steel EPL 6092. An Advisory Letter was issued.
Date	25 September 2020.
Details of non-compliance	A visible dust emission occurred from the No. 4 Stockpile Area during strong winds ahead of a weather front, which was a non-compliance with EPL 6092. While the Stockpile Area is within the BlueScope Steel site, and operations are covered by EPL 6092, South32 is accountable for dust controls in the leased No. 4 Stockpile Area. Both BlueScope Steel and South32 stockpile coal in this area.
Location	No. 4 Stockpile Area, located adjacent to the DCPD and within the BlueScope Steelworks site.
Cause of non-compliance	A dust spray had been damaged and the spray network was required to be isolated. Strong winds ahead of a weather front on 25 September resulted in dust emissions from the Area 4 Stockpile Area at the time of a site inspection by the EPA.
Actions taken to mitigate adverse effects of non-compliance	Additional water trucks were on call and operational over the period that the dust sprays were off-line. Weather forecasts had been reviewed that predicted strong winds.
Actions taken to prevent reoccurrence	The dust spray was repaired. Additional controls will continue to be implemented where adverse weather conditions are predicted.
NC3	
Non-compliance	An exceedance of the TSS water quality limit was recorded at LDP 5, which is a non-compliance with Condition L2.4 of EPL 3241 and Condition 12 of Schedule 4 of DA 60-03-2001.
Date	22 October 2020.
Details of non-compliance	Water from Dendrobium Mine and the Kemira Valley Sediment Ponds is discharged at this location. A TSS result of 34 mg/L was recorded. The limit is 30 mg/L.
Location	LDP 5, located at Marley Place, Unanderra.
Cause of non-compliance	It is likely that the exceedance occurred due to pump out of the buffer dam in preparation of rain to ensure there was adequate capacity. The sediment pond repair works had not yet been completed following the uncontrolled release of water in August 2020.
Actions taken to mitigate adverse	There was no identified environmental harm associated with this exceedance of criteria.



effects of non-compliance	No further exceedances of criteria have been recorded.
Actions taken to prevent reoccurrence	No specific actions were identified to prevent reoccurrence. With the remedial works completed for the sediment pond, including the reinstatement of full capacity, it is not anticipated that further exceedances will occur.
NC4	
Non-compliance	Noise monitoring was not being undertaken at the location as specified in the Noise Management Plan (NMP), which is a non-compliance with Condition 7 of Schedule 4 of DA 60-03-2001.
Date	15 May 2021.
Details of non-compliance	It was identified that noise monitoring was being undertaken at a location in the vicinity of the noise monitoring location as specified in the Noise Management Plan, and not at the exact location. Monitoring for R39a has been undertaken at this location for an extended period of time.
Location	Noise monitoring location R39a, located near the KVCLF.
Cause of non-compliance	The alternative monitoring location had been utilised for an extended period of time and had not been noted in the handover between personnel. It is noted that the location that monitoring is being undertaken has line of sight to the KVCLF, is elevated and is not obstructed by vegetation.
Actions taken to mitigate adverse effects of non-compliance	The Noise Management Plan was revised in May 2021 to indicate the current monitoring location. An investigation is being undertaken by the noise consultant to identify variance in noise levels between the location as specified in Revision 9.0 of the NMP and Revision 10.0.
Actions taken to prevent reoccurrence	All monitoring locations have been reviewed against the approved management plan to confirm monitoring is being undertaken at the correct location. More detailed descriptions of monitoring locations will be included in the NMP when next revised.

Table 37: Exceedances of criteria during the reporting period

EX1	
Exceedance	An exceedance of the noise impact assessment criteria in Condition 1 of Schedule 4 of DA 60-03-2001 was recorded at R39a, located near the KVCLF.
Date	8 February 2021.
Details of exceedance	Representative LA _{eq} noise levels recorded at this location at 12.00 pm were 39 dBA, which is 2 dBA above the noise impact assessment criteria of 37 dBA for the day-time period.



	Note that for the determination of compliance, the NSW Industrial Noise Policy states in Section 11.1.3: <i>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.</i>
Location	Receiver R39a, Figtree Farm, Mt Kembla
Cause of exceedance	The cause of the exceedance was near continuous locomotive activity at the KVCLF over the monitoring period.
Actions taken to mitigate adverse effects of the exceedance	Quarterly attended monitoring has continued. No further exceedances of criteria were identified at this location in FY21.
Actions taken to prevent reoccurrence	There were no specific actions identified as a result of the exceedance.

Table 38: Regulatory action during the reporting period

Regulatory Action	Detail
Official Caution	None issued
Warning Letters	An Advisory Letter was issued by the EPA on 3 December 2020 regarding the dust emission event at Stockpile 4.
Penalty Notices	A Penalty Notice in the amount of \$15,000 was issued by the EPA on 18 March 2021 for the uncontrolled release of water from the Kemira Valley sediment pond. The EPA completed its investigation of the incident and determined that Dendrobium Coal did not comply with condition L1.1 of its licence. Condition L1.1 of the licence states that except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the <i>Protection of the Environment Operations Act 1997</i> . Section 120 (1) states that "A person who pollutes any waters is guilty of an offence".
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 continue longwall mining in Area 3B. Development will continue in Area 3B and 3C Main Gates, Wonga Mains, and Corrimal Mains. Development will also be undertaken towards the future mining domains of Area 5, subject to all necessary approvals being in place.

An EIS is being developed for the Dendrobium Next Domain Adapt Project. Submission is planned for FY22.

12.1.2 Exploration

Planned exploration activities for FY22 are reduced from FY21, as exploration is expected to be more heavily focussed around the IMC Appin mining operations. Just four exploration holes are planned in FY22, targeting additional detail on the next Longwall mining block (LW19) in Area 3A.

Approvals boreholes will continue to feature in FY22 in support of ongoing Dendrobium mining operations. The key scopes for the seven planned approvals boreholes include pre/post-mining monitoring boreholes, angle stress monitoring and continued Elouera Fault investigations proximal to underground workings. Additionally, equipment installation in four pre-existing Elouera Fault holes is also scheduled for FY22. Elouera fault drilling and installations will occur just south of the CCL 768 southern border, on the Elouera lease, held by Wollongong Coal. This was approved with an agreement between Wollongong Coal, South32, and the Department.

No seismic operations are planned for FY22.

The proposed location of exploration boreholes planned for FY22 are shown in Plan 10: Planned Exploration activities in CCL 768 – FY22.

12.1.3 Construction Activities

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

- Lower Portal Road and culvert upgrade project.
- Upper Portal Road upgrade.
- Roof and retaining wall replacement at the Bulk Store.
- Men's bathhouse upgrade.
- Installation of new female bathhouse.
- Area 3C gas drainage plant infrastructure.
- Upgrade of the emergency response equipment at Ventilation Shafts 1, 2 and 3 and the Dendrobium Portal and Kemira Valley Tunnel.

12.1.4 Environmental Management

12.1.4.1 Erosion and Sediment Control

Erosion and sediment control improvements planned to be undertaken during the next reporting period at the Dendrobium Pit Top include:



- Improvements and ongoing maintenance to drainage.
- Upper Portal Road upgrade and additional site sealing.

12.1.4.2 Weed Management

On-going weed management will continue at KVCLF and KVRL with separate contractors maintaining weed control for operational and non-operational land.

12.1.4.3 Noise Management

A directional real-time noise monitoring system is due to be completed in the first half of FY22, with the five noise loggers installed and commissioned at the Dendrobium Pit Top during this reporting period (refer to Section 6.8.1.4). The system will be used to proactively manage noise on site and identify potential impacts to the surrounding community.

Reconditioning of the rail track and a track alignment on the northern side of Bushell's Hill tunnel are planned for the next reporting period to manage KVRL noise.

12.1.4.4 Hydrocarbon and Chemical Management

Preliminary planning is being undertaken to find an alternative site for the bulk diesel tank and solcenic tanks. A fit-for-purpose hydrocarbon storage container is being investigated to accommodate bulk oil and hydraulic fluids on site.

At KVCLF, the current fire suppression system is scheduled to be upgraded with works commencing in Q2 of FY22. Works include the removal of the current bladder, tank clean, installation of a new bladder, and hydraulic pump. All works will be carried out by a licenced contractor.

12.1.4.5 Environmental Monitoring

During FY21, additional surface flow monitoring sites were approved for installation 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. Before the end of June 2021, one flow site was installed. COVID restrictions meant the remaining six sites were postponed to FY22.

12.1.4.6 Environmental Management System

Dendrobium Mine is planning to continue environmental management in accordance with ISO 14001. Environmental Management Plans will be updated and governance reviews undertaken as required during the next reporting period.

12.1.5 Rehabilitation

The following activities under the Legacy Sites and Rehabilitation Program are planned for FY22:

- Removal of contaminated soil from the O'Briens Gap Pump House site.
- Partial relinquishment of CCL 768 related to power line removals.
- Continued investigation into the removal of redundant infrastructure associated with O'Briens Drift, particularly at the KVCLF.

The RMP and associated documents will be developed and submitted to the Resources Regulator.



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 is planned for FY22. The upgrade aims to replace ageing infrastructure that is no longer fit for purpose and align the infrastructure with ongoing high voltage maintenance requirements. This includes:

- installation of a pole-mounted transformer and installation of underground low voltage cabling to the Administration building, Workshop and Communications Huts;
- installation of a barrier wall to separate potential mine shaft upcast air from the server room and offices; and
- replacement of distribution boards that supply the Administration building and Workshop.



13. REFERENCES AND ASSOCIATED DOCUMENTS

Dendrobium Mine Development Consent DA 60-03-2001.

Biosis, Dendrobium Areas 2, 3A and 3B: Terrestrial Ecology Monitoring Program Annual Report 2019 (2020).

Cardno, Longwall 15 End of Panel Report Aquatic Flora and Fauna Review (2020).

IMC, Air Quality and Greenhouse Gas Management Plan.

IMC, Bushfire Management Plan.

IMC, Landscape Management Plan.

IMC, Lighting Management Plan.

IMC, Noise Management Plan.

IMC, Traffic Management Plan.

IMC, Waste Management Plan.

IMC, Water Management Plan.

IMC, Mining Operations Plan FY16 – FY22.

HGEO, Dendrobium Mine Assessment of strata permeability adjacent to Avon Dam following extraction of Longwall 16, Area 3B (2020).

Avon and Cordeaux Reservoir DS NSW Notification Area Management Plan.

Environment Protection Licence 3241.

Australian and New Zealand Guidelines for Fresh and Marine Water Quality- Volume 1, Chapter 3 (2000).

IMC, Watercourse Impact Monitoring, Management and Contingency Plan, Dendrobium Area 3B.

IMC, Swamp Impact, Monitoring, Management and Contingency Plan.

IMC, Dendrobium 3B Longwall 16 End of Panel report.

Dendrobium Mine – Plan for the Future: Coal for Steelmaking – Submissions Report (2020).

Biosis Research, Dendrobium Area 3B Longwalls 9-18: Heritage Impact Assessment.

JBS&G, Remedial Action Plan - Corrimall No 3 Ventilation Shaft Picton Road, NSW (Rev 3).

IMC – Dendrobium Pit Top Yard Dust TARP_2019.



13.1 Acronyms used in Annual Review

Table 39: Acronyms used in Annual Review			
Acronym	Definition	Acronym	Definition
ACARP	Australian Coal Association Research Program	LDP	Licence Discharge Point
ARC	Australian Research Council	LW	Longwall
CCL	Consolidated Coal Lease	MOP	Mining Operations Plan
CPI	Consumer Price Index	NATA	National Association of Testing Authorities
CSIRO	Commonwealth Scientific and Industrial Research Organisation	NEPM	National Environment Protection Measure
CV	Calorific Value	NOW	NSW Office of Water
CWEA	Coal Wash Emplacement Area	OEH	Office of Environment and Heritage (now Biodiversity and Conservation Science Directorate)
DCCC	Dendrobium Community Consultative Committee	OPD	Operational Purpose Deduction
DCEC	Dendrobium Community Enhancement Committee	PEF	Processed engineered fuel
DCEP	Dendrobium Community Enhancement Program	PM ₁₀	Particulate matter 10 microns
DCPP	Dendrobium Coal Preparation Plant	RAP	Remedial Action Plan
DDG	Dust Deposition Gauge	RMP	Rehabilitation Management Plan
DND	Dendrobium Next Domain Project	RMS	Roads and Maritime Services
DO	Dissolved Oxygen	ROM	Run of Mine
DPIE	Department of Planning, Industry and Environment ²⁶	RNWG	Rail Noise Working Group
DS NSW	Dams Safety NSW	IMC	South32 Illawarra Metallurgical Coal



EC	Electrical conductivity	SBO	Strategic Biodiversity Offsets
EFT	IMC Environmental Field Team	SIMMCP	Swamp Impact, Monitoring, Management and Contingency Plan
EPL	Environment Protection Licence	SMP	Subsidence Management Plan
EP	Extraction Plan	TARP	Trigger Action Response Plan
EPA	Environment Protection Authority	TSP	Total Suspended Particulate
EPP	Environmental Protection Plan	TSS	Total Suspended Solid
FY	Financial Year	UoW	University of Wollongong
HVAS	High Volume Air Sampler	VAM	Ventilation Air Methane
KVCLF	Kemira Valley Coal Loading Facility	WIMMCP	Watercourse Impact, Monitoring, Management and Contingency Plan
KVRL	Kemira Valley Rail Line		

²⁶ Previously Department of Planning and Environment, Department of Planning, Department of Urban Affairs and Planning



13.2 Management Plans

The following Management Plans are required by the Dendrobium Mine Development Consent DA 60-03-2001 and EPL 3241.

Table 40: Management Plans

Management Plan	Approved Date	Next Review
Air Quality and Greenhouse Gas Management Plan	8/06/2021	1/04/2023
Bushfire Management Plan	18/08/2021	18/08/2024
Environmental Management Strategy	22/07/2021	1/07/2024
Landscape Management Plan	10/08/2021	1/08/2024
Lighting and Visual Amenity Management Plan	8/06/2021	8/06/2024
Noise Management Plan	29/05/2021	1/04/2024
Pollution Incident Response Management Plan EPL 3241	21/12/2020	6/04/2022
Rehabilitation Management Plan / Mining Operations Plan (MOP)	29/06/2015	1/07/2022
Traffic Management Plan	29/05/2021	1/04/2024
Waste Management Plan	1/06/2021	1/06/2024
Water Management Plan	30/08/2018	14/01/2021 ²⁷

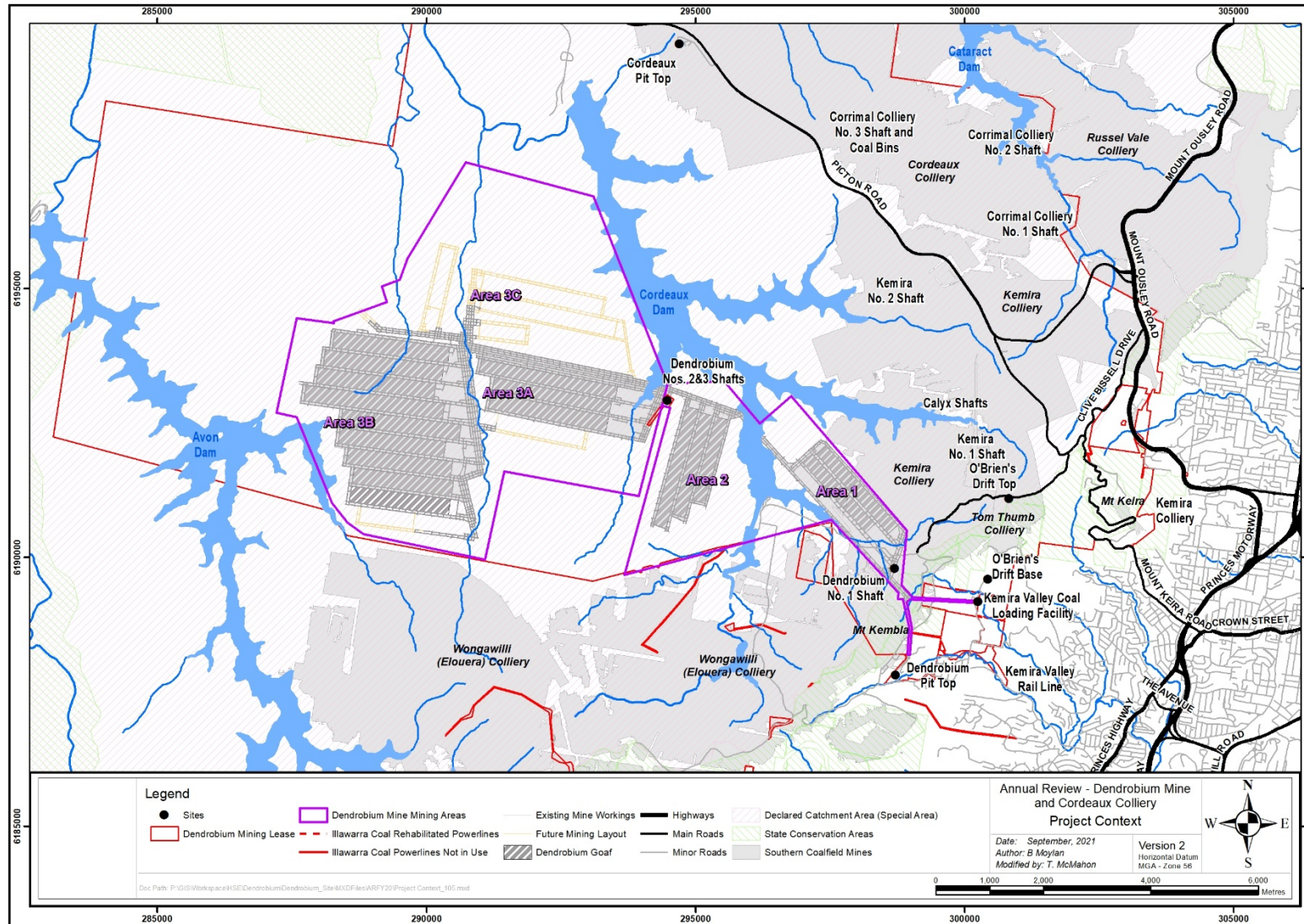
²⁷ Currently under review and with regulatory agencies for comment.



14. PLANS

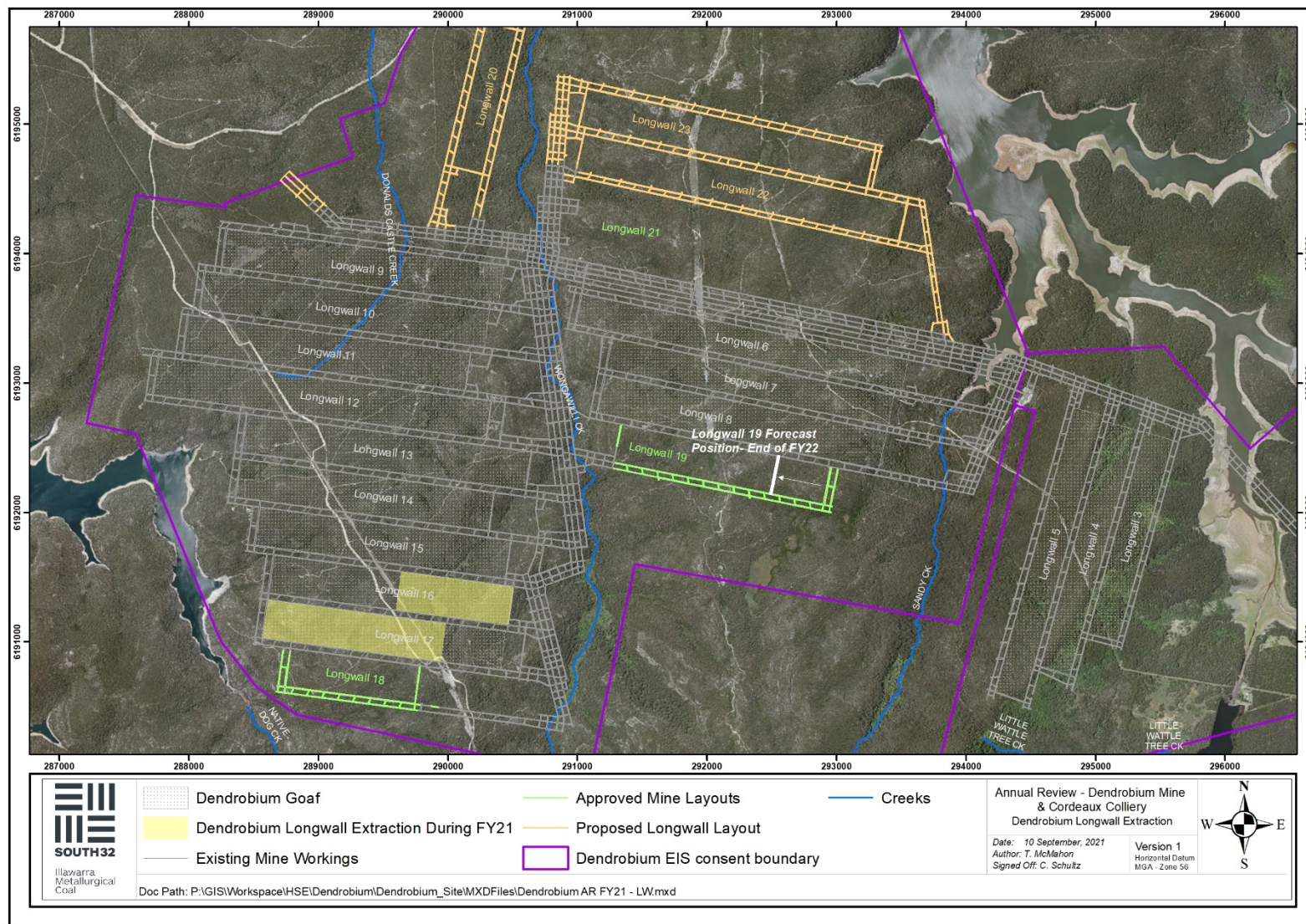


Plan 1A: Location of Mining Domain



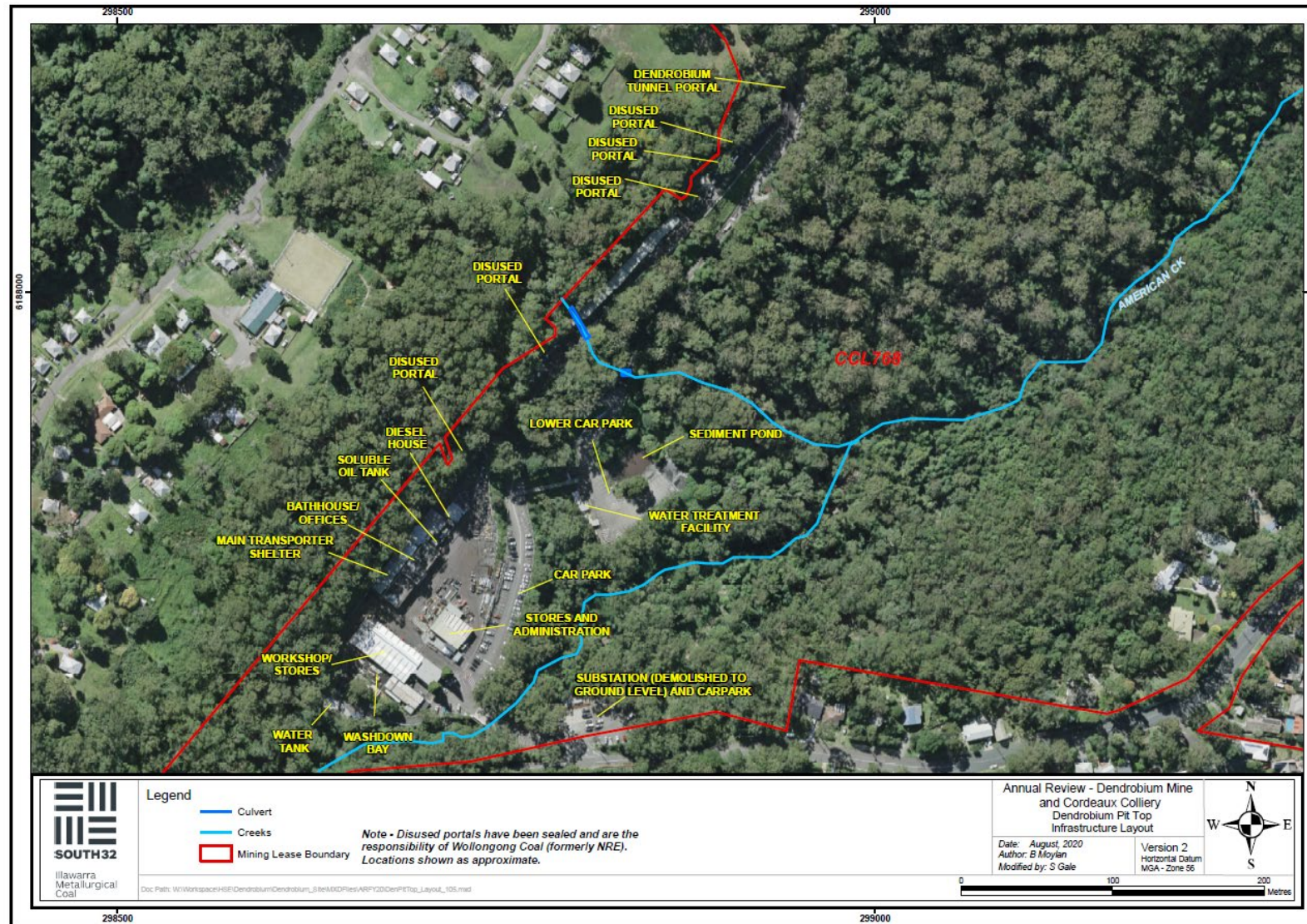


Plan 1B: LW Status as at end of Financial Year



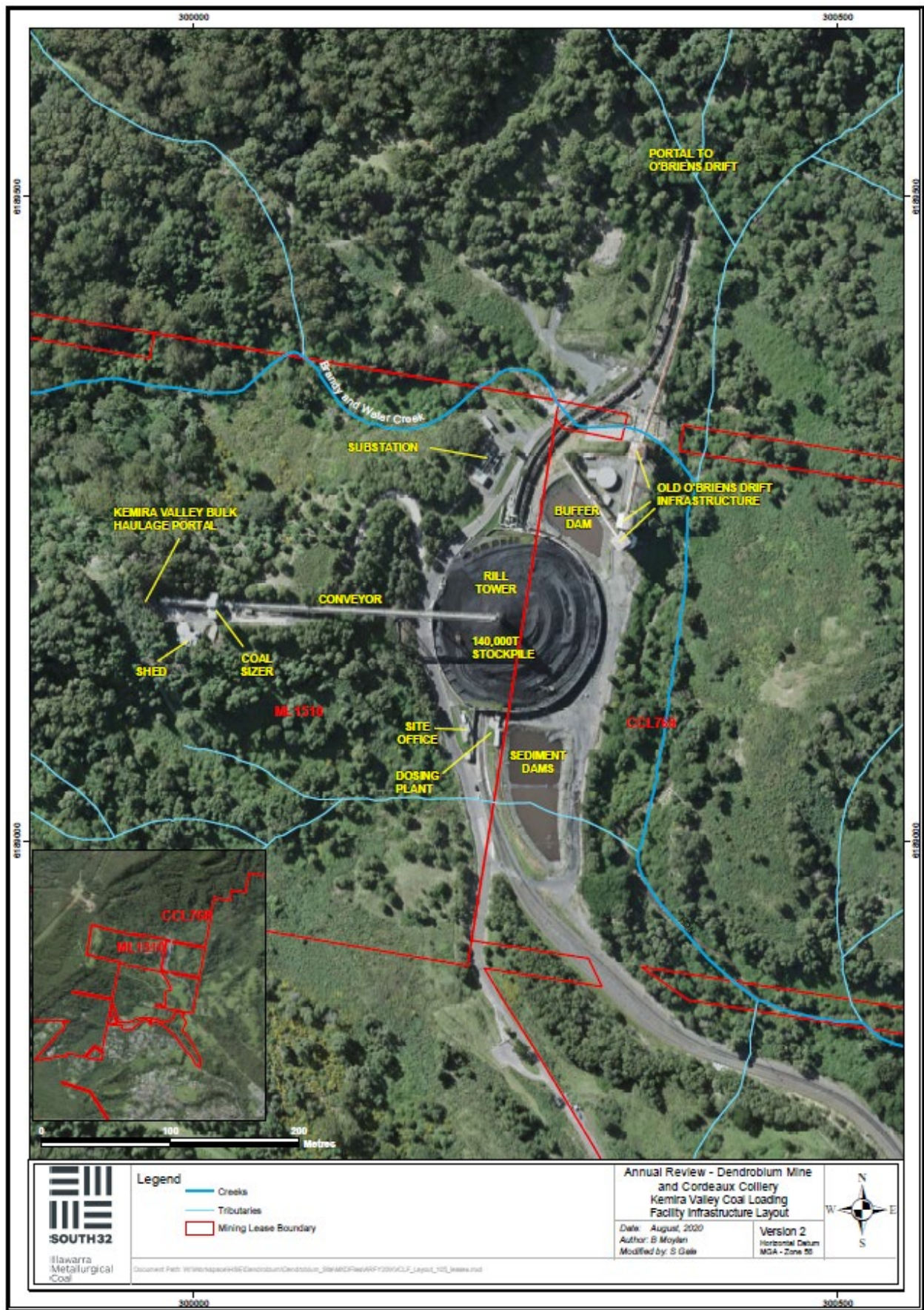


Plan 2: Dendrobium Mine Site



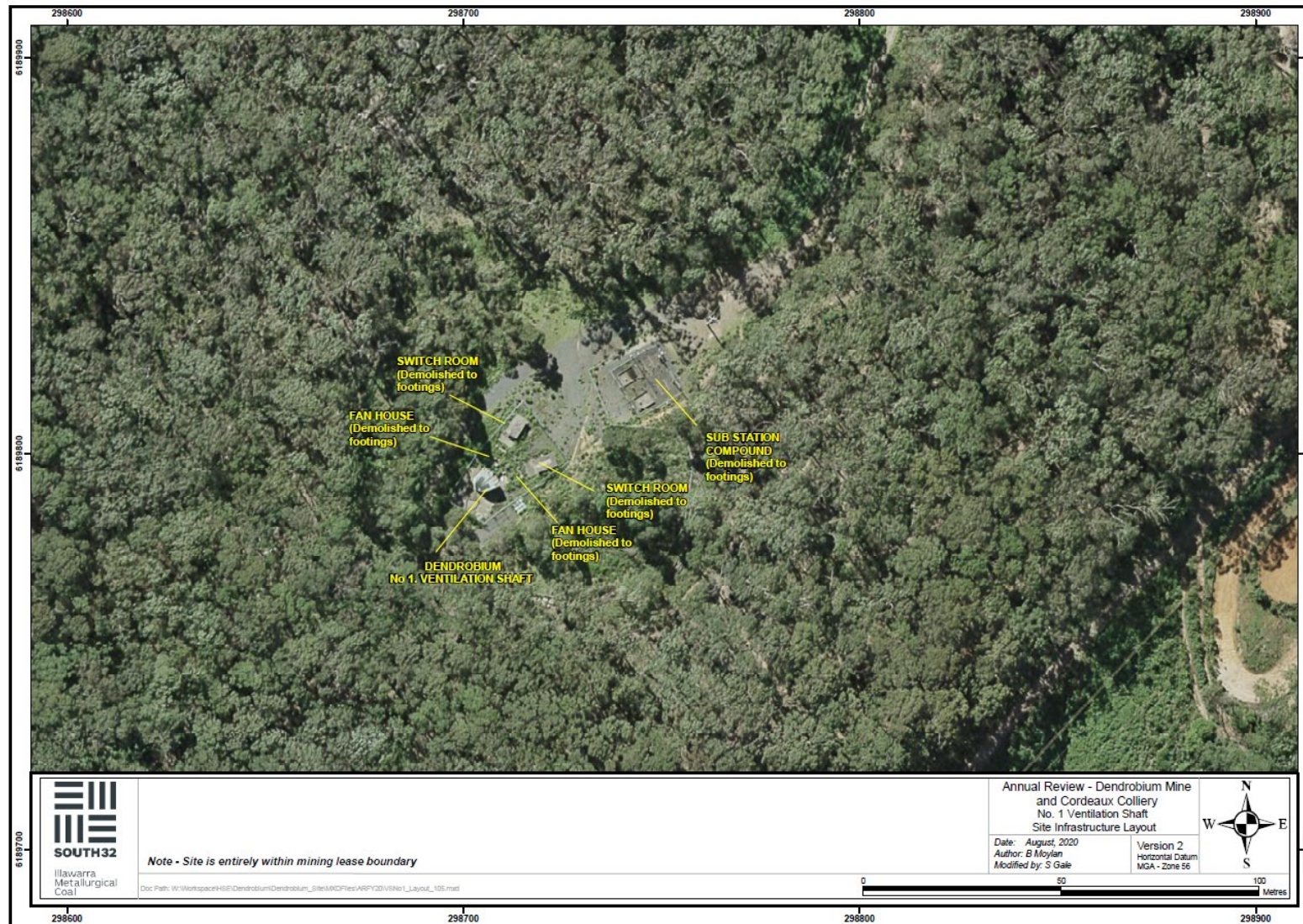


Plan 3: Site Layout – Kemira Valley





Plan 4: No. 1 Ventilation Shaft Site Layout



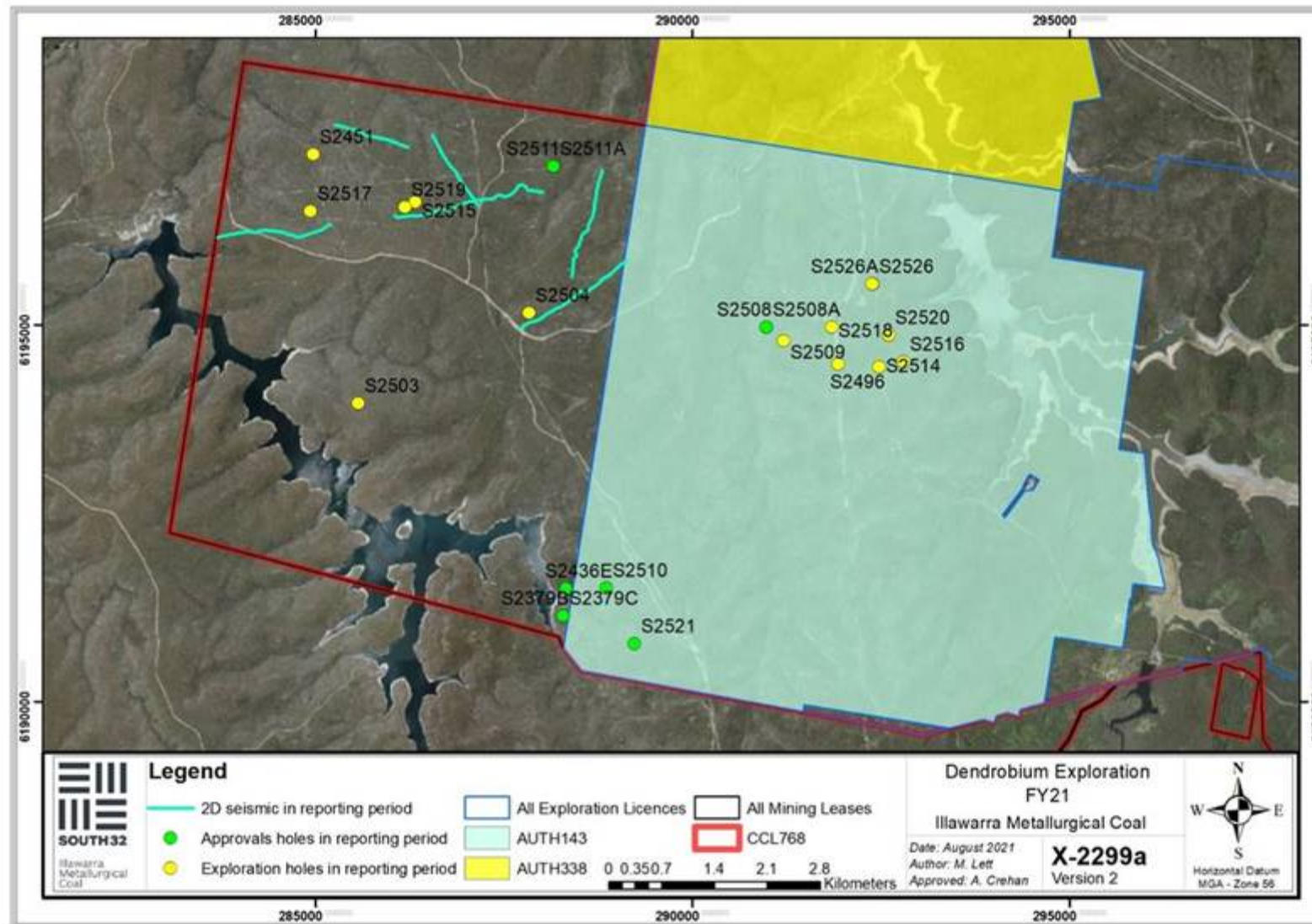


Plan 5: No. 2 and 3 Ventilation Shaft Site Layout



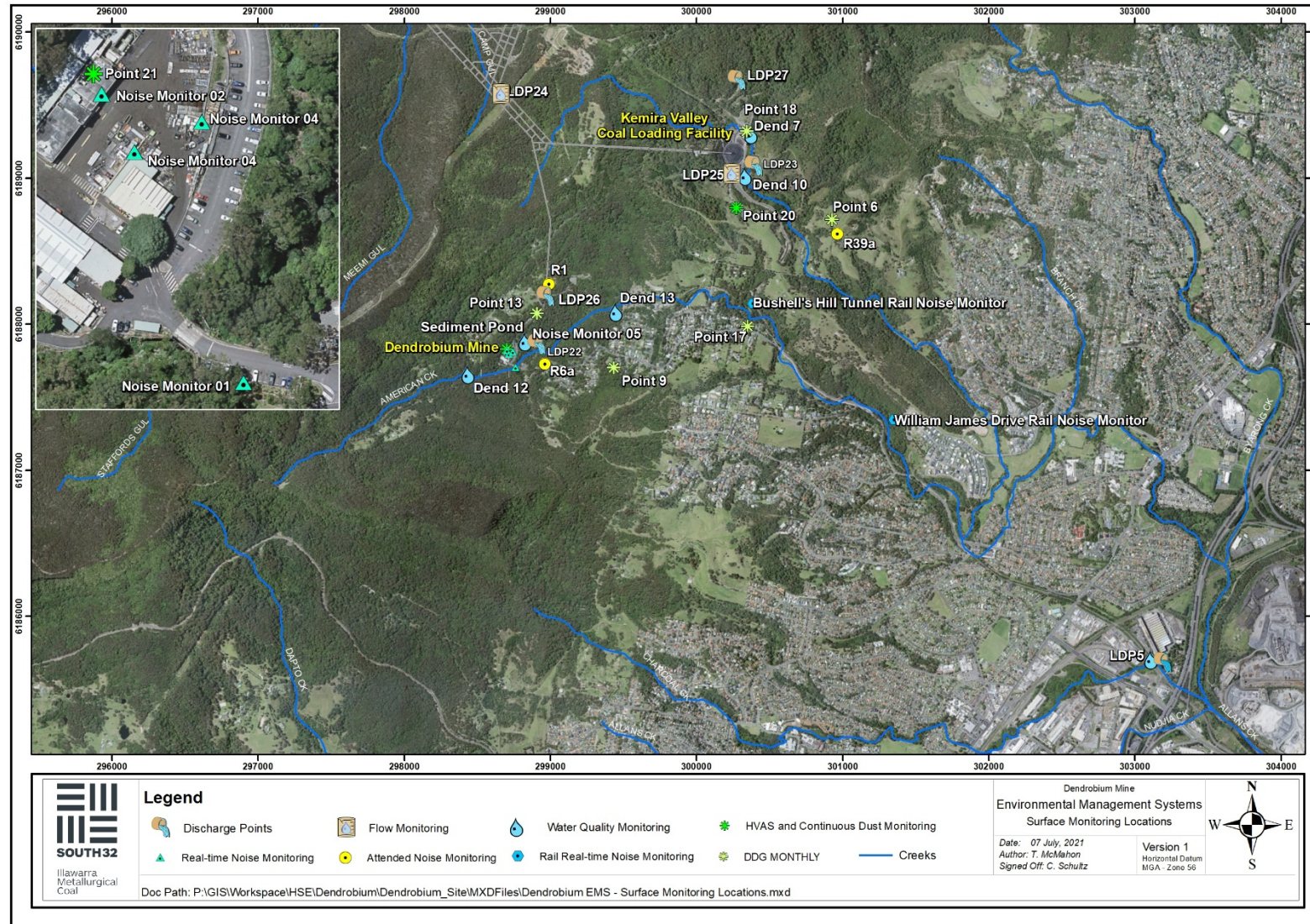


Plan 6: Exploration Activities – Dendrobium Mine – FY21



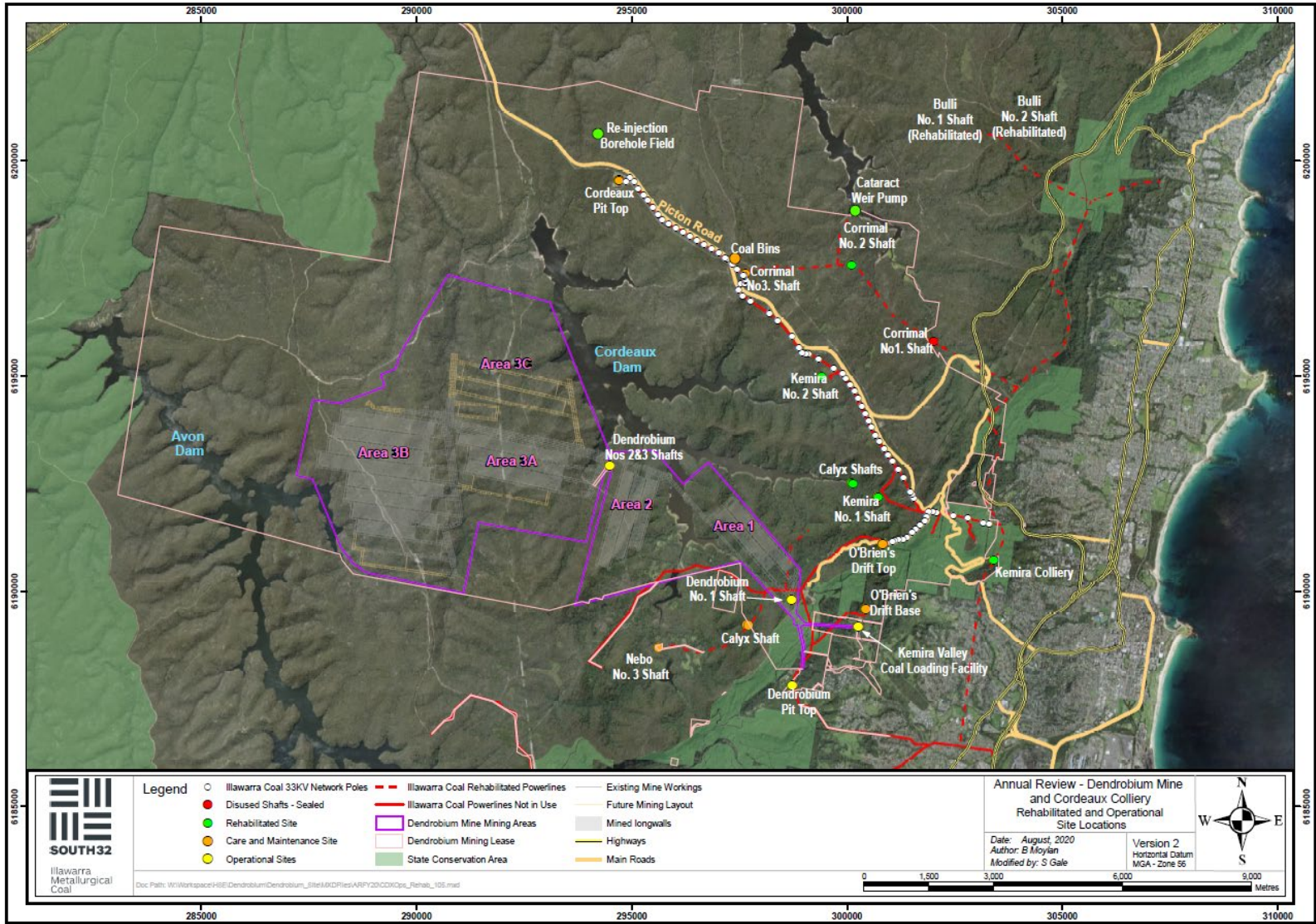


Plan 7: Dendrobium Monitoring Locations



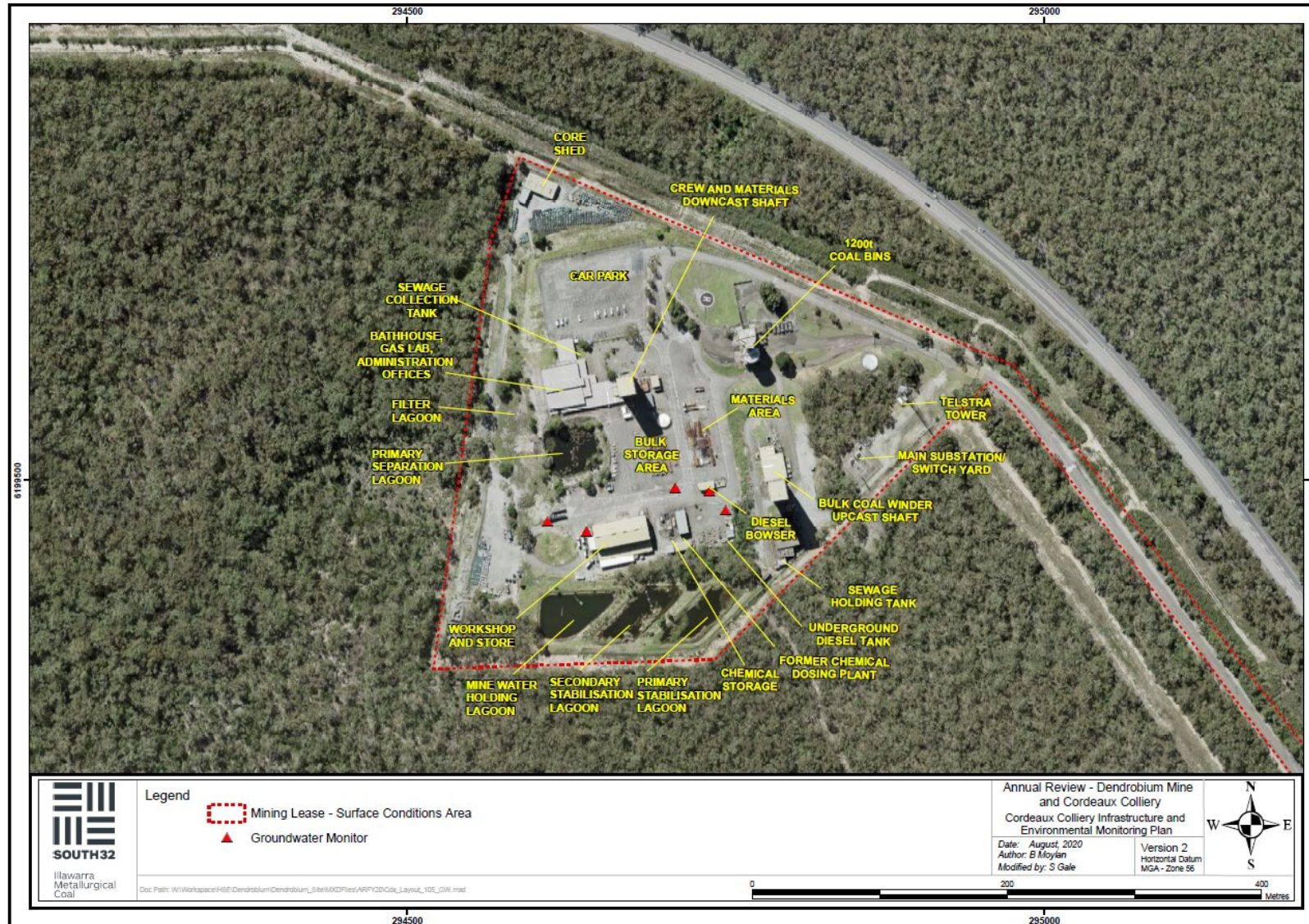


Plan 8: Operational and Rehabilitation Areas





Plan 9: Cordeaux Colliery Pit Top Infrastructure



Legend

- Planned approvals holes
- Planned exploration holes
- All Exploration Licences
- AUTH143
- AUTH338
- All Mining Leases
- CCL768

Dendrobium Exploration Planned FY22
Illawarra Metallurgical Coal

Date: August 2021
 Author: M. Lett
 Approved: A. Crehan

X-2299b
 Version 2

0 0.5 1 2 3 4 Kilometers

N
 W E
 S
 Horizontal Datum
 MGA - Zone 56



15. APPENDICES

Appendix 1: EPA Annual Return - FY21

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: 1-7-2020 To: 30-6-2021

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 handling 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	3
Water	9
Noise	103
Waste	1
Other	52
Total complaints recorded by the licensee during the reporting period	168

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

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	0.008	0.011	0.020
Conductivity	microsiemens per centimetre	12	12	1680	1908	2840
Copper	milligrams per litre	12	12	<0.001	0.001	0.002
Nickel	milligrams per litre	12	12	0.010	0.019	0.075
Oil and Grease	milligrams per litre	12	12	<5	5	9

pH	pH	12	12	8.0	8.3	8.5
Total suspended solids	milligrams per litre	12	12	<5	9	34
Zinc	milligrams per litre	12	12	0.026	0.052	0.093

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	Nil	Nil	N/A	N/A	N/A

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	Nil	Nil	N/A	N/A	N/A

B2 Concentration Monitoring Comments

Point 20 and Point 21 photometers were installed in July 2021 - after end of EPL Reporting period.

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	1.87	6.54	8.43

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	0.00	0.28	3.24

C. Statement of Compliance - Licence Conditions

C1. Compliance with Licence Conditions

Were all conditions of the licence complied with (including monitoring and reporting requirements)?	No
---	----

C2. Details of Non-Compliance with Licence

Licence condition number not complied with ▼
L1.1
Summary of particulars of the non-compliance ▼
Uncontrolled discharge of water from the Kemira Valley Sediment Pond
Further details on particulars of non-compliance, if required ▼
A release of approximately 10 ML of water containing fine coal particles occurred from the Kemira Valley Sediment Pond after a period of excessive rainfall (greater than 150 mm in three days). The water, sediment and some pond construction materials entered Brandy and Water Creek.
Number of times occurred ▼
1
Date(s) when the non-compliance occurred, if applicable ▼
10/8/2020
Cause of non-compliance ▼
It was determined that the cause of the event was the corrosion and subsequent failure of the clean water diversion pipe that is located beneath the sediment pond, which directs clean water from the western side of the site to Brandy and Water Creek.
Action taken or that will be taken to mitigate any adverse effects of the non-compliance ▼

Remedial actions were put in place to divert water flows to buffer dam. Project manager was engaged to coordinate further remedial activities, including clean-up activities along the banks of Brandy and Water Creek and American Creek to remove materials that were deposited during the event. Environmental Assessment undertaken in Aug20 indicated there was limited measurable impact to stream ecology. Immediately downstream of sediment pond showed some immediate impact to stream ecology however this location had a high potential for recovery due to the presence of several macroinvertebrate families, as well as connection to unimpacted upstream habitat from which this location could quickly recolonise. Follow up aquatic monitoring undertaken in Nov20 indicated there were no long-term impacts associated with the event. Sampling of the creek a week after the event showed there had been an improvement in stream health. Monitoring conducted in Nov20 showed this improvement was maintained, and stream health in downstream sites was similar to upstream sites. This finding was reflected up and downstream of the American Creek and Brandy and Water Creek confluence which also showed similarities in invertebrates, water quality and stream health indicators. Overall, all sites were considered to be consistent with the ecology expected in a moderately disturbed system. The lack of coal fines evident in Nov monitoring support the recovery in aquatic habitat and no long-term impacts.

Action taken or that will be taken to prevent a recurrence of the non-compliance ▼

An external review was undertaken of all water storages at IMC.
A new clean water diversion culvert was constructed using DN2000 high density polyethylene (HDPE) SN10 pipe with a design life of at least 50 years.

Uploaded Document Name ▼

Uploaded Document Description ▼

Licence condition number not complied with ▼

L2.4

Summary of particulars of the non-compliance ▼

An exceedance of the TSS water quality limit was recorded at LDP 5

Further details on particulars of non-compliance, if required ▼

Water from Dendrobium Mine and the Kemira Valley Sediment Ponds is discharged at this location. A TSS result of 34 mg/L was recorded. The limit is 30 mg/L.

Number of times occurred ▼

1

Date(s) when the non-compliance occurred, if applicable ▼

22/10/20

Cause of non-compliance ▼

It is likely that the exceedance occurred due to pump out of the buffer dam in preparation of rain to ensure there was adequate capacity. The sediment pond repair works had not been completed following the uncontrolled release of water in August 2020.

Action taken or that will be taken to mitigate any adverse effects of the non-compliance ▼

There was no identified environmental harm associated with this exceedance of criteria.
No further exceedances of criteria have been recorded.

Action taken or that will be taken to prevent a recurrence of the non-compliance ▼

No specific actions were identified to prevent reoccurrence. With the remedial works completed for the sediment pond, including the reinstatement of full capacity, it is not anticipated that further exceedances will occur.

Uploaded Document Name ▼

Uploaded Document Description ▼

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/our-business/australia/illawarra-metallurgical-coal/documents		
Has the PIRMP been tested?		Yes
The PIRMP was last tested on	3-9-2020	
Has the PIRMP been updated?		Yes
The PIRMP was last updated on	21-12-2020	
Number of times the PIRMP was activated in this reporting period?		1
The PIRMP was activated on	10/8/20	

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



Annual Return

DENDROBIUM COAL PTY LTD

Licence 3241

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/our-business/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?	18-6-2021
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



Annual Return

DENDROBIUM COAL PTY LTD

Licence 3241

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 Security Cost Estimates

Rehabilitation cost estimate provided only for Department of Regional NSW (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 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.	Non-compliant	An uncontrolled release of water from the Kemira Valley Sediment Pond occurred on 10 August 2020. See Section 11
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); (g) EA (MOD 7); and (h) EA (MOD 8)	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.	Not compliant	See Condition 1 of Schedule 4 and Condition 15 of Schedule 4
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.
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;	Compliant	Requirements have been complied with where reasonable and feasible.



Condition of Consent	Status	Comments
(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.		
Limits on Approval		
5. Mining operations may take place in the mining area until 31 December 2030. <i>Note: Under this consent, the Applicant is required to rehabilitate the site to the satisfaction of the Secretary and DRG. 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.</i>	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.
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 updated and approved by the Department.
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. <i>Notes:</i> - Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works. - Part 8 of the EP&A Regulation sets out the requirements for the certification of the development.	Compliant	All construction activities have been undertaken in accordance with the requirements of the BCA where applicable.
Demolition		
11. The Applicant must ensure that all demolition work is carried out in accordance with <i>Australian Standard AS 2601-2001: The Demolition of Structures</i> , or its latest version.	Compliant	Demolition during the reporting period has been undertaken



Condition of Consent	Status	Comments
		generally in accordance with AS 2601-2001.
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.	Non-compliant	A maintenance management system is used to ensure 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 entry process ensures that there is a maintenance strategy and operating procedure for equipment prior to going underground. An uncontrolled release of water from the Kemira Valley Sediment Pond occurred on 10 August 2020. See Section 11.
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 FY21 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 supplementary waters and monitoring of the effectiveness of the works, as determined by the Secretary.	Compliant	Management measures were undertaken as required and at the cost of IMC where not recoverable by a third party.
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	Compliant	A biodiversity offset area has been established



Condition of Consent	Status	Comments
accordance with this consent), the Secretary, in consultation with OEH, 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		and approved by the Secretary.
SCHEDULE 3: SPECIFIC ENVIRONMENTAL CONDITIONS – MINING AREA		
SUBSIDENCE		
<i>Note: These conditions should be read in conjunction with the Statement of Commitments.</i>		
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; (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.	Compliant	A SMP for Area 3A was approved that meets these requirements.
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	Compliant	A SMP for Area 3A was approved that meets these requirements. The



Condition of Consent	Status	Comments
release, iron staining and minor impacts on water flows, water levels and water quality) to the satisfaction of the Secretary. <i>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.</i>		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 DPI 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 EPA, SCA and DPI; (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 (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.	Compliant	The Watercourse Impact Monitoring, Management and Contingency Plan has been incorporated into the Area 3B SMP and is available on the South32 website.
Swamp Impact Management		



Condition of Consent	Status	Comments
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 DRG 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 OEH, Water NSW and DRG; (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. <i>Notes:</i> - 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. - Requirements under paragraphs (a) and (b) relate only to the Swamp Impact Monitoring, Management and Contingency Plan for Area 3A.	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.
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 Secretary of DRG. 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;	Compliant	SMPs that meet these requirements have been and will be submitted as required. These SMPs are available on the South32 website.



Condition of Consent	Status	Comments
(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 OEH, WaterNSW and DRG; (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 Secretary of DRG. <i>Notes:</i> - 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.		
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 DRG; (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 Secretary of DRG. <i>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.</i>	Compliant	SMPs are prepared in line with this condition.
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:	Compliant	End of Panel Reports for Longwalls 6, 7, 8, 9, 10, 11,12, 13, 14, 15 and 16 have been submitted



Condition of Consent	Status	Comments
- 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, DPI, SCA, EPA, DWE and any other relevant agency to the satisfaction of the Secretary.		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. <i>Note: Conditions 9 and 10 apply to Area 2, as well as to Areas 3A, 3B and 3C.</i>	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.	N/A	No such request has been received from the Department.
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 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.	Compliant	The Aboriginal Heritage Plan has been incorporated into SMPs as required.
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;	Compliant	The Groundwater Monitoring Program has been incorporated into SMPs as required. A Groundwater Monitoring and



Condition of Consent	Status	Comments
(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 <i>The Design of a Hydrological and Hydrogeological Monitoring Program to Access the Impacts of Longwall Mining in SCA Catchment</i>.		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.	Compliant	Noise monitoring is undertaken in accordance with the approved Noise Management Plan. A summary of results is provided via the Dendrobium Mine Annual Review and in the 14-day report published on the South32 website. There was one exceedance of the LA_{eq, 15-minute} noise criteria at monitoring location R39a during the reporting period²⁸.

²⁸ 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 if the monitored noise level is more than 2dB above the statutory noise limit specified in the consent or licence condition.



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Table 1: Noise impact assessment criteria dB(A) <table><tr><th>Day L_{Aeq}(15 min)</th><th>Evening L_{Aeq}(15 min)</th><th>Night L_{Aeq}(15 min)</th><th>LA1(1 min)</th><th>Residence (as shown in the Noise Monitoring Program)</th></tr><tr><td>42</td><td>42</td><td>38</td><td>48</td><td>R2</td></tr><tr><td>41</td><td>41</td><td>40</td><td>50</td><td>R22</td></tr><tr><td>40</td><td>40</td><td>39</td><td>49</td><td>R1</td></tr><tr><td></td><td></td><td></td><td></td><td>R9</td></tr><tr><td></td><td>40</td><td>37</td><td>47</td><td>R15a</td></tr><tr><td></td><td></td><td></td><td></td><td>R3a</td></tr><tr><td></td><td></td><td></td><td></td><td>R5a</td></tr><tr><td>37</td><td>35</td><td>35</td><td>45</td><td>R6a&b</td></tr><tr><td></td><td></td><td></td><td></td><td>R39a</td></tr></table> Notes: - To determine compliance with the L_{Aeq}(15 minutes) 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: - wind speeds of up to 3 m/s at 10 metres above ground level ; or - 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.	Day L _{Aeq} (15 min)	Evening L _{Aeq} (15 min)	Night L _{Aeq} (15 min)	LA1(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		40	37	47	R15a					R3a					R5a	37	35	35	45	R6a&b					R39a		
Day L _{Aeq} (15 min)	Evening L _{Aeq} (15 min)	Night L _{Aeq} (15 min)	LA1(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																																																
	40	37	47	R15a																																																
				R3a																																																
				R5a																																																
37	35	35	45	R6a&b																																																
				R39a																																																
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) <table><tr><th>Day L_{Aeq}(15 min)</th><th>Evening L_{Aeq}(15 min)</th><th>Night L_{Aeq}(15 min)</th><th>Residence (as shown in the Noise Monitoring Program)</th></tr><tr><td>47</td><td>47</td><td>43</td><td>R2</td></tr><tr><td>46</td><td>46</td><td>45</td><td>R22</td></tr><tr><td>45</td><td>45</td><td>44</td><td>R1</td></tr><tr><td></td><td></td><td></td><td>R9</td></tr><tr><td></td><td>45</td><td>42</td><td>R15a</td></tr><tr><td></td><td></td><td></td><td>R3a</td></tr><tr><td></td><td></td><td></td><td>R5a</td></tr><tr><td>42</td><td>40</td><td>40</td><td>R6a&b</td></tr><tr><td></td><td></td><td></td><td>R39a</td></tr></table> Note: Noise generated by the development is to be measured in accordance with the notes to Table 1.	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		45	42	R15a				R3a				R5a	42	40	40	R6a&b				R39a	N/A	Noise levels recorded from operational activities have not exceeded the criteria in Table 2. No written requests have been received from landholders for land acquisition due to noise in the reporting period.										
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																																																	
	45	42	R15a																																																	
			R3a																																																	
			R5a																																																	
42	40	40	R6a&b																																																	
			R39a																																																	
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 <table><tr><th>Operating Condition</th><th>Measurement Conditions</th><th>Criteria LA1(1 min)</th></tr><tr><td>Locomotive at idle, with compressor radiator fans and air conditioning operating at maximum load</td><td>Stationary 15 metre contour</td><td>70 dB(A)</td></tr><tr><td>All other throttle settings under self-load, with compressor radiator fans and air conditioning operating at maximum load</td><td>Stationary 15 metre contour</td><td>87 dB(A) 95 dB(Lin)</td></tr><tr><td>All service conditions</td><td>Up to 50 kilometres per hour, 15 metres from centreline of rail track</td><td>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</td></tr></table> Note: All measured noise levels must be assessed for tonality in accordance with the NSW Industrial Noise Policy, unless otherwise specified.	Operating Condition	Measurement Conditions	Criteria LA1(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	Compliant	Rail noise monitoring was undertaken during the reporting period. Overall noise levels (LAeq and Leq) were compliant.																																						
Operating Condition	Measurement Conditions	Criteria LA1(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																																																		
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.	Compliant	No requests for noise mitigation were received during the reporting period.
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. <i>Note: This program must expressly monitor the modifying factors referred to in the NSW Industrial Noise Policy (such as intermittency, tonality and low frequency)</i>	Non-compliant	An approved Noise Management Plan (Monitoring Program) is in place. Monitoring for R39a was not being undertaken at the location as specified in the approved NMP.
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.	Compliant	No blasting activities were undertaken.
AIR QUALITY		



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Impact Assessment Criteria																									
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/m³</td></tr><tr><td>Particulate matter < 10 µm (PM₁₀)</td><td>Annual</td><td>30 µg/m³</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 (PM₁₀)</td><td>24 hour</td><td>50 µg/m³</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/m²/month</td><td>4 g/m²/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.	Pollutant	Averaging period	Criterion	Total suspended particulate (TSP) matter	Annual	90 µg/m³	Particulate matter < 10 µm (PM ₁₀)	Annual	30 µg/m³	Pollutant	Averaging period	Criterion	Particulate matter < 10 µm (PM ₁₀)	24 hour	50 µg/m³	Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level	Deposited dust	Annual	2 g/m²/month	4 g/m²/month	Compliant	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 South32 website. No exceedances of criteria recorded for this reporting period.
Pollutant	Averaging period	Criterion																							
Total suspended particulate (TSP) matter	Annual	90 µg/m³																							
Particulate matter < 10 µm (PM ₁₀)	Annual	30 µg/m³																							
Pollutant	Averaging period	Criterion																							
Particulate matter < 10 µm (PM ₁₀)	24 hour	50 µg/m³																							
Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level																						
Deposited dust	Annual	2 g/m²/month	4 g/m²/month																						
Monitoring																									
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.	Compliant	An approved Air Quality and Greenhouse Gas Management Plan is in place and has been implemented.																							
METEOROLOGICAL MONITORING																									
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 <i>Approved Methods for Sampling of Air Pollutants in New South Wales</i>.	Compliant	Weather stations are located at the KVCLF, Dendrobium Pit Top and Ventilation Shaft 2/3 site that generally meet these requirements.																							
WATER MANAGEMENT																									
Discharges																									
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.	Non-compliant	Water quality monitoring is undertaken as per the Water Management Plan. An exceedance of the EPL water quality limits for TSS was recorded during the reporting period.																							



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		An uncontrolled release of water from the Kemira Valley Sediment Pond occurred on 10 August 2020. See Section 11 for details.
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 DoI 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.
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 <i>Managing Urban Stormwater: Soils and Construction Manual</i> (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;	Compliant	The Surface Water Monitoring Plan has been included in the Water Management Plan to meet these



Condition of Consent	Status	Comments
(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.		requirements. A summary of the results from the monitoring program is provided in the Annual Review and published in the 14-day report on the South32 website.
Surface and Ground Water Response Plan		
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.	Compliant	The Surface and Ground Water Response Plan has been included in the Water Management Plan to meet these requirements.
LANDSCAPE MANAGEMENT		
Rehabilitation		
18. The Applicant must rehabilitate the surface facilities sites to the satisfaction of DRG. For rehabilitation works within the Metropolitan Special Area, the Applicant must also ensure that these works are carried out to the satisfaction of WaterNSW.	Compliant	A Mining Operations 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.
Landscape Management Plan		
19. The Applicant must prepare and implement a Landscape Management Plan for the surface facilities to the satisfaction of the Secretary and the DRG. This plan must: (a) be submitted for approval by 30 April 2009; (b) be prepared by suitably qualified expert/s whose appointment/s have been endorsed by the Secretary; (c) be prepared in consultation with OEH and WaterNSW; and (d) include a: - Rehabilitation Management Plan; and - Mine Closure Plan. The Applicant must implement the Landscape Management Plan as approved by the Secretary. <i>Note: The Mine Closure Plan may be submitted 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.</i>	Compliant	An approved Landscape Management Plan is in place and is being progressively implemented.
Rehabilitation Management Plan		
20. The Rehabilitation Management Plan must include: (a) the rehabilitation objectives for the surface facilities sites; (b) a general description of the short, medium and long term measures that would be implemented to rehabilitate these sites;	Compliant	The Rehabilitation Management Plan has been included in the



Condition of Consent	Status	Comments
(c) performance and completion criteria for the rehabilitation of these sites; (d) a description of how the performance of the rehabilitation works would be monitored over time to achieve the stated objectives and against the relevant performance and completion criteria; (e) any measures necessary to ensure that abandoned mine workings do not impact on stored waters or dams; and (f) details of who is responsible for monitoring, reviewing and implementing the plan.		Landscape Management Plan.
Mine Closure Plan		
21. The Mine Closure Plan must: (a) be prepared in consultation with the affected councils and CCC; (b) define the objectives and criteria for mine closure; (c) investigate options for the future use of the surface facilities sites; (d) include the proposed management and use of any heritage-listed buildings; (e) investigate ways to minimise the adverse socio-economic effects associated with mine closure, including reduction in local and regional employment; (f) describe the measures that would be implemented to minimise or manage the on-going environmental effects of the development; and (g) describe how the performance of these measures would be monitored over time.	Compliant	A summary of the Conceptual Mine Closure Plan is provided in the Landscape Management Plan. A Conceptual Site Closure Plan (as a separate document) 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.
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	An approved Traffic Management Plan is in place and 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 work at the Applicant's cost. Any dispute over implementation of this condition is to be referred to the Secretary for resolution.	Compliant	A Maintenance Agreement for Stones Road is in place, dated 28 August 2019.



Condition of Consent	Status	Comments
VISUAL		
Visual Amenity		
28. The Applicant must minimise the visual impacts of the surface facilities to the satisfaction of the Secretary.	Compliant	A vegetative screen is maintained around the operation.
Lighting Emissions		
29. The Applicant must: (a) ensure that all external lighting associated with the surface facilities complies with <i>Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting</i> ; (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.	Compliant	An approved Lighting and Visual Amenity Management Plan is in place. New lighting has been reviewed and modified where possible to minimise offsite impacts.
WASTE		
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.	Compliant	Waste volumes are monitored. A summary of waste management activities associated with Dendrobium Mine is reported via the Annual Review.
SCHEDULE 5: SPECIFIC ENVIRONMENTAL CONDITIONS - OTHER SITE COMPONENTS		
COAL WASHERY		
Hot Gas Exhaust Stack Discharges		
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.



Condition of Consent	Status	Comments
		<i>These requirements are reported in the Appin Mine Annual Review.</i>
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. <i>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.</i>
Water Quality Monitoring Program		
5. The Applicant must review its water quality monitoring program for the West Cliff Mine in consultation with EPA and DWE 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. <i>A Water Management Plan is in place for Appin Mine. Consultation is undertaken as required.</i>
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 OEH, DoI and DRG 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. <i>Brennans Creek Diversion Bypass Rehabilitation Plan was submitted to DoP in December 2008. The plan was approved on 9 September 2009.</i>
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.



Condition of Consent	Status	Comments
		<i>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.</i>
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		
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. <i>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.</i> 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. 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	Compliant	Results are reported in the Annual Review



Condition of Consent	Status	Comments
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.		which is publicly available on the South32 website. Monitoring results are provided in the 14-day report that is available on the South32 website. Exceedances of noise impact assessment criteria recorded during the reporting period have been reported to the Department and the relevant landowners as required.
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.



Condition of Consent	Status	Comments
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		
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.	N/A	No written requests have been received by landowners for acquisition.



Condition of Consent	Status	Comments
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 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	Compliant	An approved Environmental Management Strategy is in place and has been implemented.



Condition of Consent	Status	Comments
- 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.		
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: (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.	Compliant	Management Plans are progressively reviewed to meet these requirements.
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	Compliant	Management Plans have been reviewed as required (refer to Section 0). The Management Plan Review log has been maintained.



Condition of Consent	Status	Comments
(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. <i>Note: This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.</i>		
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.	Compliant	An uncontrolled release of water from the Kemira Valley Sediment Pond occurred on 10 August 2020. The PIRMP was activated. Reporting was undertaken as required by this condition.
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.	Compliant	An uncontrolled release of water from the Kemira Valley Sediment Pond occurred on 10 August 2020. Reporting related to the event was undertaken as required by this condition.
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;	Compliant	The Annual Review is submitted to the relevant stakeholders annually as per the requirements. The Annual Review is made available on the South32 website.



Condition of Consent	Status	Comments
(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. 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. <i>Note: This audit team must be led by a suitably qualified auditor and include experts in the fields of a) mine subsidence impacts and remediation and b) stream hydrology and water quality.</i>	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	Compliant	The FY21 IEA report, including the Response to Recommendations,



Condition of Consent	Status	Comments
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.		was submitted to the Department as required. The progress on actions is provided in Appendix 4: Independent Environmental Audit Progress - FY21
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 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.	Compliant	The Dendrobium 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 FY21.
ACCESS TO INFORMATION		
11. Before the commencement of Modification 8 until the completion of all rehabilitation required under this consent, the Applicant must:	Compliant	Approvals, strategies, plans, programs and other documentation is updated on the web site



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



Appendix 4: Independent Environmental Audit Progress - FY21



ITEM NO.	ASSESSMENT REQUIREMENT	COMMENT	AUDIT CLASSIFICATION	RESPONSE / ACTION (RECOMMENDATION)	IMC RESPONSE / TIME FRAME	PROGRESS
Minister's Conditions of consent DA 60-03-2001 (including Modification 8 issued July 2018)						
Sch 2, C12	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.	Environmental awareness training is rolled out to all employees which includes information on the environmental approvals, management of water, storage and handling of hazardous substances and regulatory obligations. Specific training is defined in training matrices. It was noted that the training matrix for the Environment team is not up to date. Training which has been completed has not been recorded in the matrix and training has been assigned for some individuals which is not required. The auditor understands a review of training records is to be undertaken by the end of 2020.	Observation	Maintain training records to ensure employees have received appropriate training.	Review of training matrix has been undertaken. Records to be updated in training system by 31/01/2021	Competencies have been developed and distributed to team members for completion. Item complete 29/01/21. CLOSED
Sch 4, C1	The Applicant must ensure that the noise generated at the surface facilities does not exceed the noise impact assessment criteria in Table 1 at any residence on privately-owned land, or on more than 25% of any privately-owned land. The applicable criteria for any residence not listed in Table 1 shall be the criteria applying at the nearest listed residence. Table 1: Noise impact assessment criteria dB(A)	The following exceedances in noise criteria were reported during the audit period: 20/5/20 exceedance of day time criteria at R6a – not deemed as a non-compliance; 24/2/20 exceedance of day time criteria at R6a – not deemed as a non-compliance; 27/11/19 exceedance of evening criteria at R6a – not deemed as a non-compliance; 11/9/19 exceedance of day time criteria at R6a – deemed a non-compliance; and 13/6/19 exceedance of day and night LAeq(15min) at R6a – not deemed as a non-compliance. Noise levels were assessed in	Non Compliance	Continue to implement all reasonable and feasible noise mitigation measures.	Noted. A directional noise monitoring system is planned to be installed in 2021.	The directional noise monitors have been installed. The software package to interpret data has commenced and will be completed in FY22. OPEN



	Day	Evening	Night					
	LAeq(15 min)	LAeq(15 min)	LAeq(15 min)	LA1(1 min)				
	42	42	38	48				
	41	41	40	50				
	40	40	39	49				
	40	40	37	47				
	37	35	35	45				
Notes: - To determine compliance with the LAeq(15 minute) limit, noise from the development is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the development is impractical, EPA may accept alternative means of determining compliance. - To determine compliance with the LA1(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: - wind speeds of up to 3 m/s at 10 metres above ground level; or - up to 30C/100 m temperature inversion strength for all receivers, plus a 2 m/s source-to-receiver					accordance with the NSW Industrial Noise Policy to determine compliance. The Site received a warning letter from DPIE on 1 November 2019 for failing to make LA1(1min) noise monitoring results publicly available on the company website. IMC have since rectified this issue and made the results available.			



	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 EPA in writing of the terms of this agreement.																												
Sch4, C9	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. <i>Table 4: Long term impact assessment criteria for particulate matter</i> <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/m³</td></tr><tr><td>Particulate matter < 10 µm (PM10)</td><td>Annual</td><td>30 µg/m³</td></tr></table> <i>Table 5: Short term impact assessment criteria for particulate matter</i> <table><tr><th>Pollutant</th><th>Averaging period</th><th>Criterion</th></tr><tr><td>Particulate matter < 10 µm (PM10)</td><td>24 hour</td><td>50 µg/m³</td></tr></table> <i>Table 6: Long term impact assessment criteria for deposited dust</i> <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/m²/month</td><td>4 g/m²/month</td></tr></table> <i>Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS/NZS 3580.10.1-</i>	Pollutant	Averaging period	Criterion	Total suspended particulate (TSP) matter	Annual	90 µg/m³	Particulate matter < 10 µm (PM10)	Annual	30 µg/m³	Pollutant	Averaging period	Criterion	Particulate matter < 10 µm (PM10)	24 hour	50 µg/m³	Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level	Deposited dust	Annual	2 g/m²/month	4 g/m²/month	According to the monitoring records and Annual Reviews for the audit period, no air quality exceedances were observed during the audit period. On 25th September 2020, the EPA observed dust emanating from the stockpiles at the DCPD during blustery conditions. The DCPD is operated under an EPL held by BlueScope Steel who received a notice to provide information from the EPA. IMC has provided information to BlueScope in relation to the notice and is awaiting feedback from the EPA. There is no indication that air quality criteria were breached as a result of this incident.	Observation	Await further direction from EPA and implement any actions required.	Advisory Letter received from EPA dated 3/12/2020. No specific further actions required.	CLOSED
Pollutant	Averaging period	Criterion																											
Total suspended particulate (TSP) matter	Annual	90 µg/m³																											
Particulate matter < 10 µm (PM10)	Annual	30 µg/m³																											
Pollutant	Averaging period	Criterion																											
Particulate matter < 10 µm (PM10)	24 hour	50 µg/m³																											
Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level																										
Deposited dust	Annual	2 g/m²/month	4 g/m²/month																										



	<i>2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.</i>					
Sch 4, C12	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.	On 10th August 2020 the sediment dam that collects runoff water from roads, hardstand surfaces and the coal stockpile area at the KVCLF failed, releasing approximately 10 ML of water from the site, which flowed into Brandy and Water Creek. The released water contained suspended coal fines and gravel material from the dam base. Refer to EPL compliance table, Section 3, Condition L1.1	Non Compliance	The release from the sediment dam is currently under investigation by the regulator. Comply with any further direction from the EPA.	Sediment pond has been repaired and follow up monitoring has been undertaken. Review and implement actions from EPA once investigation completed.	The sediment ponds continued to operate as designed. CLOSED
Sch 4, C27	The Applicant must establish an agreement with WCC to share the reasonable costs of maintenance of Stones Road for the life of the development. Prior to decommissioning of the mine, Stones Road must be inspected, to the satisfaction of WCC, and the road restored by the Applicant to a standard not less than its condition prior to the development's approval. If roadworks are not carried out by the Applicant within one month of being informed by WCC that these works are required under the maintenance agreement, WCC shall be entitled to carry out such maintenance work at the Applicant's cost. Any dispute over implementation of this condition is to be referred to the Secretary for resolution.	The Deed with WCC lapsed on 18th May 2018 and was re-signed on 28th August 2019. IMC advised that maintenance on Stones Road is completed and funded by IMC and was undertaken as necessary during the period, despite the Deed being lapsed for a portion of the audit period. The lapsed deed did not impact the provision of maintenance for Stones Rd, therefore an administrative non-compliance has been identified against this condition.	Administrative Non Compliance	Historic NC. No further action required.	Noted	CLOSED
Sch 7, C1	If the results of monitoring required in Schedule 4 identify that the	Notifications of exceedance of noise criteria were provided in writing to the	Observation	Provide monitoring results proactively	IMC to implement	This requirement has



	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.	effected resident as soon as monitoring reports were available during the audit period. Subsequent monitoring was made available on the company website with the affected residents subsequently notified when that had occurred. IMC should notify affected residents of monitoring results prior to publishing on the website.		to the resident prior to release to the website.	system to notify residents of results prior to publication by 31/12/2020.	been incorporated into the Air Quality and Greenhouse Gas Management Plan. CLOSED
Sch 8, C2	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: (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	The Water Management Plan includes contingencies for managing unpredictable impacts and their consequences, however the Air Quality Management Plan does not include a similar contingency section in the event that unpredictable dust impacts occur. IMC should update the Air Quality Management Plan to include a discussion of contingency measures in the event of a significant dust event, however it is noted that air quality monitoring results are consistently below assessment criteria.	Administrative Non Compliance	Include a contingency plan in the Air Quality Management Plan	The Air Quality Management Plan to be reviewed to include contingency plan by 30 June 2021 (pending approval of Dendrobium Mine Extension Project).	The Air Quality and Greenhouse Gas Management Plan has been reviewed and was approved by the Department on 8 June 2021. It includes a section on adaptive management (Section 7.2.2). CLOSED



	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.					
Sch 8, C7	Within three months of commencing an Independent Environmental	The 2017 IEA report was submitted on 22 May 2018. The auditor understands that	Administrative Non	Historic NC. No further action	Noted	CLOSED



	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.	the delay in submitting the report was communicated with DPIE.	Compliance	required		
Sch 8, C 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	The IMC website did not include the following items: ■ Primary Submission (the Dendrobium Project, dated 30 July 2001); ■ Submission in Reply (the Dendrobium Project, undated); ■ Environmental Effects of Subsidence Associated with the Dendrobium Project, prepared by National Environmental Consulting Services and dated August 2001; ■ Modification Application dated 12 February 2002 and supporting information dated 27 January 2002; ■ Modification Application and supporting information dated 24 May 2002 and additional supporting information dated 14 June 2002; ■ Modification Application and Statement of Environmental Effects for the Dendrobium Coal Sizer, prepared by Olsen Environmental Consulting and dated March 2005;	Administrative Non Compliance	Include all the reports required by condition 2 of Schedule 2 of this consent on the website.	Condition 11 of Schedule 8 was included in the Consent with MOD 8 dated 13/07/2018. These documents were not required to be available prior to MOD 8. A link has been provided on the South32 website to the DPIE Major Projects website where documents associated	CLOSED



	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.	■ 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); ■ 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); ■ EA (MOD 7); and ■ EA (MOD 8). IMC was issued with a warning by the Department for not reporting LA1 noise monitoring results on the website during the audit period. This matter was rectified and was isolated in nature and not reflective of a systemic failure to report, therefore an administrative non-compliance has been raised.			with MOD 6, 7 and 8 are available. MOD 5 documents are available on the South32 website.	
Environmental Protection Licence 3241						
L1.1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	According to the Annual Reviews, Annual Returns and the monitoring spreadsheet, there were no instances of exceedances of the applicable water quality limits for any samples collected during the audit period.	Non Compliance	The release from the sediment dam is currently under investigation by the regulator.	As addressed above.	The sediment ponds continued to operate as designed. CLOSED



		On 10 August 2020 the sediment dam that collects runoff water from roads, hardstand surfaces and the coal stockpile area at the Kemira Valley facility failed, releasing approximately 10 ML of water from the site, which flowed into Brandy and Water Creek. The released water contained suspended coal fines and gravel material from the dam base and therefore introduced matter into Brandy and Water Creek. Following the event, IMC immediately commenced mitigation measures, which included diverting all runoff to the buffer dam, monitoring water quality in the receiving waters and investigating the cause of the event. Characterisation of the extent of impacts, if any, of the release on the receiving waterways and potential remedial options have also been undertaken. At the time of the site visit, earth works were being completed to repair and recommission the sedimentation dam. The incident is currently under investigation by the regulator and IMC.				
M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence: a) the date(s) on which the sample was taken; b) the time(s) at which the sample was collected; c) the point at which the sample was taken; and d) the name of the person who collected the sample.	The EPL requires samples be collected for the following monitoring purposes: Monthly dust monitoring at five locations for ash, combustible solids and insoluble solids (Points 6, 9, 13, 17, 18); Monthly ambient air monitoring at two locations for PM10 and TSP (points 20, 21); and Monthly monitoring during discharge at one location for As, Cu, Ni, Zn, oil & grease, pH, TSS and conductivity (point 5).	Administrative Non Compliance	Ensure that the time of collection for each sample is included on sample records, such as the chain of custody.	Chain of Custody forms to be modified to include time sample collected by 31/01/2021.	Forms have been modified as required. CLOSED



		ERM reviewed the spreadsheet that documents the monitoring results for all the locations required by the licence. ERM identified that all the dust, ambient air and water quality samples included the date on which the sample was taken and the point at which the sample was collected. ERM reviewed example chain of custody documentation and confirmed that the name of the person who collected the sample was included on all example documents. The time at which the sample was collected was not observed on the documents available for review, therefore ERM considers IMC non-compliant with the requirements of this condition.				
Consolidated Coal Lease 768						
No compliance findings related to CCL 768						
Mining Lease ML 1510						
25.	The lease holder shall provide and maintain to the satisfaction of the Minister efficient means to minimise contamination, pollution, erosion or siltation of any river, stream, creek, tributary, lake, dam, reservoir, watercourse or catchment area or any undue interference to fish or their environment and shall observe any instruction given or which may be given by the Minister with a view to preventing or minimising the contamination, pollution, erosion or siltation of any river, stream, creek, tributary, lake, dam, reservoir, watercourse or catchment area or any undue interference to fish or their environment.	On 10th August 2020 the sediment dam that collects runoff water from roads, hardstand surfaces and the coal stockpile area at the KVCLF failed, releasing approximately 10 ML of water from the site, which flowed into Brandy and Water Creek. The released water contained suspended coal fines and gravel material from the dam base and therefore introduced matter into Brandy and Water Creek that changed the physical, chemical or biological condition of the water, which potentially constitutes pollution, therefore IMC are not compliant with this condition. Further detail is provided in the EPL table Section 3, Condition L1.1.	Non Compliance	The release from the sediment dam is currently under investigation by the regulator.	As addressed above.	The sediment ponds continued to operate as designed. CLOSED
Mining Lease ML 1566						
No compliance findings related to ML 1566						



Appendix 5: Community Complaints Report - FY21

Dendrobium Mine Community Complaints Report – FY2021

Date	Nature of Complaint	Actions / Follow Up
28/06/2021	Resident contacted the Community Call Line at 1.20 pm to advise a truck turning from Stones Road to Cordeaux Road mounted the corner of their property and knocked over the speed sign and bin. The resident was not upset with the driver, however wished for the incident to be recorded as it was dangerous.	The Community Team contacted Dendrobium Mine at 1.30 pm to advise of the concern and investigate. A truck was confirmed to be in the area at the time of concern and the truck company was contacted about the incident. The speed sign was repaired the following day. The resident did not wish for a call back.
17/06/2021	Grievance 0045671 was registered to manage a resident's ongoing concerns. Related concerns will be investigated and reported monthly under the grievance.	Concerns captured under Grievance 0045671: - 1 related to vehicle noise. A vehicle movement occurred at the reported time and was in line with management plans.
16/06/2021	Resident contacted the Community Team via email at 5.35 am regarding vehicle noise at this time.	The Community Team contacted Dendrobium Mine to advise of the concern and investigate. A Load Haul Dump machine exited from underground at the reported time, within the curfew. The Production Manager and Undermanager followed up with teams to prevent reoccurrence. The resident was provided feedback by return email at 9.00am the same day. No further feedback was received from the resident.
15/06/2021	Resident contacted the Community Team via email at 6.26 pm with details of a vehicle parked on Cordeaux Road. It is alleged the vehicle has parked in this location a few times and the resident would like the vehicle moved and the driver reminded not to park on Cordeaux Road.	The Community Team advised Dendrobium Mine of the concern at 6.30pm. Staff attempted to find the driver and have the vehicle removed as soon as possible. A reminder on parking protocol was issued to staff the following day. The resident was provided feedback by return email at 6.50 pm the same day. No further feedback was received from the resident.
09/06/2021	Resident contacted the Community Team via email at 6.46 am regarding banging heard at that time.	The Community Team contacted Dendrobium Mine immediately. An investigation determined a trailer was being loaded with underground supplies at the time. Shunting the trailer in place would have resulted in banging for about 20 seconds. The resident was provided the outcome by return email at 9.45 am the same day and was requested to respond if the banging heard lasted longer than the short period. No further feedback was received.
04/06/2021	Resident contacted the Community Team via email at 6.18 am to advise the Dendrobium Community Consultative Committee April meeting minutes were not on the South32 website. The resident believed Illawarra Metallurgical Coal was deliberately delaying the share of information to keep issues secret.	The Community Team investigated promptly. The Dendrobium Community Consultative Committee April meeting minutes were uploaded to the website in April, however were not displaying. The website developer was contacted to rectify the issue. The resident was provided an update by return email at 8.30 am the same day, and was also provided a copy of the April meeting minutes. No further feedback was received from the resident.

04/06/2021	Resident contacted the Community Team via email regarding banging, clattering and vehicle noise between 5.39 am and 5.45 am.	Dendrobium Mine investigated the same morning and determined a bus exited underground at 5.40 am as part of usual shift change activities. No other activities or vehicle movements occurred at Dendrobium Mine within the reported time of concern. Staff vehicles parking at the site may have resulted in bangs and clattering however this could not be verified. Resident provided information at 9.50 am by return email the same day. No further feedback was received.
03/06/2021	Resident contacted the Community Team via email regarding banging and clattering noise at 6.00 am.	Dendrobium Mine investigated immediately and determined normal shift change activities were underway. No machinery was operating at the site until 6.15 am as per the Noise Management Plan. Resident provided information at 7.30 am by return email. No further feedback was received.
01/06/2021	Resident contacted the Community Team via email regarding the use of horns at Dendrobium Mine.	The Community Team contacted Dendrobium Mine to advise of the concern and investigate. A truck delivering equipment to the mine used its horn at the reported time. The driver was reminded of the horn use policy almost immediately after the event. The resident was provided the outcome of the investigation by return email at 10.20 am the same day. No further feedback was received.
01/06/2021	Resident contacted the Community Team via email at 9.15 am regarding the continuous use of reverse alarms.	The Community Team contacted Dendrobium Mine to advise of the concern and investigate. A review of all reverse alarms on permanent vehicles was completed the following week to check low frequency reverse alarms were fitted. Non-permanent vehicles, such as contractor vehicles, are not required to have low frequency alarms. Understanding this can be of nuisance, contractors were requested to carpool to site to reduce the number of vehicles reversing at the site. The resident was provided an initial response to the concern by return email at 10.00 am the same day. The resident provided further advice that high pitch reverse alarms were audible at 5.36 pm the same day, and between 6.14 am and 7.00 am on 3 June. The outcome of the reverse alarm review was shared with the resident on 10 June – 3 permanent vehicles required new alarms to be installed. A six-monthly review of alarms was scheduled. No further feedback was received from the resident.
30/05/2021	Resident contacted the Community Team via email at 5.14 am regarding the use of a reversing alarm.	The Community Team contacted Dendrobium Mine to advise of the concern and investigate. It was determined there were no vehicle movements at the mine at the time of concern, however staff were arriving in private vehicles and parking. It is likely a private vehicle parking had a reverse alarm. Dialogue with contractors regarding reverse alarms on staff vehicles travelling to the mine is ongoing. The resident was provided the outcome of the investigation by return email at 9.15 am the same day. No further feedback was received.

28/05/2021	Resident contacted the Community Team via email at 6.47 am regarding a loud reversing alarm at 6.45 am.	The Community Team contacted Dendrobium Mine to advise of the concern and investigate. A drift runner reversed on Portal Road at the reported time. This movement was inline with the Noise Management Plan - the vehicle was fitted with a low frequency reversing alarm and the movement occurred within allowable times. The resident was provided feedback by return email the same day, and no further information was received.
27/05/2021	Resident contacted the Community Team via email at 5:47 am regarding vehicle noise at 5:45 am. The resident sent a follow up email noting the noise was still audible at 6.15 am.	The Community Team contacted Dendrobium Mine to advise of the concern and investigate. It was determined a Load, Haul, Dump machine and drift runner exited the mine at the time of concern. The Undermanager and drivers were contacted to understand their requirements and mitigate the issue moving forward. The resident was provided the outcome of the investigation by return email. No further feedback was received.
21/05/2021	Resident contacted the Community Team via email at 5:54 am regarding reversing alarms.	The Community Team contacted Dendrobium Mine to advise of the concern and investigate. It was determined several contractors travelled to and parked in the mine carpark. Dialogue with contractors regarding reverse alarms on staff vehicles travelling to the mine is ongoing. The resident was provided the outcome of the investigation by return email. No further feedback was received.
20/05/2021	Resident contacted the Community Team via email at 3:43 pm regarding a delivery to site during non-allowable travel times.	The Community Team contacted Dendrobium Mine to advise of the concern and investigate. It was confirmed a delivery was received by Dendrobium Mine at the time of concern, and the delivery driver did not usually deliver to Dendrobium Mine and was unaware of the Dendrobium Mine Drivers Code of Conduct. The delivery company and driver were reminded about the Code of Conduct. The resident was provided the outcome by return email. The resident advised of their dissatisfaction with allowing the truck to enter site.
20/05/2021	Resident contacted the Community Team via email at 3:54 am and 4.09 am regarding vehicle movements at 3:53 am and 4:09 am.	The Community Team contacted Dendrobium Mine to advise of the concern and investigate. It was determined Load, Haul, Dump machines were operating to complete critical operational activities. This included travelling along Portal Road in preparation to enter the mine between 4.05 am and 4.10 am. The Undermanager and drivers were reminded to keep movements to a minimum. The resident was provided the outcome by return email. No further feedback was received.

19/05/2021	Resident contacted the Community Team via email at 6:23 am regarding reversing alarms.	The Community Team contacted Dendrobium Mine to advise of the concern and investigate. It was determined the reversing alarms were associated with maintenance contractor vehicles arriving and reverse parking at Dendrobium Mine. These vehicles did not enter the mine for work. Liaison with contractors is ongoing to understand what measures are possible given the vehicles attend other work sites where the reverse alarm is required. The resident was provided the outcome by return email. The resident lodged additional concerns around reversing alarms at 1:23 pm and 1:25 pm the same day.
17/05/2021	Resident contacted the Community Team via email at 7:54 am regarding the personnel mini bus allegedly exceeding 40 km/h speed limit on Cordeaux Road at 7:50 am when leaving Dendrobium Mine Pit Top.	The Community Team contacted Dendrobium Mine to advise of the concern and investigate. It was determined the bus driver was in third gear using the exhaust brakes which reaches a top speed of ~45 km/h. There is no tracker installed on the mini bus to verify this detail. The resident was provided the outcome of the investigation. No further feedback was received.
15/05/2021	Resident contacted the Community Team via email at 7:01 am regarding train squeal at 6:56 am.	The Community Team contacted the logistics team to advise of the concern and investigate on 17 May. A roll by of the locomotive and wagons was completed 17 May with nothing unusual reported. On 18 May in-field observations were conducted alongside Cordeaux Road on all 3 trains with nothing irregular noted. The sound files from the noise monitor were not available on 15 May due to a technical glitch. The receipt of the concern was acknowledged within 24 hours and the outcome shared with the resident on 31 May. No feedback was received from the resident.
12/05/2021	Resident contacted the Community Team via email at 5:51 am regarding loud vehicle noise.	The Community Team contacted Dendrobium Mine to advise of the concern and investigate. It was determined a vehicle exited Portal Road for a service. The resident was provided the outcome of the investigation. No further feedback was received.
07/05/2021	Resident contacted the Community Team via email at 5:22 am regarding loud vehicle noise.	The Community Team contacted Dendrobium Mine to advise of the concern and investigate. It was determined a vehicle carrying a pipe trailer was travelling on Portal Road. The resident was provided the outcome of the investigation. No further feedback was received.
04/05/2021	Resident contacted the Community Team via email to advise of vehicle noise at 5.55 am. A second email was sent the same day regarding a horn at 6.11 am.	The Community Team contacted Dendrobium Mine to advise of the concern and investigate. A vehicle exited the mine and parked outside the underground entrance until 6.15 am when it proceeded to travel on Portal Road within allowable travel times as per the Noise Management Plan. The source of the horn could not be found. Feedback was provided to the resident by return email the same day. No further feedback was received.

28/04/2021	Resident contacted the Community Team via email at 1:42 pm regarding coal dust at the property.	The Community Team contacted the resident the next day to advise IMC are currently collecting dust samples from neighbouring properties with results pending. The resident had samples previously taken at the property which determined the majority of the dust to be organic matter. The resident will be updated if any further information becomes available. No further information was received from the resident.
24/04/2021	Resident contacted the Community Team via email regarding train squeal at 5:13 pm.	The Community Team contacted the logistics team immediately and an investigation was completed. The resident was informed that the noise file was reviewed and minor noise from train movement was recorded, however, nothing excessive or reportable. The resident was provided an update on past and current noise mitigation implementations for the rail line. No further information was received from the resident.
20/04/2021	Resident contacted the Community Team via email on ten different occasions from 12:33 pm regarding a consistent loud squealing noise from the Pit Top.	The Community Team contacted the resident immediately to advise that a notification regarding the use of air horns on site would be used to test and calibrate the noise monitors. This notification went out to all residents prior to the event taking place. Upon further investigation the resident did not receive the emailed notification due to an IT issue and the resident was advised of this and an investigation took place into the IT issue. The resident would like the complaint and dissatisfaction of the error recorded.
16/04/2021	Resident contacted the Community Call Line at 8:12 am regarding high pitched squealing from a train on numerous dates throughout March and April.	The Community Team contacted the logistics team immediately and an investigation was completed. The resident was informed of the investigation and that the noise files was reviewed and minor noise from train movement was recorded, however, nothing excessive or reportable. IMC will continue to monitor the train line for any further improvements. The resident will continue to update the Community Team with any additional noise concerns.
6/04/2021	Resident contacted the Community Team via email at 5:55 am regarding loud clattering vehicle noise at 5:19 am.	The Community Team contacted Dendrobium Mine to advise of the concern. An investigation was completed and determined that at 5:19 am a machine exited underground with a flatbed trailer loaded with material for delivery to the warehouse. This is not usual timing and was reported to the Undermanager. Feedback on the investigation outcome was provided to the resident, and no further information was received from the resident.
2/04/2021	Resident contacted the Community Team via email at 5:55 am regarding alleged speeding vehicles associated with the Mine site.	The Community Team contacted the resident to advise a start of shift communication went out to all staff to remind them of the Dendrobium Drivers Code of Conduct and general road safety. However, without specific information around times and/or registration it is difficult to determine any alleged speeding vehicles that may or may not be associated with the Mine. The resident was requested to try and provide some more specific details should they feel a vehicle is speeding so the source of the complaint can be resolved and mitigate the issue moving forward. No further information was received from the resident.

2/04/2021	Resident contacted the Community Team via email at 5:53 am regarding loud vehicle noise from 5:30 am.	The Community Team contacted Dendrobium Mine to advise of the concern. An investigation was complete and determined that at 5:33 am a drift runner unloaded rubbish into the bins for roughly 10 minutes. This is not usual practice and a reminder was provided to all staff about following the Noise Management Plan. No further information was received from the resident.
1/04/2021	Resident contacted the Community Team via email at 5:52 am regarding loud grinding vehicle noise from 5:30 am.	The Community Team contacted Dendrobium Mine to advise of the concern. An investigation was completed and it was determined that shift changeover would have occurred after 5:30 am which would have attributed to some surface movement. It was also confirmed that at 5:53 am a vehicle exited the mine with a trailer attached, travelling along Portal Road. This is not usual timing and was reported to the Undermanager. No further information was received from the resident.
25/03/2021	Resident contacted the Community Call Line at 7:14 am regarding screeching noise at the Mine on 15/03/2021 at 7:45 pm.	The Community Team contacted the resident via email as requested to confirm complaint details. The complaint was regarding screeching noise at the Mine a week prior, however it is believed this may have been in relation to noise from a train. The resident did not respond, and a follow up call was made to which a response was also not received. Due to the insufficient information available the Community Team were unable to identify the source of the noise either at the mine site or train tracks, however the Mine and logistics team are aware of the concern.
9/03/2021	Resident contacted the Community Call Line at 9:23 am regarding a screeching train on 08/03/2021 at 1.19 pm.	The Community Team contacted the logistics team immediately and an investigation was completed. Investigation determined a low squeal and on occasion found evidence of wheel squeal on both locomotive and wagons. This train will be monitored, and an internal investigation will continue. The resident will continue to report any notable squealing trains to assist with investigations.
1/03/2021	Resident contacted the Community Call Line at 7:25 am regarding high pitched squealing from a train on 27/02/2021, 28/02/2021 and 01/03/2021.	The Community Team contacted the logistics team immediately and an investigation was completed. Investigation determined a low squeal on occasion from Bushell's Hill tunnel. IMC installed two top of rail friction modifiers during an outage at the end March to assist in mitigating rail noise issues. IMC is also looking to engage another rail interface/lubrication expert to review this again over the coming months. The resident will continue to report any notable squealing trains to assist with investigations.
28/02/2021	Resident contacted the Community Call Line at 6:10 am regarding rail curfew times.	The Community Team contacted the resident immediately and advised train times are 6 am-11 pm. The resident suggested the trains seem louder than usual since December 2020 and was thankful for the call back. Illawarra Metallurgical Coal's logistics team will continue to monitor the train line.

28/02/2021	Resident contacted the Community Call Line at 3:27 pm regarding loud banging noise. The resident requested feedback by email.	The Community Team contacted Dendrobium Mine immediately and an investigation was completed and determined rubbish was being loaded into a bin. This resulted in the ongoing loud banging and the activity ceased not long after 3.30 pm. The resident was provided information by email and no further feedback was received.
22/02/2021	Resident contacted the Community Call Line at 5.09 pm regarding high pitched squealing from a train at 9.24 pm on 21/02/2021.	The Community Team contacted the logistics team immediately and an investigation was completed. The train in question was identified and inspected with no issues found. Noise monitoring of rail movements at 8.25 pm and 9.30 pm was completed and no issues were identified. Noise monitoring of rail movements on the morning of 23/02/2021 was also completed with some flange noise detected from the locomotive. The resident was contacted by phone on 23/02/2021 and provided the outcome of the investigation, noting investigations were ongoing. The resident advised the squealing had started recently and it was not consistent. They recognised the good work completed previously on the brake shoe upgrade to reduce squealing and hoped that the business would find a solution to the most recent squealing issue. The resident will continue to report the loud squealing trains to assist with investigations.
21/02/2021	Resident contacted the Community Call Line regarding loud noises from the Dendrobium Mine pit top at 9.30 pm. The resident requested feedback to be provided by email.	The Community Team contacted Dendrobium Mine immediately and an investigation was completed. Loading activities were underway at the time of concern and were complete by approximately 9.40 pm. The activities were part of regular shift change activities (however were originally planned to occur during the day - there was a change in the schedule). The resident was provided the detail of the outcome of the investigation by email at 9.50 pm. No further feedback was received from the resident.
19/02/2021	Resident contacted the Community Team via email regarding vehicle noise at 5.55 am. Noise included banging and clanging.	The Community Team contacted Dendrobium Mine the same day to advise of the concern. An investigation was completed and determined a machine was travelling on the Portal Road at the time of concern. Relevant mine staff were advised of the machine movement prior to the curfew of 6.15 am. Feedback was provided to the resident via email the same day. No further feedback was received from the resident.
18/02/2021	Resident contacted the Community Team via email at 10.21 pm regarding vehicle noise from 10.00 pm, with a reversing alarm heard at 11.12 pm.	The Community Team contacted Dendrobium Mine the same night to advise of the concern. An investigation was completed and determined that shift change activities were occurring until approximately 11.30 pm. Due to extended pre-shift communications and staggered shift starts in place as a COVID-19 control, the shift change activities went for longer than usual. Feedback was provided the following day to the resident by return email. It was also noted the resident had also contacted the mine directly to discuss the vehicle movements at 10.21 pm and the resident was reminded to contact the Community Call Line in future. No further feedback was received from the resident.

17/02/2021	Resident contacted the Community Team via email regarding vehicle noise at 5.10 am.	The Community Team advised Dendrobium Mine of the concern the same day and an investigation was completed. The investigation identified a machine exiting the mine at 5.08 am to be parked in the yard at 5.10 am. Feedback was provided to the resident by return email the same day. The resident contacted the Community Team by phone later the same day to discuss the ongoing issue of vehicle movements at the pit top during the night, requesting actions be expedited to manage the ongoing concern.
16/02/2021	Resident contacted the Community Team via email regarding vehicle noise at the pit top from 6.04 am - 6.15 am at 6.15 am.	The Community Team advised Dendrobium Mine of the concern the same day and an investigation was completed. A Load Haul Dump machine exited the mine with a pipe trailer at 6.04 am and travelled toward the warehouse. This activity should not have occurred prior to 6.15 am. Other vehicle movements during the reported time were associated with usual shift change activities. The Load Haul Dump machine operator was advised of the incorrect action on the following shift. Feedback was provided to the resident by return email the same day. No further feedback was received from the resident.
12/02/2021	Resident contacted the Community Team via email regarding a speeding truck on Cordeaux Road at 4.18 pm.	The Community Team advised Dendrobium Mine immediately. It was noted this was the same truck that was reported to have travelled to the site outside the allowable travel times in the Dendrobium Drivers Code of Conduct at approximately 4 pm the same day. The driver had been reminded of the speed limit just prior to exiting the site. The truck was not fitted with a GPS tracking system, so the speed could not be verified. Feedback was shared with the resident by return email. No further feedback was received.
12/02/2021	Resident contacted the Community Team via email regarding a truck movement on Cordeaux Road outside the allowable travel times as identified in the Dendrobium Drivers Code of Conduct. The truck entered Dendrobium Mine pit top at approximately 3.56 pm.	The Community Team had been contacted proactively by staff at Dendrobium Mine at 3.58 pm to advise a truck had arrived outside the allowable travel times of the Dendrobium Drivers Code of Conduct. Staff identified the driver visited the site often and was aware of the Code. The driver had been waiting outside the village until 4 pm to travel to site, however the truck clock was incorrect which meant he was travelling at the incorrect time. Feedback was shared with the resident by return email. No further feedback was received.
11/02/2021	Resident contacted the Community Team via email at 6:02 am regarding loud banging at 6:01 am.	The Community Team advised Dendrobium Mine of the concern the same day and an investigation was completed. The source of the noise was determined to be two supply loaders (machinery on tracks) exiting the mine. The loaders waited at the entrance on Portal Road until the correct time to commence loading materials. The Undermanager was made aware and discussed the timing and process with the drivers. No further feedback was received from the resident.
10/02/2021	Resident contacted the Community Call Line regarding train noise on 9/10/2021 at approximately 8.30 pm - 9.00 pm.	The Community Team advised the logistics team of the concern the same day and an investigation was completed. The cause of the noise was not able to be determined. The resident was advised of the outcome and no further feedback has been received.

9/02/2021	Resident contacted the Community Team via email at 10:36 am regarding speeding cement truck at 7:36 am.	The Community Team advised Dendrobium Mine of the concern the same day and an investigation was completed. The trucking company, Holcim, were unable to download the speed data for the truck in question. The concern could not be verified. The resident advised they do not require tracking data as they know the truck was speeding.
8/02/2021	Resident contacted the Community Call Line at 8:20 am regarding excessive rail noise.	The Community Team advised the logistics team of the concern the same day and an investigation was completed. The cause of the noise was not able to be determined. The issue will continue to be monitored. The resident was advised of the outcome and no further feedback has been received.
8/02/2021	Resident contacted the Community Team via email at 6:15 am regarding horn use on site at 6:14 am during curfew.	The Community Team advised Dendrobium Mine of the concern the same day and an investigation was completed. The investigation determined the horn use at 6:14 am was attributed to shift change activities. The horn was used to positively communicate with the surface equipment operators to ensure they were aware that the underground machines would be briefly passing through the work area. The resident was provided the details by return email. No further feedback was received from the resident.
5/02/2021	Resident contacted the Community Call Line at 11:02 am regarding excessive noise at the pit top.	The Community Team advised Dendrobium Mine of the concern the same day and an investigation was completed. The investigation determined the noise to be associated with Portal Road upgrades. A notification was provided to the resident on 3 February regarding the road works 5-6 February. The resident contacted the Community Call Line on Saturday 6 February to advise the noise was ongoing. It was confirmed that the source of the noise was the upgrades at Portal Road. No further information was received from the resident.
5/02/2021	Resident contacted the Community Team via email at 10:05 pm regarding vehicle movement on site at 10:05 pm during curfew.	The Community Team advised Dendrobium Mine of the concern the next day and an investigation was completed. The investigation determined vehicle noise at 10:05 pm was attributed to a supply loader entering Portal Road mine entrance. This is a business as usual activity which had a 5-minute delay finishing the delivery, taking it 5 minutes past curfew. The outcome of the investigation was provided to the resident. No further feedback was received from the resident.
5/02/2021	Resident contacted the Community Team via email at 9:06 am regarding a truck travelling on Cordeaux road at 9:00 am.	The Community Team advised Dendrobium Mine of the concern the same day and an investigation was completed. The contracted company confirmed its driver was familiar with the Dendrobium Drivers Code of Conduct and allowable travel times. A written warning was provided to the driver. Further investigation found that the exit boom gate opened automatically when the truck approached to exit, rather than the driver manually requesting it be opened. An additional control was installed on the boom gate to prevent the same event occurring. The outcome of the investigation was provided to the resident. No further feedback was received from the resident.

4/02/2021	Resident contacted the Community Team via email at 5:56 am, 5:58 am and 6:02 am regarding vehicle noise and movement.	The Community Team advised Dendrobium Mine of the concern the same day and an investigation was completed. The investigation confirmed that an empty supply loader exited the mine with a trailer attached. It is understood this movement along Portal Road and in conjunction with a drift runner for change of shift would have attributed to the noise. Staff were reminded to limit vehicle movements during curfew. The resident was provided the outcome of the investigation. No further feedback was received from the resident.
2/02/2021	Resident contacted the Community Team via email at 1.00 pm regarding the Dendrobium Mine Extension Project and concern of the proposed car park on Cordeaux Road.	The Community Team advised the resident it will continue to keep all residents updated when more information is available regarding the proposed carpark. The resident was provided details on current engagement and further information on the Dendrobium Mine Extension Project. No further feedback was received from the resident.
1/02/2021	Resident contacted the Community Team via email regarding vehicle movement and resulting noise at 11.05 pm.	The Community Team advised Dendrobium Mine of the concern the following morning and an investigation was completed. The reported vehicle noise was associated with a supply loader entering Portal Road. The Undermanager was advised, and an internal investigation was completed. The resident was advised of the outcome by return email at 1.34 pm 2/2/2021. No further feedback was received from the resident.
30/01/2021	Resident contacted the Community Team via the Community Call Line at 4.30 pm regarding loud banging and engine noise from the Pit Top.	The Community Team advised Dendrobium Mine of the concern and an investigation was completed. The investigation confirmed a number of vehicles were exiting the mine from 4.00 pm which is the likely source of the engine noise. A team were also unloading rubbish by hand from a vehicle on Portal Road from about 4.00 pm which would have resulted in additional noise. No other activities were taking place at the time of concern. The resident was provided feedback by return email as requested the same day. The resident responded noting that noise will continue to be an issue from the Pit Top.
29/01/2021	Resident contacted the Community Team via email regarding vehicle movements and noise at 6.05 am.	The Community Team advised Dendrobium Mine of the concern and an investigation was completed. The investigation confirmed a forklift had commenced work near the warehouse. The warehouse staff were made aware of the concern and reminded to restrict movements prior to 6.15 am. The resident was provided a response by return email at 3 pm the same day. No further feedback was received from the resident.
25/01/2021	Resident contacted the Community Team via email regarding a potential speeding truck on Cordeaux Road at 2:08 pm.	The Community Team advised Dendrobium Mine of the concern and an investigation was completed. The truck was not fitted with a GPS tracker, so the speed cannot be verified. The truck driver advised they were aware of the Dendrobium Drivers Code of Conduct and were not speeding. No further information was received from the resident.

24/01/2021	Resident contacted the Community Team via email regarding vehicle movements at 6:05 am and 10:15 pm.	The Community Team advised Dendrobium Mine of the concern and an investigation was completed. CCTV confirmed a vehicle was on Portal Road in line with shift change at 6:05 am. At 10:15 pm a supply loader was scheduled to collect material prior to 10:00 pm curfew, however due to delays with loading material, the vehicle was 15 minutes late leaving Portal Road. During the curfew surface vehicle movements are minimised where possible except where required for safety, emergency reasons or change of shifts. No further information was received from the resident.
24/01/2021	Resident contacted the Community Team via email at 6:45 am regarding a reversing alarm at 6:44 am.	The Community Team advised Dendrobium Mine of the concern and an investigation was completed. CCTV confirmed there were no vehicles within the warehouse or Portal Road outside of business as usual activities. The CCTV footage did not identify the use of a reversing alarm. The alarm may have been used as part of shift change. No further information was received from the resident.
24/01/2021	Resident contacted the Community Team via email at 6:41 am regarding horn use at 6:39 am.	The Community Team advised Dendrobium Mine of the concern and an investigation was completed. CCTV confirmed there were no vehicles within the warehouse or Portal Road outside of business as usual activities. The CCTV footage did not identify use of a horn. The horn use may have been used as part of shift change. No further information was received from the resident.
23/01/2021	Resident contacted the Community Team via email at 3:10 pm regarding the Dendrobium Mine Extension Project and proposed carpark objection.	The Community Team advised the resident that additional information was not available on the proposal until a decision on the Dendrobium Mine Extension Project was provided. The resident's feedback was provided to the Project team for consideration. No further information was received from the resident.
23/01/2021	Resident contacted the Community Team via email at 2:38 am regarding a vehicle movement at 2:37 am.	The Community Team advised Dendrobium Mine of the concern and an investigation was completed. Investigation via CCTV confirmed a supply loader did come onto the surface to collect supplies. The resident was advised, and no further information was received from the resident.
19/01/2021	Resident contacted the Community Team via email at 10:59 pm regarding the Dendrobium Mine Extension Project and proposed carpark objection.	The Community Team advised the resident Illawarra Metallurgical Coal will continue to keep all residents updated when more information is available regarding the proposed carpark. The resident was provided details on current engagement and further information on the Dendrobium Mine Extension Project. The resident's feedback was shared with the Project team. The resident requested additional information on the Project and a response was provided the same day.
18/01/2021	Resident contacted the Community Team via email at 10:59 am regarding a potential speeding truck leaving the Pit Top at 10:58 am.	The Community Team advised Dendrobium Mine of the concern and an investigation was completed. The investigation confirmed the truck was contracted by Ledacon which are not equipped with GPS tracking data to validate the speed. Ledacon's fleet is being upgraded to have the systems installed. Follow up occurred with the driver and company. No further information was received from the resident.

18/01/2021	Resident contacted the Community Team via email at 10:39 pm regarding the Dendrobium Mine Extension Project and proposed carpark objection.	The Community Team advised the resident Illawarra Metallurgical Coal will continue to keep all residents updated when more information is available regarding the proposed carpark. The resident was provided details on current engagement and further information on the Dendrobium Mine Extension Project. The resident's feedback was shared with the Project team. The resident requested additional information on the Project and a response was provided the same day. More details will be provided to the resident when it is available.
18/01/2021	Resident contacted the Community Team via email at 7:00 pm regarding the Dendrobium Mine Extension Project and proposed carpark objection.	The Community Team advised the resident Illawarra Metallurgical Coal will continue to keep all residents updated when more information is available regarding the proposed carpark. The resident was provided details on current engagement and further information on the Dendrobium Mine Extension Project. The resident's feedback was shared with the Project team for consideration. The resident was contacted by phone and requested to be provided more information when it was available.
16/01/2021	Resident contacted the Community Team via the Community Call Line at 2.39 pm regarding mechanical and engine noise coming from the Pit Top.	The Community Team advised Dendrobium Mine of the concern immediately and an investigation was completed. An empty Loader exited the mine at 2.37 pm. Other surface activities at the time of concern was a forklift moving small parts in the yard. Feedback was provided to the resident via email at 3.00 pm, with a request to advise if the noise has continued beyond the Loader movement. No further information was received from the resident.
15/01/2021	Resident contacted the Community Team via email at 10:34 pm regarding the environmental report associated to Brandy and Water Creek.	The Community Team responded the same day advising the concern was received. The Community Team responded the next day with an update on the environmental report and subsequent reports. No further information was received from the resident.
15/01/2021	Resident contacted the Community Team via email at 7:58 am regarding proposed plans to establish a permanent car park opposite the Pit Top.	The Community Team advised the resident Illawarra Metallurgical Coal will continue to keep all residents updated when more information is available regarding the proposal. The resident was provided a letter that was distributed to some residents on 14 January 2021 with further information. No further feedback was received from the resident.
15/01/2021	Resident contacted the Community Team via email at 10.53 pm regarding vehicle noise at the Pit Top at 5:38 am and 10.51 pm.	The Community Team advised Dendrobium Mine of the concern the following morning and an investigation was completed. The investigation confirmed via CCTV an empty supply loader was moved to Portal Road in preparation of loading material after curfew. The additional movement at 10:51 pm is attributed to a Drift Runner and Loader entering the mine. The Drift Runner was operating as part of Shift Change processes, however it was unclear why the Loader was operating at the time and further information was sought from the Undermanager. The resident was provided feedback by return email at 9.00 am and 2.50 pm. No further information was received from the resident.

14/01/2021	Resident contacted the Community Team via email at 3:20 pm regarding proposed plans to establish a permanent car park opposite the Pit Top.	The Community Team responded to the resident the same day advising the proposed car park is part of the Dendrobium Mine Extension Project which is currently pending government approval. Designing of the proposed car park is yet to commence, however Illawarra Metallurgical Coal plan to minimise the environmental impact of the car park, including that of the waterways. The residents' feedback was shared with the Project team for its consideration at the right time. No further feedback was received from the resident.
14/01/2021	Resident contacted the Community Team via email at 3:19 pm regarding proposed plans to establish a permanent car park opposite the Pit Top.	The Community Team advised the resident that Illawarra Metallurgical Coal will continue to keep all residents updated when more information is available regarding the proposal. The resident was provided a letter that was distributed to some residents on 14 January 2021 with further information. No further feedback was received from the resident.
13/01/2021	Resident contacted the Community Team via email four times to advise of vehicle noise at 5.48 am, 10.02 pm, 12.05 am and 12.48 am.	The Community Team advised Dendrobium Mine of the concern and an investigation was completed. The Community team requested additional information from the resident regarding timing, however, no response was received. After further investigation, CCTV footage did not identify any vehicle movements around the time of the resident's email at 10:00 pm. CCTV footage confirmed a supply loader exited the mine to collect emergency material and returned underground within the hour at 12:05 am. The Undermanager was made aware of the movement and staff are aware to keep movements to a minimum unless essential. The resident was advised, and no further feedback was received.
12/01/2021	Resident contacted the Community Team via email at 5:30 pm regarding vehicles parked along Cordeaux Road in front of resident's property.	The Community Team advised Dendrobium Mine of the concern immediately to find the owners of the vehicles. Numerous communications were shared with staff however the owners were not identified. The vehicles were moved in the evening and an urgent communication was sent to all staff to remind them to only park in signed Dendrobium Mine car spaces. No further feedback was provided by the resident.
11/01/2021	Resident contacted the Community Team via email at 10:20 am regarding vehicle noise and material handling at 10:17 pm.	The Community Team advised Dendrobium Mine of the concern immediately and an investigation was completed. After further investigation, CCTV footage confirmed there was an empty loader with a trailer moving along portal road. There were no additional movements around this time or within the next hour. Staff were reminded to only move vehicles if essential and within allowable times if able. No further feedback was provided by the resident.
11/01/2021	Resident contacted the Community Team via email at 12:23 pm regarding a potential speeding truck leaving Pit Top.	The Community Team advised Dendrobium Mine of the concern immediately and an investigation was completed. After further investigation, the truck in question was contracted by Ledacon which are not equipped with GPS tracking data to validate the speed. Ledacon's fleet is being upgraded to have the systems installed. The resident was advised, and no further feedback was provided.

11/01/2021	Resident contacted the Community Team via email at 8:57 am regarding loud reversing alarms in the morning.	The Community Team advised Dendrobium Mine of the concern immediately and further information was requested from the resident in relation to timing, however, no response was received. An investigation was completed. After further investigation, CCTV footage was unable to confirm any movements associated with a reversing alarm at the reported time. No further response was received from the resident.
5/01/2021	Resident contacted the Community Team via email at 9:58 am regarding a notification of activities to residents; the notice period was too short.	The Community Team advised nearby residents of additional activities taking place across from the entrance of the Pit Top via letterbox drop and email. The notification was delivered the morning the activities were planned to commence as a result of a safety issue identified the same morning. Residents were notified as soon as possible. The resident was provided feedback however, they would like to record the dissatisfaction of the late notice.
5/01/2021	Resident contacted the Community Team via email at 12:03am regarding loud vehicle noise at 11:55pm and 5:20am the following day.	The Community Team advised Dendrobium Mine of the concern immediately and an investigation was completed. After further investigation, CCTV footage confirmed that there were no movements at 11.55pm at the Pit Top. At 5:20am an empty supply loader was moved to Portal Road in preparation to load materials for underground. The loading of material happened within allowable times. The resident was provided feedback by return email. No further feedback was received from the resident.
4/01/2021	Resident contacted the Community Team via email at 1:53pm regarding excessive vehicle noise and materials handling noise throughout the day.	The Community Team advised Dendrobium Mine of the concern immediately and further information was requested from the resident in relation to timing, however, no response was received. An investigation was completed CCTV footage confirmed business as usual activities were underway and no large machinery or loading were in operation at the Pit Top or on Portal Road. Personnel were interviewed additional noise sources could not be identified. The resident was advised, and no further feedback was received.
4/01/2021	Resident contacted the Community Team via email at 7:17am regarding excessive horn use at 7:10am.	The Community Team advised Dendrobium Mine of the concern immediately and an investigation was completed. After further investigation, CCTV footage confirmed that at 7:11am, there were two vehicles on the east side of the Pit Top collecting supplies for underground maintenance. Horns were used as a safety measure to confirm intentions of arriving in the same area. The resident was advised, and no further feedback was received.
31/12/2020	Resident contacted the Community Team via email at 7:58am regarding the Dendrobium Community Consultative Committee minutes not being available on the South32 Illawarra Metallurgical Coal website.	The Community Team advised the resident the Dendrobium Community Consultative Committee and Dendrobium Community Enhancement Committee Minutes will be available on the website on 4 January 2021. This is due to the office shut down period and personnel returning 4 January 2021. No further feedback was received from the resident.

31/12/2020	Resident contacted the Community Team via email regarding a reversing alarm at 6:50 am and engine noises at 7:05 am.	The Community Team advised Dendrobium Mine of the concern immediately and an investigation was completed. CCTV footage confirmed there was a truck within the warehouse at the time of concern. The truck did not reverse; however, this was the only movement recorded. The truck had a light load and cannot be heard revving the engine. Dendrobium Mine staff were reminded to be conscious of neighbours. The situation would be continued to be monitored within the warehouse and portal road. No further feedback was received from the resident.
31/12/2020	Resident contacted the Community Team via email at 5:41 am regarding noise from vehicle movements at the Pit Top at 5:39 am.	The Community Team advised Dendrobium Mine of the concern and an investigation was completed. CCTV footage identified staff vehicles were entering the staff car park at this time for start of shift. There were no recorded vehicle movements within the warehouse or portal road. Staff were reminded to keep noise and movements to a minimum. No further feedback was received from the resident.
27/12/2020	Resident contacted the Community Team via the Community Call Line at 7:31 am and 10:08 am regarding excessive noise coming from the Pit Top.	The Community Team advised Dendrobium Mine of the concern immediately and an investigation was completed. Usual activities were occurring at the time, with the exception of underground machinery re-entering the mine from 7 am after being serviced over Christmas and Boxing Day. The resident was provided this feedback by email at 7.58 am the same day. At 10.08 am the resident called back advising of the same excessive noise from the Pit Top. CCTV footage between 8-10 am determined there was little activity during this time. The resident was provided this feedback at 10.20 am and further detail was requested on the type of noise heard to aid further investigation. At 12.21 pm the following day (28/12) the resident described the noise as loud repetitive banging. Further investigation was completed, including the review of CCTV footage and interview of warehouse staff, however the source of the noise could not be identified on this occasion. The resident was provided this feedback by return email at 3.30 pm on 28 December.
23/12/2020	Resident contacted the Community Team via email regarding noise from vehicle movements at the Pit Top at 5:27 am and 5:33 am.	The Community Team responded to the resident the same day to advise the complaint was under investigation. The investigation confirmed staff attached an empty trailer to a vehicle and moved it a short distance out of the supply and Portal Road area. No further feedback was received from the resident.
22/12/2020	Resident contacted the Community Team via email at 6:36 am regarding noise from vehicle movements at 4:51 am at the Pit Top on Sunday 20 December.	The Community Team responded to the resident the same day to advise the complaint was under investigation. The source of the noise was unable to be identified at the reported time. CCTV footage showed no vehicle movements on portal road or in the warehouse. Staff were reminded about limiting vehicle movements during curfew times. No further feedback was received from the resident.

17/12/2020	Resident contacted the Community Team via email at 5:40 am regarding noise from vehicle movements at the Pit Top at 5:37 am.	The Community Team responded to the resident the same day to advise the complaint was under investigation. The investigation confirmed a drift runner moving for change of shift along Portal Road was the only operating vehicle at the time of concern. In line with the Noise Management Plan, during the curfew surface vehicle movements are minimised where possible except where required for safety, emergency reasons or change of shifts. No further feedback was received from the resident.
15/12/2020	Resident contacted the Community Team via email at 5:39 am regarding loud series of bangs around 5:37 am.	The Community Team responded to the resident the same day to advise the complaint was under investigation. The investigation confirmed that an empty forklift was moved to the top of portal road in preparation of a scheduled supply. Staff were reminded about curfew movements and being conscious of our neighbours during this time. No further feedback was received from the resident.
14/12/2020	Resident contacted the Community Team via email at 10:43 pm regarding horn use at 10:42 pm and vehicle noise after 10:00 pm.	The Community Team responded to the resident the same day to advise the complaint was under investigation. The investigation confirmed that prior to 10:00 pm two drift runners and a supply loader were attempting to enter portal road. As the vehicles were entering the mine, there was a delay from another vehicle exiting the mine. This caused the vehicles entering the mine to reverse out and hold until it was clear to enter, resulting in additional noise and delays. This activity also resulted in horn use to indicate outgoing traffic within the mine entrance. No further feedback was received from the resident.
7/12/2020	Resident contacted the Community Team via email at 4:39 pm regarding a contractor posting inappropriate content on social media.	The Community Team responded to the resident the same day to advise the complaint was under investigation. The investigation confirmed the post was published in April 2020 by an external contractor who no longer works with Illawarra Metallurgical Coal (IMC). The Facebook page in question is not endorsed by IMC. It was created by an anonymous source and is not managed by IMC. IMC reminded all contractors and staff about the South32 Code of Business Conduct and Social Media guidelines. No further feedback was received from the resident.
5/12/2020	Resident contacted the Community Team via the Community Call Line at 11.02 am regarding loud machinery noise coming from Dendrobium Mine.	The Community Team shared the concern with Dendrobium Mine immediately for investigation. The investigation determined the source of the noise to be an empty vehicle exiting the mine with an attachment used to carry goods underground. As it travelled over bumps at the time of concern, the attachment rattled causing the extra noise. The vehicle was requested to travel at walking pace when empty through the area. The resident was provided the investigation outcome by email at 11.56 am and was appreciative.

2/12/2020	Resident contacted the Community Team via email on 30 November at 1:14 pm requesting information about shift change times interfering with school drop off times.	The Community Team shared the concern with Dendrobium Mine the same day. An investigation confirmed that shift times have not changed, however due to a longwall change out, maintenance occurring on the underground road network caused disruption to vehicles entering and exiting the mine. This has delayed staff in exiting the mine. Dendrobium Mine also implemented COVID-19 controls which sees staggered shift start times to limit the number of people travelling together to maintain social distancing. This resulted in one minibus departing Dendrobium Mine between 8:15 and 8:30 am temporarily. The resident was unsatisfied with the outcome and would like their feedback recorded. The resident provided additional feedback on 7 December advising their dissatisfaction.
1/12/2020	Resident contacted the Community Team via email at 5.31 pm concerned about a devil symbol painted on equipment returning to site and the image it was portraying to the local community, particularly the children.	The Community Team shared the concern with Dendrobium Mine at 8 am the following day. The investigation determined the marking on the underground roof support was sprayed by the contracted company completing the offsite maintenance. The company was advised that the drawings described are inappropriate and should not be drawn in future given the potential sensitivities to the public. The resident was provided the result of the investigation by return email on 2 December 2020. No further feedback was received from the resident.
1/12/2020	Resident contacted the Community Team via email at 8.21 am regarding repeated loud horn use between 8 am and 8.30 am.	The Community Team shared the concern with Dendrobium Mine the same day. The investigation determined four drift runners were exiting the mine between the reported time. As the drift runners were exiting the mine, horns were used to positively communicate with other machine operators in the area to ensure safe passage. The resident was provided the outcome of the investigation by return email at 10.33 am. The resident then questioned why the operators did not communicate via radio. Dendrobium Mine confirmed radios were fitted in the machines however surface and underground operators communicate on different channels to avoid affecting communication between the different work environments. The use of horns is an effective means of ensuring positive communication when passing in the yard. The resident was dissatisfied with this outcome.
28/11/2020	Resident contacted the Community Team via the Community Call Line at 7.19 am and 9.16 am to advise of a truck idling on Cordeaux Road at each of the times above. The trucks were parked in front of the resident's property.	The Community Team shared the concern with the logistics team the same day. General practice is for all trucks to wait in the designated truck bay prior to receiving approval from Dendrobium Mine to receive deliveries to prevent congestion at the top of Mount Kembla. Investigations determined both trucks were waiting to travel to Dendrobium Mine and were unable to park in the truck bay as another truck making a delivery was already parked in the bay on their arrival. The back-up in deliveries was an oversight in the schedule. The resident did not request a call back.

27/11/2020	Resident contacted the Community Team via email at 4.41pm regarding an alleged speeding truck driving dangerously on Cordeaux Road. A description of the truck was provided.	The Community Team shared the concern with the logistics team the same day and advised the resident the concern would be investigated with the outcome shared early the following week. The investigation determined that the truck was travelling at 40km/h as it exited Dendrobium Mine with the driver noting he was aware of the Dendrobium Drivers Code of Conduct. As the speed of the truck could not be verified with data the concern has been formally recorded as a complaint and the driver was reminded of the Dendrobium Drivers Code of Conduct. Feedback was provided to the resident on 30 November by return email. No further feedback was received from the resident.
27/11/2020	Resident contacted the Community Team via email at 6.12 am regarding vehicle noise from the mine at 5.51 am and 6.11 am.	The Community Team shared the concern with Dendrobium Mine the same day. The investigation included the review of the CCTV footage of the pit top and no vehicles were viewed to be mobile at the reported times. Feedback was provided to the resident at 4.00 pm with a request for any further information that may assist with a more detailed investigation. No further feedback was received from the resident.
25/11/2020	Resident contacted the Community Team via email at 1.05 pm regarding large truck traffic on Cordeaux Road. The resident is concerned the trucks are travelling too fast downhill requiring the excessive use of exhaust brakes.	The Community Team shared the concern with the logistics team the same day. It was noted there is increased truck movements on Cordeaux Road at this time due to the longwall changeout, with underground roof supports being taken offsite for maintenance. The mine works closely with truck companies to manage schedules and safety through Mount Kembla. Companies were notified of this concern the same day and the issue will be monitored moving forward. The resident was provided this information the same day by return email with a request to share more detail when trucks are observed acting in this manner. The resident provided further advice that the period of the trucks travelling in this manner includes periods outside of longwall changeout.
24/11/2020	Resident contacted the Community Team via email at 11.53 pm on 23 November and 12.15 am on 24 November regarding vehicle noise from Dendrobium Mine at the emailed times.	The Community Team shared the concern with Dendrobium Mine for investigation on 24 November. The investigation included the review of CCTV footage and confirmed a drift runner was collecting staff to travel underground at the reported times. The mine limits such movements during the night where possible, and on this occasion the movement was essential. The resident was provided the outcome of the investigation 24 November by return email. No further feedback was received from the resident.
20/11/2020	Resident contacted the Community Team via email at 1.26 pm regarding vehicle noise from trucks on Cordeaux Road, Mount Kembla throughout the day.	The Community Team followed up with Dendrobium Mine to confirm the truck movements were associated with the planned longwall changeout activities. A response via email was provided to the resident the same day advising the truck movements were associated with the longwall changeout 19 November - 5 December. The truck movements were planned to occur within the Dendrobium Driver's Code of conduct to limit impact on the community. No further feedback was received from the resident.

19/11/2020	Resident contacted the Community Team via email at 1:35 pm regarding vehicle noise at 11:34 pm 19 November and 12:09 am 20 November.	The Community Team responded by email the same day. After further investigation, it was confirmed vehicles were exiting the Mine in relation to the longwall changeout activities. The activity was reported to the General Manager and the workers were reminded of curfew times. Dendrobium Mine continue to work with the workforce and improve its communication strategies to mitigate this issue. No further feedback was received from the resident.
19/11/2020	Resident contacted the Community Team at 5 am via the Community Call Line advising a truck parked in the truck bay on Cordeaux Road had its compressor on causing noise. The truck registration details were provided.	The Community Team alerted Dendrobium Mine of the concern at 5.34 am the same day. The General Manager contacted the truck driver the same morning requesting engines be switched off when trucks parked in the truck bay. This was also communicated to transport companies the same day. The action taken was communicated to the resident by return call (voice message) at 7 am the same day. The resident provided further information at 10.15 am noting the truck was parked up from the truck bay in front of their home. At 10.56 pm the same day the resident contacted the Community Call Line on the same issue. The Community Team called the resident at 11.15 pm for more information at which point the resident advised they called the police after approaching the truck driver and feeling threatened. The General Manager attended the area of the parked truck at 12.10 am and noted the compressor was turned off. He drove past at 5 am again and the compressor remained off. As a result of the second call, trucks were requested to park in the bays furthest from the village first and leave compressors on for one hour only once parked. The resident was advised of the additional actions on 20 November and was appreciative of the action taken.
16/11/2020	Resident contacted the Community Team via email regarding the use of a horn on site at 8:21 pm.	The Community Team responded by email the next day. An investigation confirmed two vehicles accessing Portal Road used their horns as part of standard safety protocols. The activity took place within allowable activity times and was in line with the Noise Management Plan. No further feedback was received from the resident.
16/11/2020	Resident contacted the Community Team via email regarding three notes of reversing alarms at 7:25 am, 7:36 am and 9:36 am.	The Community Team responded by email the same day. An investigation confirmed heavy haulage trucks were entering and exiting the Mine within the reported times. The activities occurred within the allowable timeframe, however the trucks contracted had a different low frequency reversing alarm to regular onsite vehicles. A schedule of the upcoming movements for the supply run was shared with the resident. No further feedback was received from the resident.

15/11/2020	Resident contacted the Community Team via email regarding reversing alarms at 7:04 am.	The Community Team responded by email the same day. An investigation determined there was a vehicle transporting staff across site at the reported time. The vehicle was proceeding through a green entry light to the underground operations, however as it was entering the light turned red and required the vehicle to reverse 8-10 metres to return to the line and wait for the green light. The vehicle was fitted with a low frequency reversing alarm, in line with the Noise Management Plan. This activity could not have been avoided for safety reasons and happened within an allowable time, however, all staff have been reminded to be conscience of our neighbours when performing these types of activities. No further feedback was received from the resident.
15/11/2020	Resident contacted the Community Team via the Community Call Line at 4:55 pm and 8:40 pm regarding excessive noise coming from Dendrobium Mine.	The Community Team responded by email the next day, 16 November. An investigation determined there were numerous vehicle movements on site conducting general business activities through the day and evening. A longwall changeout notification was distributed to nearby residents 2 November, advising there may be an increase in movements and activities associated with the site for a short period. Although the activities reported were taking place in the allowable time, staff were reminded to be conscious of our neighbours and reduce noise and movements where ever possible. No further feedback was received from the resident.
15/11/2020	Resident contacted the Community Team via email at 6:09 am regarding vehicle noise at 6:08 am.	The Community Team responded by email the same day. An investigation confirmed a drift runner drove around the pit top at approximately 6:07 am for a couple of minutes before re-entering the mine. No further feedback was received from the resident.
14/11/2020	Resident contacted the Community Team via email at 9:47 pm regarding a loud noise between 9:30-9:45 pm.	The Community Team responded by email the next day at 1:11 pm. Investigations confirmed a ballast truck was being loaded with material to go underground. This activity occurs frequently, however loading usually occurs during the day as noise from the scraping of the bucket can travel. The loading occurred in the evening on this occasion as there was a delay in the schedule. The activity took place within the allowable timeframes, however the loading schedule would be monitored in the future to avoid loading in the evening. No further feedback was received from the resident.
14/11/2020	Resident contacted the Community Team via email at 9:09 am regarding loud vehicle noise at 4:00 am, 4:11 am and 4:43 am.	The Community Team responded by email the same day. An investigation determined a business-critical supply run occurred between 4.00 am and 4.10 am. No further movements were identified after 4.10 am. The activities identified were essential to the safe operation of the mine. No further feedback was received from the resident.
13/11/2020	Resident contacted the Community Team via email at 7:43 am regarding excessive noise at the mine on 12 and 13 November. The resident did not receive notification of increased activities during this period.	The Community Team responded by email the same day. The resident was advised that a longwall changeout notification was delivered to nearby residents on 2 November which outlined extra activities and vehicle movements were likely throughout November. An investigation of the activities within the reported time determined there were numerous vehicles on site as part of the longwall changeout activities. The resident was provided the Community Call Line details to log additional concerns at the time of the event so corrective action could be taken. The resident's location was also requested to enable delivery of future notifications. No further feedback was received from the resident.

13/11/2020	Resident contacted the Community Team via email at 7:43 am regarding excessive noise all day on 12 November.	The Community Team responded by email the same day. An investigation determined there were numerous vehicle movements conducting general business activities. It was also noted on 11 November; the quarterly noise monitoring was conducted in accordance with Dendrobium Mine's Noise Management Plan. The results suggested that noise levels for 12 November showed no breach of licence conditions. The resident was advised the data would be uploaded to the South32 website when finalised. No further feedback was received from the resident.
13/11/2020	Resident contacted the Community Team via email at 7:48am regarding coal dust at their property. The resident requested the company pay for his house to be cleaned on a semi-regular basis as a result.	The Community Team responded by email the same day. A CSIRO report on dust in the area was shared with the resident, which identified the majority of dust sampled contained inorganic and organic matter. Illawarra Metallurgical Coal (IMC) advised a similar dust analysis could be completed at the property, and pending the result, the appropriate action be taken (i.e. cleaning requested). The resident accepted the opportunity for a CSIRO dust analysis and IMC requested suitable dates for the sample to be collected. An additional dust concern was lodged on 20 November. IMC provided Dendrobium Mine dust monitoring results which indicated the mine is within dust limits set out in the Condition of Consent. The option for the CSIRO dust analysis remained on the table and was pending the resident's advice on a suitable collection date. A further concern was lodged on 27 November with a request for investigation. The resident was advised an investigation was underway and required the resident to confirm they wished to continue with the CSIRO dust sample analysis. No further feedback was received from the resident. IMC sent a follow up email requesting the resident's availability to collect the dust sample in December. On 25 January the resident responded confirming the dust analysis could proceed. On 12 February IMC advised of a dust sample collection date. The resident responded the same day to advise the date wasn't suitable and requested collection take place on 22 February. Two company representatives attended the property to collect the dust sample however the resident declined access and requested it be collected by an independent person. This was not possible. Both parties agreed the complaint would be closed.
13/11/2020	Resident contacted the Community Team via email at 5.52 am regarding vehicle noise at 5:50 am, 5:25 am and 5:35 am.	The Community Team responded by email the same day. An investigation determined vehicles were on the surface at the reported times transporting machinery from underground. The activities occurred outside allowable times and staff members involved were reminded of the self-imposed night time curfew to limit impacts on nearby residents. The Mine commenced reviewing options to improve communication with staff. No further feedback was received from the resident.
12/11/2020	Resident contacted the Community Team via email at 5.27 pm regarding incorrect reporting of a complaint lodged on 14 April 2020 regarding dust monitoring reports.	The Community Team responded by email the following day at 9:30am. The complaint lodged on 14 April 2020 was amended to include the feedback received from the resident on 29 April 2020 requesting a more specific link to the dust monitoring reports, which was provided the same day. A copy of the amended report was provided to the resident and it was noted this error would be recorded as a complaint. No further feedback was received from the resident.

12/11/2020	Resident contacted the Community Team via email regarding horn use at 6:57 am.	The Community Team responded by email the same day to advise there were numerous vehicles on the surface near the warehouse at the reported time. CCTV footage was reviewed, and the source of the horn noise could not be determined. The horn may have been used for safety reasons. The vehicle movements were within the allowable timeframe and performing business as usual activities. No further feedback was received from the resident.
11/11/2020	Resident contacted the Community Team via email regarding vehicle noise at 9:10 pm.	The Community Team responded by email the next day. An investigation determined a Load, Haul, Dump (LHD) vehicle was collecting material at approximately 9:07 pm. The time of the activity fell within the self-imposed curfew (6:15 am - 10:00 pm) however, staff were reminded to keep noise to a minimum at night time. No further feedback was received from the resident.
10/11/2020	Resident contacted the Community Team via email regarding vehicle noise at 6:05 am.	The Community Team responded by email the next day to advise an investigation confirmed there was a delivery on the surface at 6:05am. Communication was distributed to staff on site to remind them of the Noise Management Plan conditions. No further feedback was received from the resident.
8/11/2020	Resident contacted the Community Team via email regarding vehicle noise at 9:05-9:12 pm.	The Community Team responded by email the next day to advise an investigation confirmed a Load, Haul, Dump (LHD) vehicle was driving on the surface to the warehouse for material collection. Staff were reminded to keep noise to a minimum and reduce vehicle movements where possible. No further feedback was received from the resident.
7/11/2020	Resident contacted the Community Team via email regarding horn use at Dendrobium Mine at 6.20 am and 8.46 am.	The Community Team responded by email the same day to advise an investigation commenced. The investigation did not identify the use of horns at the reported time. The resident was provided this information by email the same day and advised that horn use does occur at the Mine on occasions in line with our Noise Management Plan. No further feedback was received from the resident.
4/11/2020	Resident contacted the Community Team via email at 7.37 am regarding vehicle noise the previous day, 3 November, between 10.30 pm and 12 midnight.	The Community Team responded via email the same day to advise an investigation determined the usual vehicle movements associated with shift change occurred during the time of concern. The team did note a vehicle exited the mine closer to midnight to unload rubbish into a bin. Staff were reminded to limit vehicle movements at the site as much as possible. The resident provided further comment on 10 November about rubbish removal occurring at midnight. It was confirmed this activity was not business critical and staff were reminded to limit these activities at night. The resident remained unhappy with the response and suggested communication methods with staff required improvement.

4/11/2020	Resident contacted the Community Team via email at about 7.30 am regarding a vehicle parked on Cordeaux Road between the Dendrobium Mine entry and their property. The resident would like the vehicle moved.	The Community Team responded via email within 24 hours advising the contractor vehicle had likely pulled over in the described location to take a phone call in a safe manner. The vehicle was not parked to tend to business at Dendrobium Mine. No further feedback was received from the resident.
3/11/2020	Resident contacted the Community Team via email regarding dust spilling from underneath a Cleanaway truck on Cordeaux Road. The truck departed the Dendrobium Mine at 1.29 pm.	The Community Team responded via email the same day to advise the concern was received and an investigation had commenced. The investigation confirmed a Cleanaway truck departed the site at 1.29 pm, and the driver had removed as much dirt as possible from under the bin before departing. There may have been dirt on the rails of the bin which escaped as the truck exited. The resident was advised of the outcome on 5 November 2020.
3/11/2020	Resident contacted the Community Team via email regarding horn use at 7.17 am.	The Community Team responded via email the same day to advise the investigation determined the horn use was part of a safety procedure for the entry and exit to the mine for machinery. The machinery movements were part of daily mining activities and the horn use period was brief. The resident was dissatisfied with the incident and response provided.
2/11/2020	Resident contacted the Community Team via email regarding the delivery of a notice advising of potential increased noise and traffic movements associated with the longwall changeout; the resident was concerned the period of notification commenced the day the notice was received.	The Community Team responded via email the same day to advise the notification was to provide an update on Mine activities and advise of the potential for noise and additional traffic. Further communication from the resident indicated they would prefer the notification earlier in future.
30/10/2020	Resident contacted the Community Team via email regarding vehicle noise at 4.16 am.	The Community Team responded via email the same day to advise preliminary investigations had not identified vehicle movements at the time of concern. The results of the full investigation found the source to be unknown as there were no vehicle movements on CCTV or activities underway in the workshop. The resident was advised of the full investigation outcome via email on 2 November 2020.
29/10/2020	Resident contacted the Community Team via email regarding the timely share of information regarding the sediment pond failure. The resident was still waiting for information requested.	The Community Team responded via email the same day noting the resident's frustration on the matter. The investigation into the sediment pond failure was continuing, and as previously communicated to the resident, the information would be provided as soon as it was available.
28/10/2020	Resident contacted the Community Team via email at 2.43 am, 3.07 am and 3.13 am regarding vehicle noise, vehicle idling, grinding and whirring noises coming from Dendrobium Mine Pit Top.	The Community Team raised the concerns with Dendrobium Mine the same morning. Investigations determined the noise was related to towing broken down equipment to the surface. This was business critical and could not be delayed as the equipment was blocking the main travel road in and out of the mine. The resident was provided feedback the same morning. The resident was not satisfied with reasoning for this activity.

20/10/2020	Resident contacted the Community Team via email at 12:39 pm regarding a Cleanaway Truck allegedly speeding on Cordeaux Road.	The Community Team responded to the resident the same day to advise an investigation was underway with Cleanaway. Further advice from Cleanaway suggested they were unable to access truck and GPS data due to a network issue and worked to resolve the issue. Due to the network issue not being resolved in a timely manner, the complaint was unable to be validated and Cleanaway were provided with a written corrective order for non-conformance. The resident was provided the outcome of the investigation to which the resident provided additional feedback reflecting their dissatisfaction with Cleanaway.
17/10/2020	Resident contacted the Community Team via the Community Call Line at 11:39 am regarding damage to property caused by a truck travelling from Dendrobium Mine.	The Community Team responded to the resident the same day to advise the investigation confirmed a Kelly's Transport truck reversed into a small tree and rock wall adjacent to the parking bay as it was collecting an empty trailer from the parking bay on Cordeaux Road. Kelly's Transport investigated the incident further and reached remediation agreement with the resident. The resident was satisfied with the outcome and quick response.
12/10/2020	Resident contacted the Community Team via email at 12:28 pm regarding trucks travelling along Cordeaux Road with uncovered loads the week prior.	The Community Team responded to the resident via email the same day advising this issue will be monitored. The alleged incidents from last week could not be further investigated as timing of the alleged incidents was not provided. No further feedback on this issue was received from the resident.
12/10/2020	Resident contacted the Community Team via email at 12:28 pm regarding lack of communication surrounding an environmental report on the sediment pond at Dendrobium.	The Community Team responded to the resident via email advising an update would be provided once available, however, their dissatisfaction would be recorded.
12/10/2020	Resident contacted the Community Team via email at 12:28 pm regarding trucks parking along Cordeaux Road.	The Community Team responded to the resident via email the same day advising trucks are permitted to park in areas along Cordeaux road. Trucks park on Cordeaux Road awaiting deliveries to the Mine or due to curfews enforced by RMS and the Dendrobium Drivers Code of Conduct. The resident did not agree to this approach and believed trucks should not park on Cordeaux Road. The resident requested their dissatisfaction be recorded.
4/10/2020	Resident contacted the Community Team via the Community Call Line at 4:15 pm regarding noise coming from Dendrobium Mine.	The Community Team responded to the resident via email the same day advising an investigation determined the noise source as damaged roof mesh being placed into the metal recycling bin on Portal Road. As a result of the complaint, a communication was shared with staff to remind them to keep noise to a minimum where possible. No further feedback was received from the resident.

2/10/2020	Resident contacted the Community Team via the Community Call line at 9:19 am regarding engine noise coming from Dendrobium Mine.	The Community Team responded via email to the resident the same day advising the noise was attributed to a truck towing machinery along Portal Road. As the truck towing the machinery is on tracks it can cause additional noise. Communication went out to staff to remind them to keep noise to a minimum where possible. No further feedback was received from the resident.
27/09/2020	Resident contacted the Community Team via email at 7:10 am regarding bangs and excessive vehicle noise.	The Community Team responded via email to the resident the same day to advise an investigation was underway. The following day, the resident was advised the noise on site was due to critical business activities taking place within curfew hours. No further feedback was provided by the resident.
21/09/2020	Resident contacted the Community Team via email at 2:12 pm to note their dissatisfaction regarding communication of an investigation outcome of a sediment pond at Dendrobium	The Community Team responded via email to the resident the same day to advise the investigation regarding the sediment pond is still ongoing and information will be provided once available. The resident would like their dissatisfaction to be recorded.
21/09/2020	Resident contacted the Community Team via email at 2:10 pm regarding repeated use of vehicle horns on site.	The Community Team responded via email to the resident to advise that Illawarra Metallurgical Coal (IMC) were unable to identify the source of the horn and crews were reminded of their obligations to limit the use of horns. No further feedback was provided by the resident.
21/09/2020	Resident contacted the Community Team via email at 12:21 pm and at 2:13 pm regarding reversing alarms on site	The Community Team responded via email to the resident to advise the reversing alarm was attributed to a pavement sweeper which was being used to clean dust from the hard surfaces across the site. A notification will be provided to residents should the sweeper return to site. No further feedback was provided by the resident.
17/09/2020	Resident contacted the Community Team via email at 8:13 am regarding excessive vehicle noise at 6:00 am	The Community Team responded via email to the resident to confirm that critical surface activity took place at the time recorded. This activity was planned and approved. It was noted that moving forward the Community Team would work closer with the Dendrobium site to determine activities with potential increase in noise and provide proactive notifications to residents in advance. Resident responded with their dissatisfaction of the activity.
16/09/2020	Resident contacted the Community Team via email at 8:36 am regarding noise monitoring results for August.	The Community Team responded via email to the resident the same day to advise the August noise monitoring results were not yet finalised and would be available soon. The resident provided a response requesting his dissatisfaction of the Illawarra Metallurgical Coal response be recorded.

13/09/2020	Resident contacted the Community Team via email at 11:43 am regarding Wetlands at Redgum Estate and pond clean-up.	The Community Team responded via email to the resident the next day and gathered additional information in relation to the wetlands. After further investigation it was determined that the ponds within the wetland in question were not currently being worked on by Illawarra Metallurgical Coal (IMC) sediment clean-up crews. The Resident believed the ponds were in a bad condition due to the Brandy and Water Creek clean-up being undertaken by IMC. This has been confirmed not to be the case and no further feedback was provided.
04/09/2020	Local community member contacted Community Team at 4:12 pm seeking an update on the cause of the sediment pond event and clean up progress report.	The community team provided a response to the community member that the clean-up works were continuing and the investigation into the cause of the event was ongoing. While the community member was pleased that the clean-up was continuing, they were displeased at the delay in the release of the results to community stakeholders.
1/09/2020	Resident contacted the Community Team via email at 8:59 pm regarding loud vehicle noise	The Community Team responded via email to the resident the same day to advise there was vehicle movement on the surface for shift change. Communication was provided to inform personnel on-site to keep noise / interactions to a minimum, where possible. No further feedback was provided by the resident.
27/08/2020	A resident submitted a complaint at 12:58 pm by email regarding the establishment of a community complaints line as per Dendrobium's Environment Protection Licence. The resident was concerned that the call line was not adequately communicated as a dedicated complaints line.	The Community Team responded by email the same day advising that IMC maintains a Community Call Line (1800 102 210) which is available 24 hours, 7 days per week. The Community Call Line is advertised online and through the printed collateral delivered to residents. The Community Team advised that the company considers the Community Call Line satisfies the requirements under the relevant section of the Environment Protection Licence. No further feedback was provided by the resident
27/08/2020	A resident phoned the community call line at 10:20 am advising that coal fines had been deposited along the bank of Brandy and Water Creek which runs through the property.	The Community Team phoned the resident back the same day and discussed the incident at Kemira Valley. A site inspection was completed the following day and clean up works arranged to commence the following week. No further feedback was provided by the resident.
24/08/2020	Resident contacted the Community Team via email at 10:51 am regarding location and progress of the clean-up at Brandy and Water Creek.	The Community Team responded via email to the resident the same day to arrange a meeting to provide an update. A meeting took place on 25 August to discuss ongoing maintenance of Brandy and Water Creek and additional communication measures to be put in place; such as a community noticeboard. These requests are currently being investigated and an update will be provided when available.

20/08/2020	Resident contacted the Community Team via email at 3:54 pm regarding Brandy and Water Creek environmental clean-up process and corrective actions taken.	The Community Team responded via email to the resident the following day to advise Illawarra Metallurgical Coal (IMC) had commenced the clean-up process at Brandy and Water Creek the week prior. The caller requested further information regarding the exact process involved in the clean-up and environmental impacts. A response was provided to the resident to advise that controls were put in place and neighbouring community members were provided an update via letter. IMC have been working with the Environment Protection Authority (EPA) and further details would be provided when available. No further feedback was provided by the resident.
19/08/2020	Resident contacted the Community Team via email at 8:10 am regarding rubbish in American Creek.	The Community Team responded via email to the resident the same day to advise Illawarra Metallurgical Coal (IMC) had attended American Creek and cleaned up the rubbish found on site. No further feedback was provided by the resident.
18/08/2020	Resident contacted the Community Team via email at 9:00 am regarding sediment release in the Brandy and Water Creeks and requesting an update on corrective actions.	The Community Team responded via email to the resident the same day to advise Illawarra Metallurgical Coal (IMC) enacted the response plan and alerted the Environment Protection Authority (EPA) as soon as the incident was identified. Corrective action commenced the same week, and further information will be provided once available. No further feedback was provided by the resident.
17/08/2020	Community member contacted the Community Team via email at 6:22 pm regarding sediment release in Brandy and Water Creek in Figtree.	The Community Team responded via email to the resident the next day (18 August) to advise Illawarra Metallurgical Coal (IMC) were undertaking an investigation to identify the cause of the event and were implementing corrective actions. It was advised that the incident had been reported to the Environment Protection Authority (EPA) and that clean up works had commenced in the Creek. The community member has requested that IMC contribute to Council's Bushcare program as well as an environmental clean-up. It was advised that IMC will explore opportunities with numerous environmental programs in the future and the Dendrobium Community Enhancement Program (DCEP) will provide ongoing support within the community. The resident was appreciative of the feedback and provided no further requests.
17/08/2020	Community member contacted the Community Team via email at 8:02 pm regarding sediment release in Brandy and Water Creek.	The Community Team responded via email to the community member the next day (16 August) to advise Illawarra Metallurgical Coal (IMC) performed an investigation to identify the cause of the event and implement corrective actions. They were advised that the incident had been reported to the Environment Protection Authority (EPA). No further feedback was provided by the community member.

17/08/2020	Community member contacted the Community Team via email at 8:25 pm regarding sediment release in the waterways at Figtree.	The Community Team responded via email to the community member the next day (16 August) to advise Illawarra Metallurgical Coal (IMC) was undertaking an investigation to identify the cause of the event and implement corrective actions. They were advised that the incident had been reported to the Environment Protection Authority (EPA). The community member requested more information on how the creek will be restored over the long term. The community member has been advised that an Environmental Assessment Report is currently being prepared and further information will be provided when available. No further feedback was provided by the community member.
15/08/2020	Resident contacted the Community Team via email at 11:45 am regarding truck driver behaviour on Mt Kembla.	The Community Team responded via phone to the resident the same day to advise all drivers had been provided written communication on driver behaviour expectations and were reminded of the Dendrobium Drivers Code of Conduct. The resident was satisfied and provided feedback the following week that they noticed an improvement in driver behaviour in the area.
14/08/2020	Resident phoned the community call line at 7:45 am to lodge a complaint regarding the presence of sediment laden water (including coal fines) in the creek which runs through the property.	A response was provided to the resident the same day and the incident which had occurred at Kemira Valley was discussed with the landowner. The community team advised that they would undertake an inspection of the property as soon as practical. An inspection of the property occurred and clean up activity has since occurred at the property. No further feedback was provided by the resident.
14/08/2020	Resident contacted the Community Team via email at 2:03 pm regarding communication to the community on the Sediment Pond at Kemira Valley.	The Community Team responded via email to the resident the next day (14 August) to advise Illawarra Metallurgical Coal (IMC) had made direct communication with many key community stakeholders including the Dendrobium Community Consultative Committee (DCCC), local government, community members (including local residents) and the relevant government authorities. A letterbox drop was completed for the residents along Stones Road, near Kemira Valley Coal Loading Facility. Furthermore, a statement was provided to the local media. The caller requested signage be put up around the creek. The caller was advised the same day that work was underway with the Environment Protection Authority (EPA) and an update will be provided once available. No further feedback was provided by the resident.
12/08/2020	Resident contacted the Community Team via email at 10:00 am to lodge a complaint regarding a Community Team member.	The Community Team responded via phone to the resident the same day to investigate the issue. After further discussions the resident would like to register their dissatisfaction with the approach taken by a Community Team member in relation to handling of another complaint. It was confirmed the comments would be noted by IMC and that discussions had taken place with the Community Team member. No further feedback was provided.

12/08/2020	Resident contacted the Community Team via email at 9:33 am advising that a complaint lodged in July had been omitted from the monthly report.	A member of the Community Team responded to the resident by phone the same day and it was agreed that the July report would be amended, with the complaint now included in the report.
11/08/2020	Community member contacted the Appin Control room at 6:00 am regarding a sediment release into a creek nearby to Dendrobium Mine's operations.	The Control Team member passed along the details of the call to the Community Team. No name was left or a request for a call back. No further action was taken.
11/08/2020	Resident contacted the Community Team via email at 2:06 pm regarding the Sediment Pond release into Brandy and Water Creek from Kemira Valley Loading Facility.	The Community Team responded via phone to the resident the same day to advise that an update would be provided to the community and the Dendrobium Community Consultative Committee (DCCC) when further information became available. Resident requested updates be provided when available.
28/07/2020	Resident contacted the Community Team via email at 1:43 pm regarding a noise exceedance not being discussed and appropriately recorded at a recent Dendrobium Community Consultative Committee (DCCC).	The Community Team responded to the resident the same day to advise that the noise exceedance will be presented in the September DCCC meeting and minutes and notifications were sent out to surrounding residents on 22 June. The resident was not satisfied with this outcome as they felt it should have been raised at the July meeting. This concern, and the noise exceedance, will be noted at the next DCCC.
24/07/2020	Resident contacted the Community Team via email at 7.58 am to report loud vehicle movements through the night, specifically between 1 - 1.30 am and 2.58 am.	The Community Team responded to the resident the same day to advise the vehicle movements were identified as an underground vehicle pulling a loaded trailer toward the pit entry, forklift movements, and a vehicle exiting the mine. The movements were not typical for the early morning. The General Manager was notified of the movements. The resident provided further feedback and was dissatisfied that the identified movements occurred and believed they were not in line with the Noise Management Plan.
11/07/2020	Resident contacted the Community Team via email at 12.30 am to report rail squeal near William James Drive.	The Community Team shared the concern with the Logistics Team on July 11 at 2:47 pm. An investigation was completed which included reviewing the noise clip from the noise monitor and on this occasion, there has not been any issues identified. We are continuing to investigate rail squeal in the William James Drive area. No further feedback was provided by the resident.
10/07/2020	Resident contacted the Community Team via email at 7:20 am to report rail squeal near William James Drive.	The Community Team shared the concern with the Logistics Team on July 11 at 2:47 pm. An investigation was completed which included reviewing the noise clip from the noise monitor. A small amount of noise was recorded, however, there has not been any issues identified. Resident requested the noise clip for the event, however this is not available publicly. No further feedback was provided by the resident.

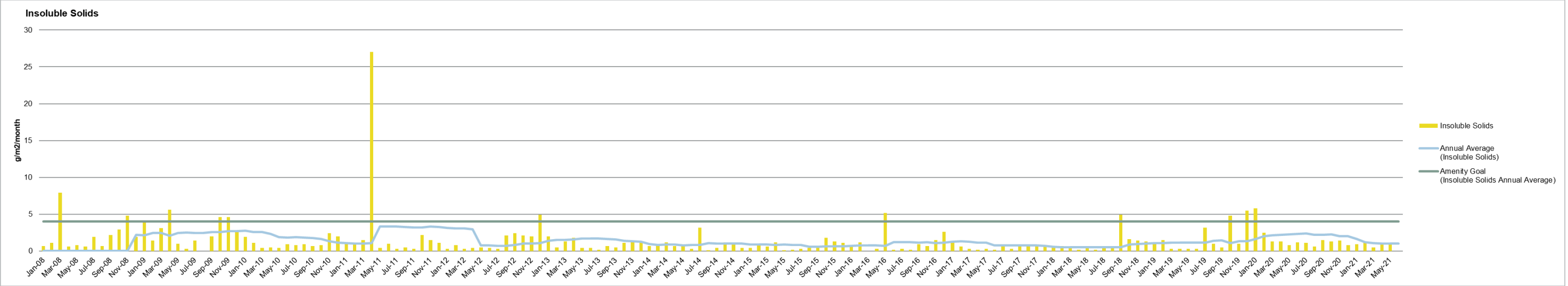
9/07/2020	Resident contacted the Community Team via email at 8:28 am to report their dissatisfaction in the community complaints reporting process.	The Community Team responded to the resident the next day (10 August) to advise that all complaints are handled in line with the IMC community complaints handling procedure and their feedback will be noted with IMC. The resident responded with further feedback and requested their dissatisfaction be recorded as a complaint.
9/07/2020	Resident contacted the Community Team via email at 6.20 am to report rail squeal at 6.12 am near William James Drive.	The Community Team shared the concern with the Logistics Team at 8.10 am the same day. An investigation was completed which included reviewing the noise clip from the noise monitor and conducting an inspection of the wagons. Nothing out of the ordinary was found. The resident was provided the outcome of the investigation by email the same day and advised that investigations of rail squeal in the area was continuing. No further feedback was received.
9/07/2020	Resident contacted the Community Team via email at 4:02 am regarding a loud vehicle noise, including squealing.	The Community Team responded to the resident the same day to advise an investigation was occurring. On July 10 the resident was informed that a vehicle was on the surface at the time collecting emergency supplies for underground work. Dendrobium Mine is currently establishing an underground emergency supply hub, to minimise vehicle movements on the surface outside of curfew periods. No further feedback was received from the resident.
5/07/2020	Resident contacted the Community Team via email at 3:20 pm regarding material handling at approximately 3:18 pm resulting in loud bangs.	The Community Team responded to the resident the same day to advise an investigation was occurring. The resident was advised that material was being unloaded on the surface and that additional controls are being developed to continue to reduce noise. No further feedback was received from the resident.
5/07/2020	Resident contacted the Community Team via email at 3:10 pm regarding vehicles using horns at 3:09 pm.	The Community Team shared the residents concern with Dendrobium Mine immediately to commence an investigation and responded to the resident by return email the same day. The source of the horn noise could not be identified, and CCTV footage showed no horns in use at the time of complaint. The resident was updated with this information and no further response was received.
2/07/2020	Resident contacted the Community Team via email at 3:20 pm regarding a truck that left the pit top at 7:40 am and was speeding.	The Community Team responded to the resident the same day to advise an investigation was occurring. The resident was advised on 8 July that Dendrobium Mine were unable to validate the information as the truck company did not have tracking data available on their trucks. A reminder was provided regarding the Dendrobium Drivers' Code of Conduct to the driver and the suggested installation of a speed tracking device in their vehicles. Feedback was provided by the resident to the Company about a separate enquiry.



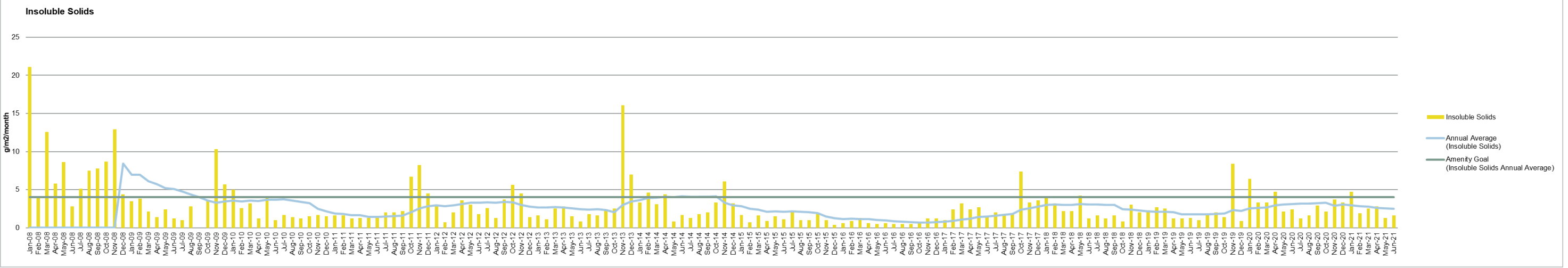
Appendix 6: Dendrobium Long-Term Environmental Monitoring Data

Appendix 6 – Long-term Environmental Monitoring Graphs

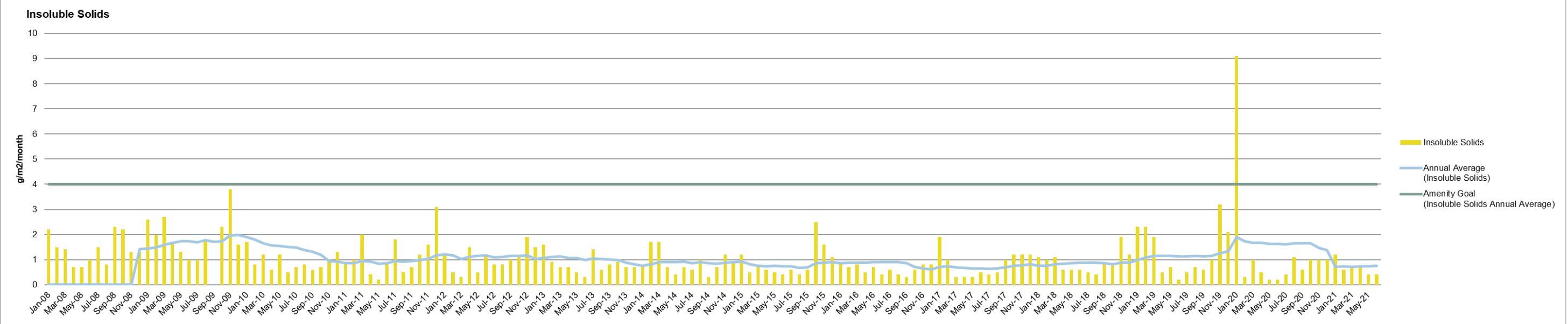
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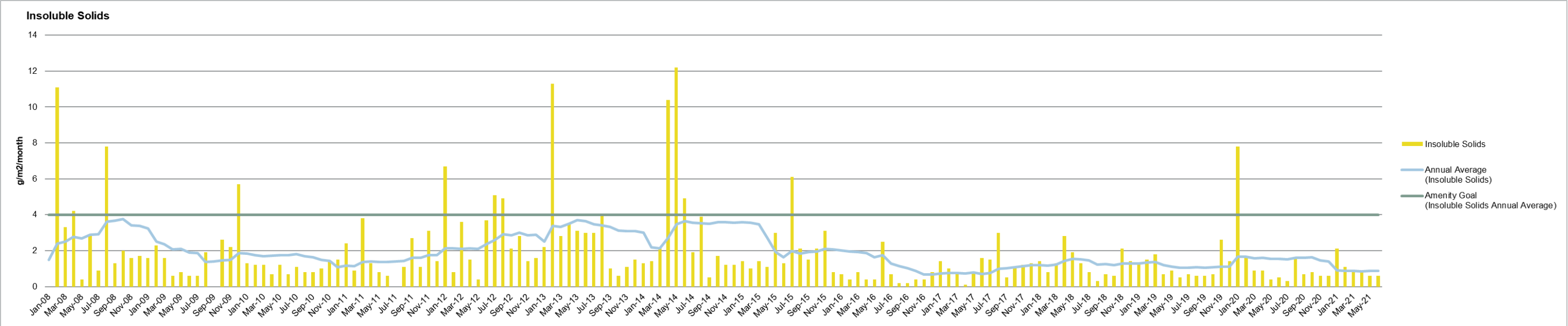
Dust Deposition Results - Point 13



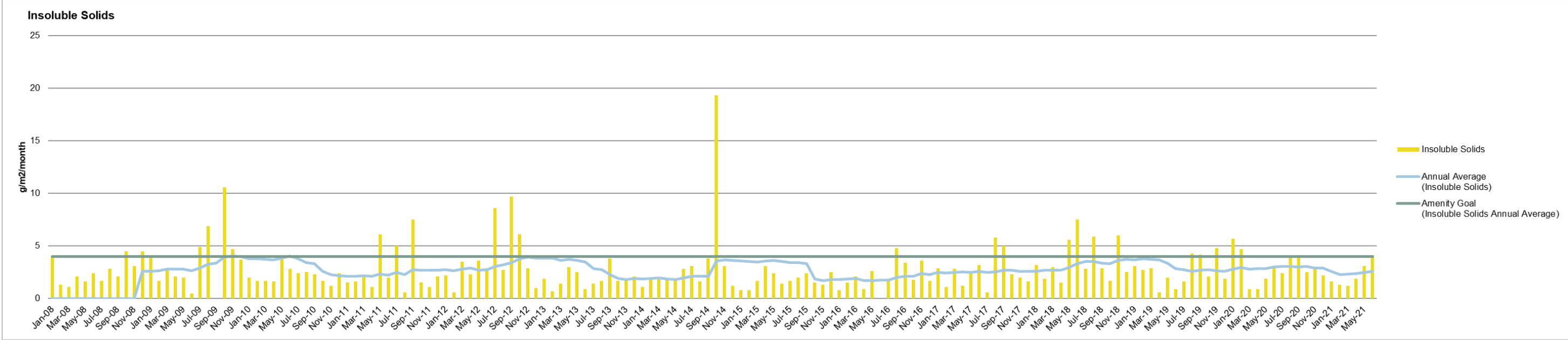
Dust Deposition Results - Point 17



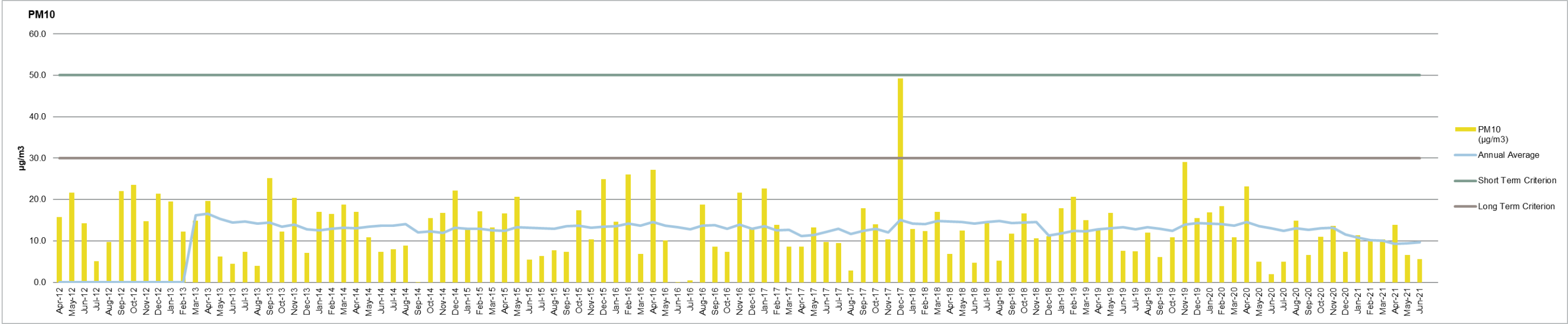
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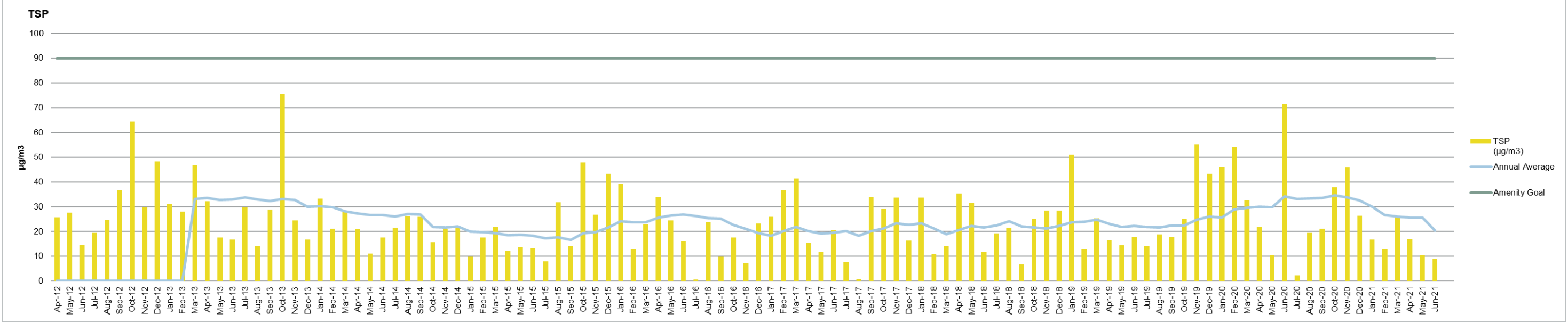
Dust Deposition Results - Point 18



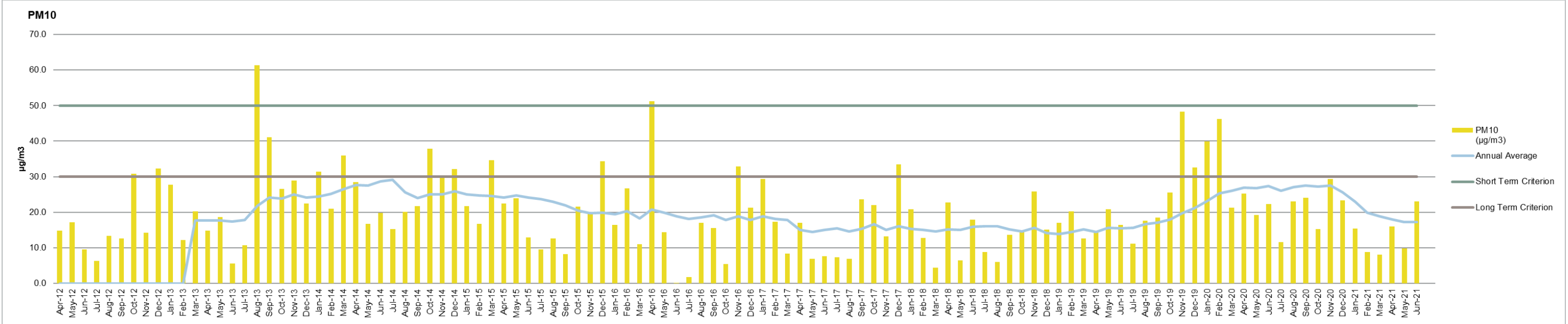
HVAS Results - Point 20 – PM10



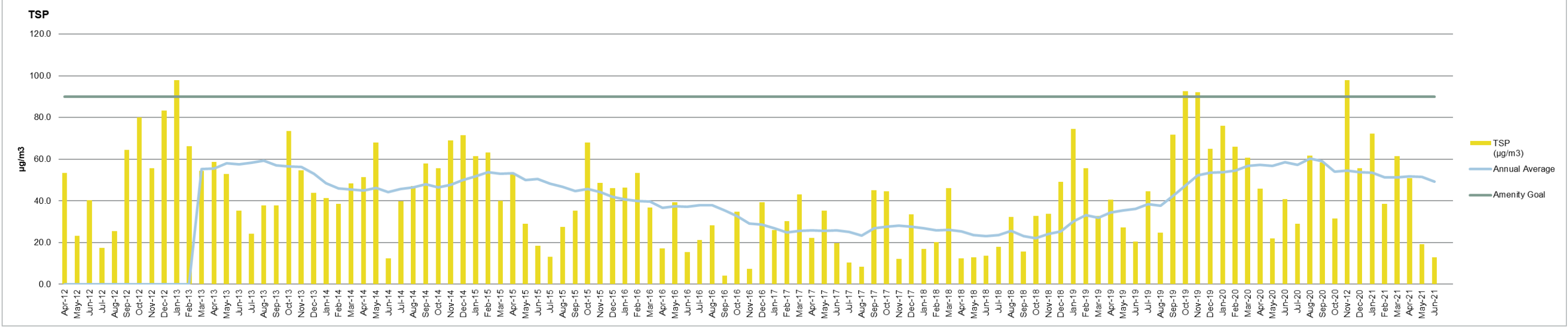
HVAS Results - Point 20 – TSP



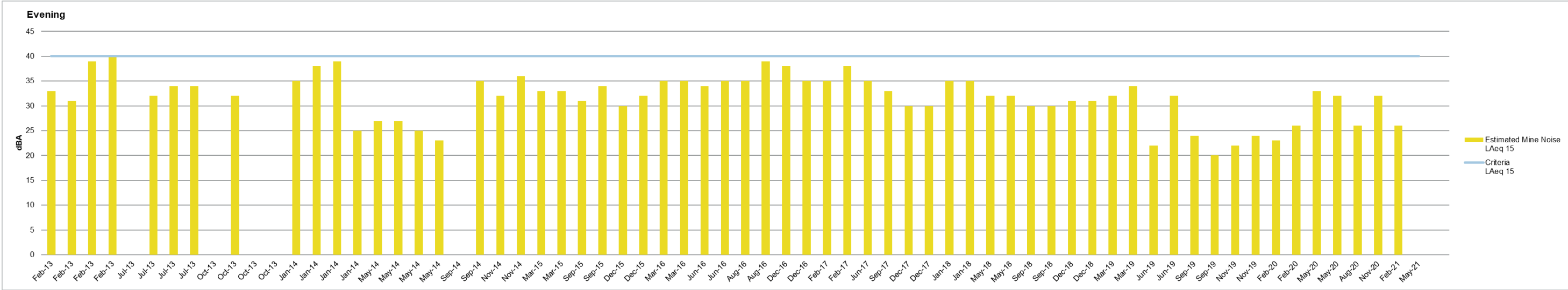
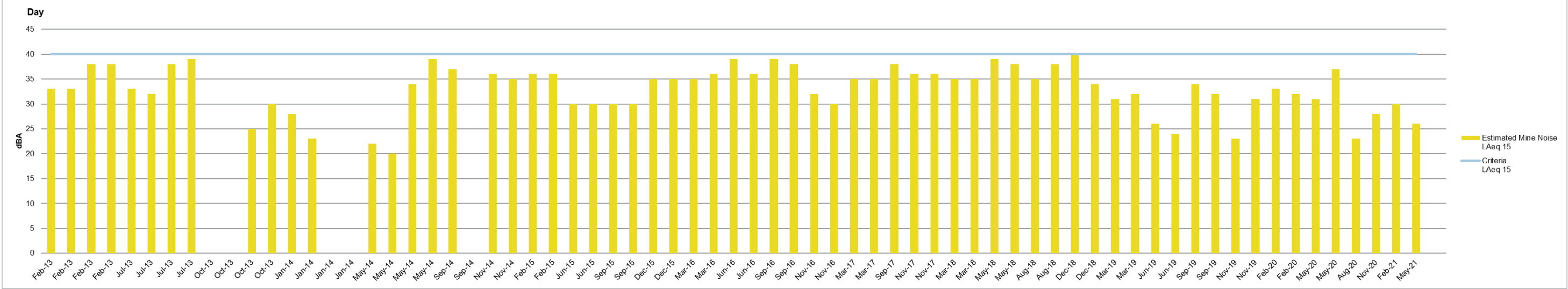
HVAS Results - Point 21 – PM10

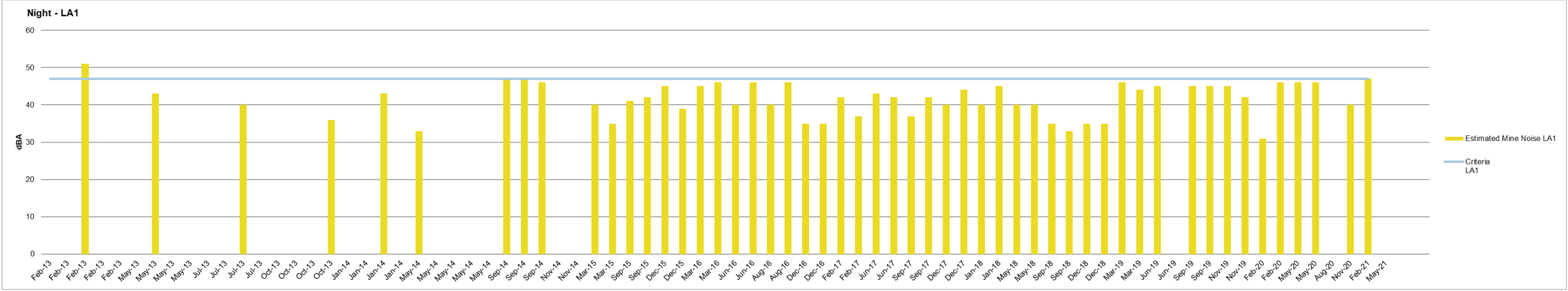
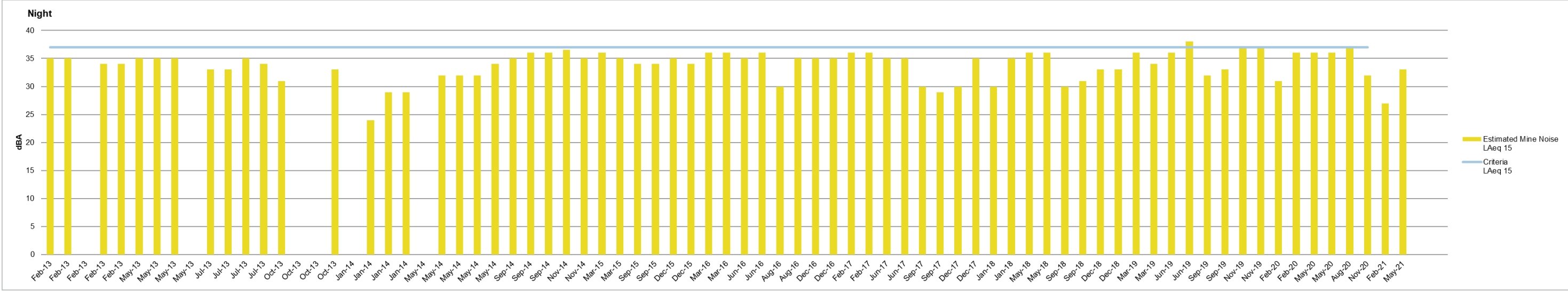
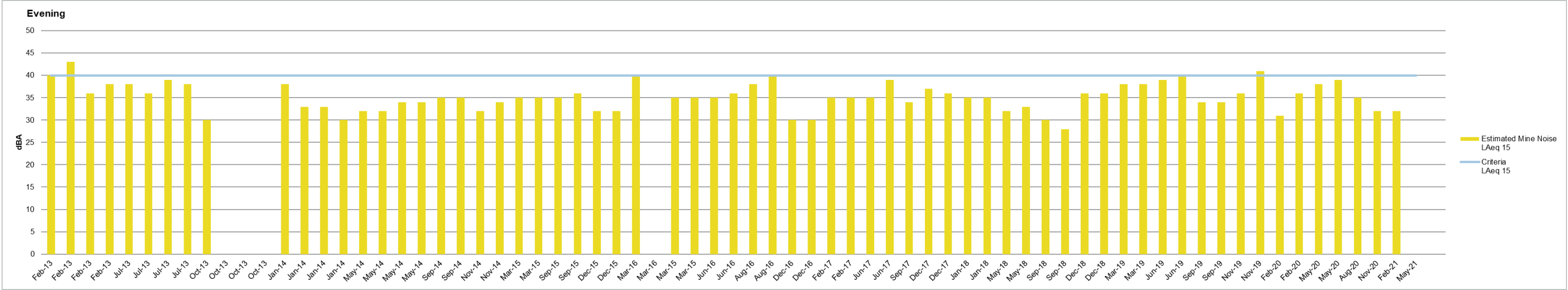


HVAS Results - Point 21 – TSP

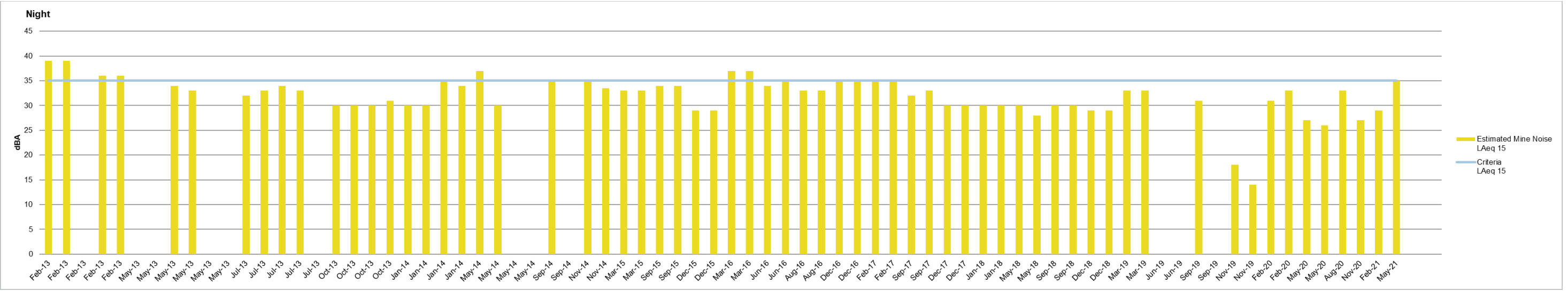
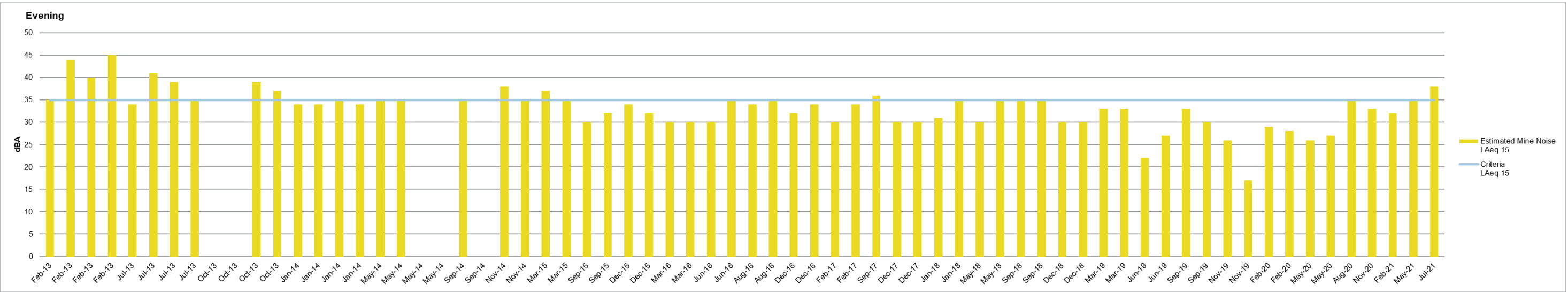
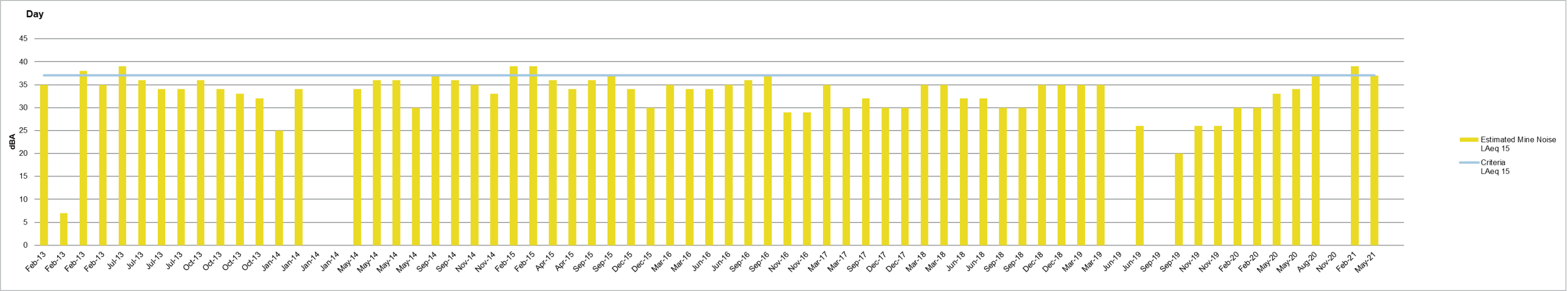


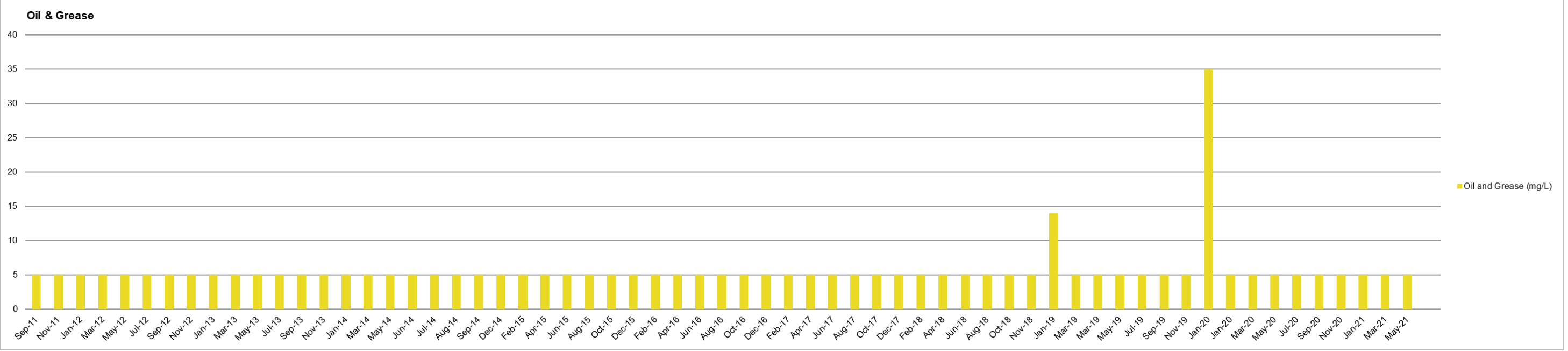
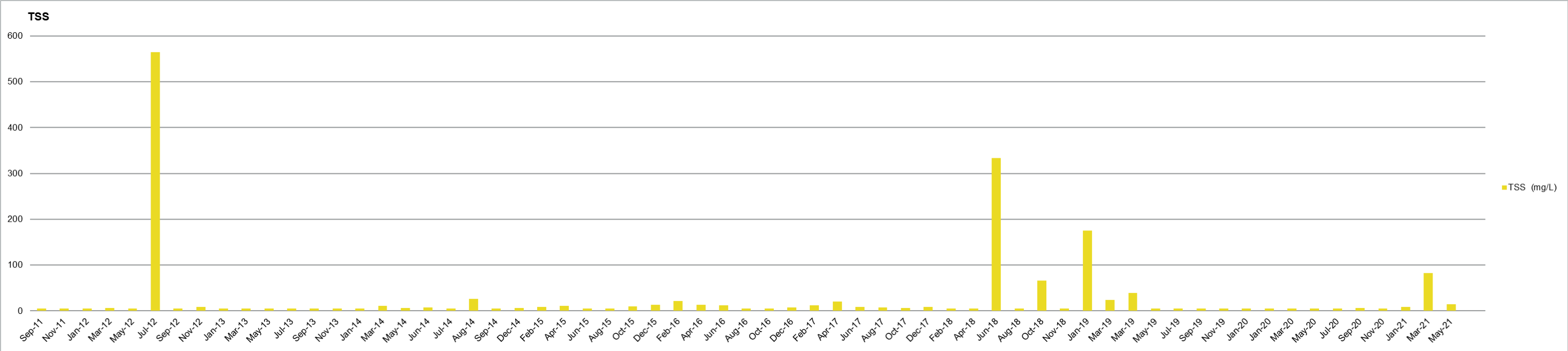
Noise Monitoring Results – R1

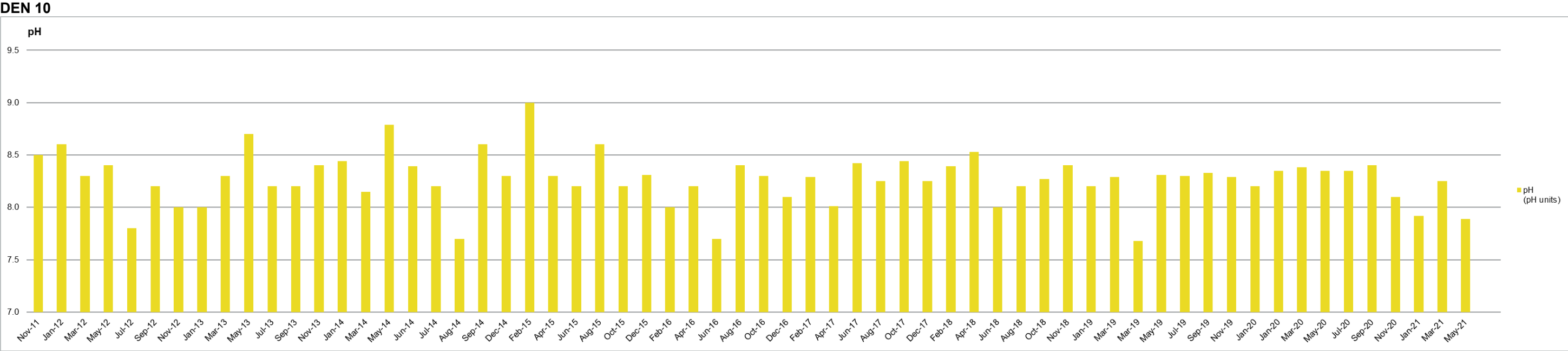
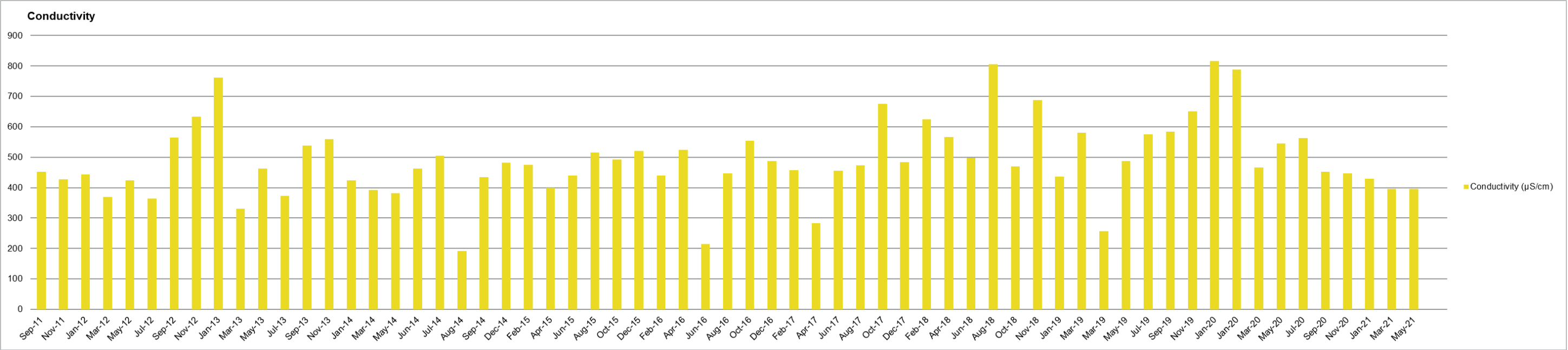


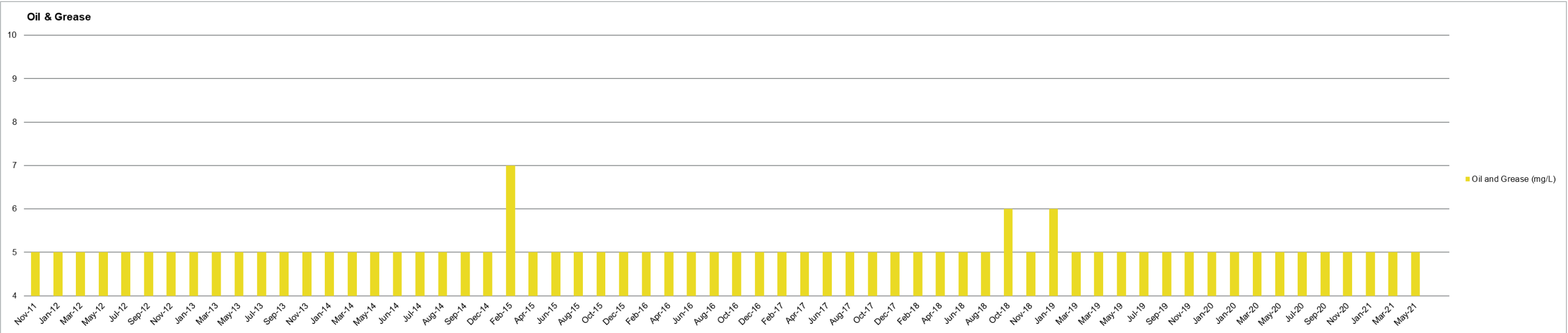
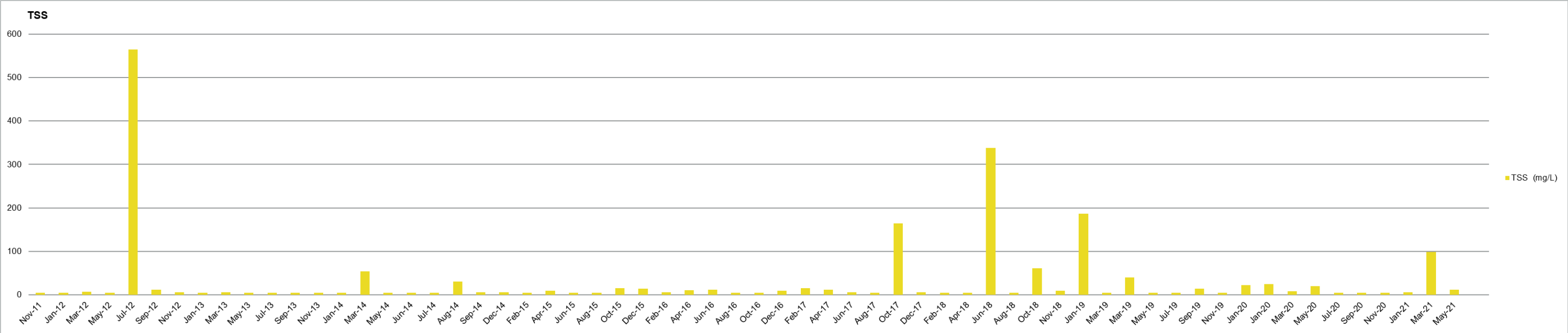


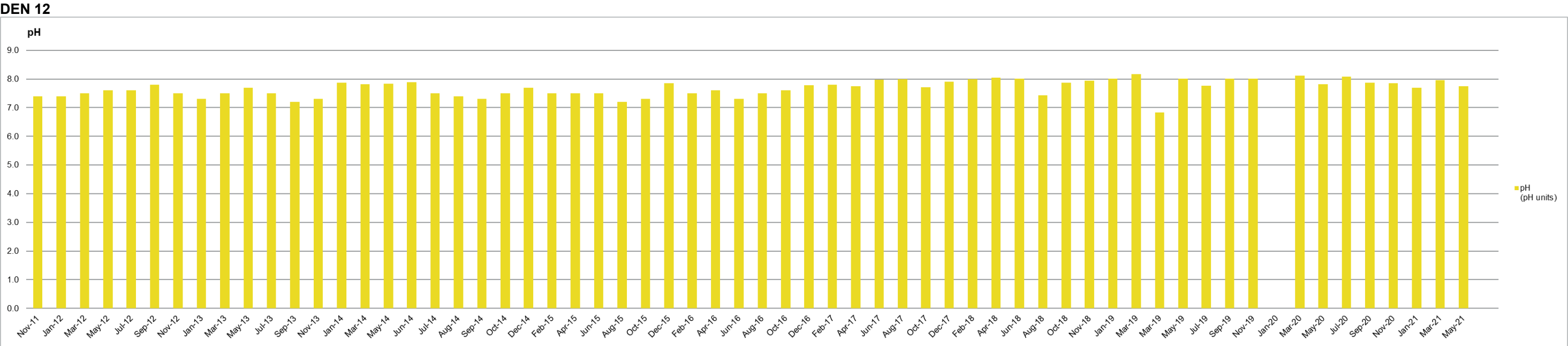
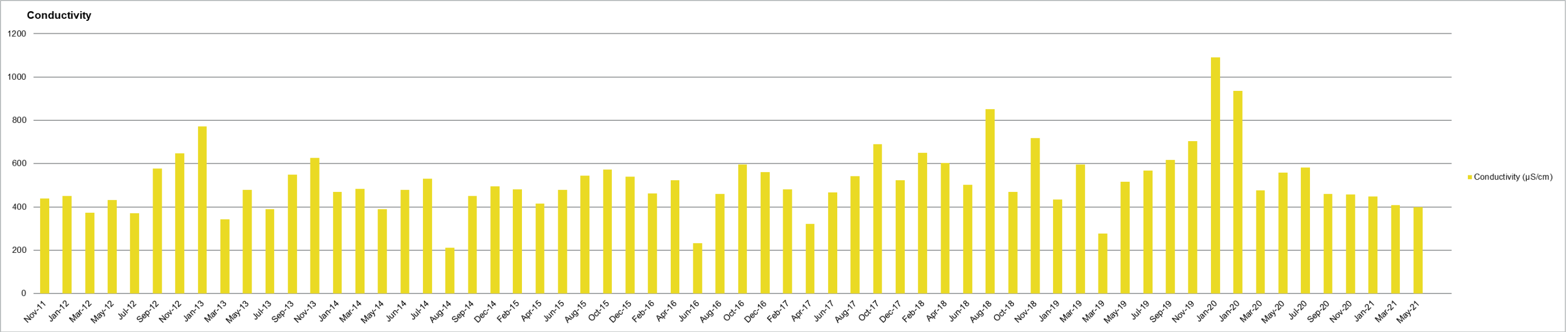
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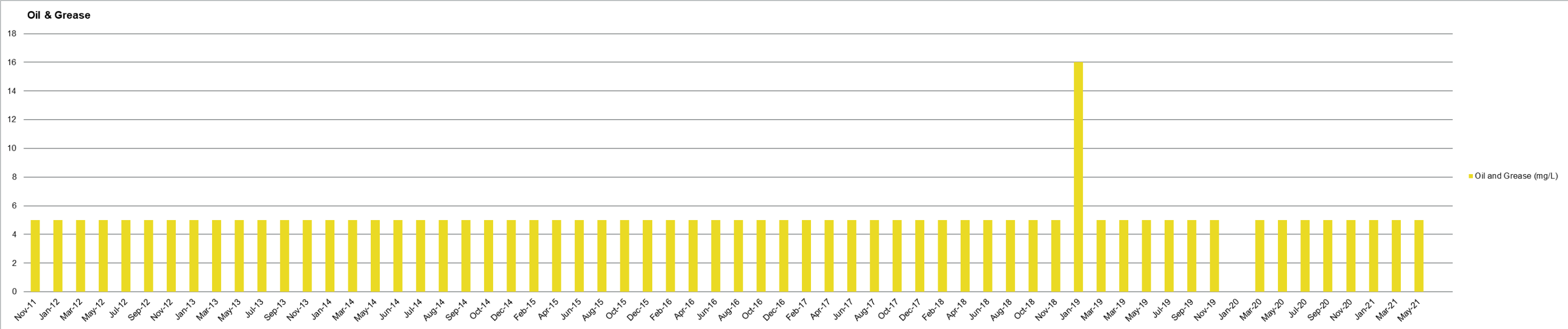
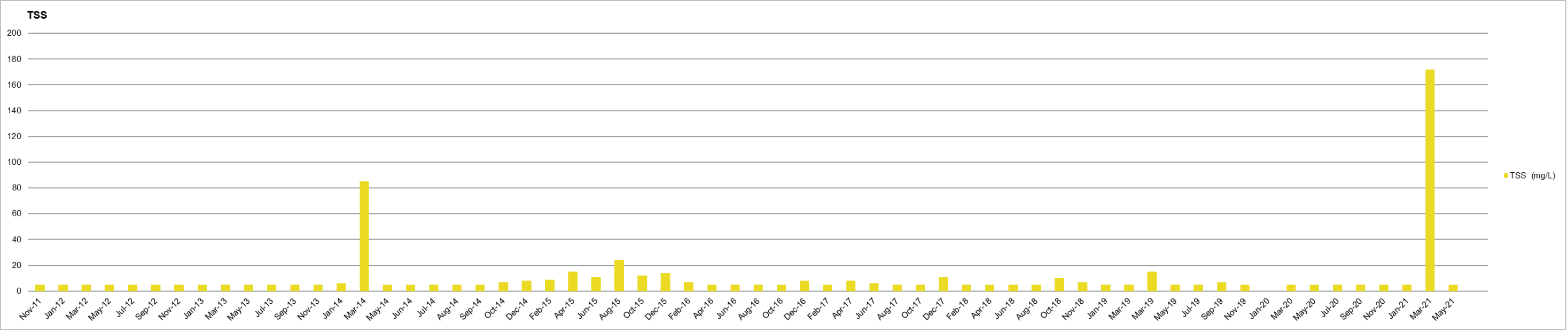


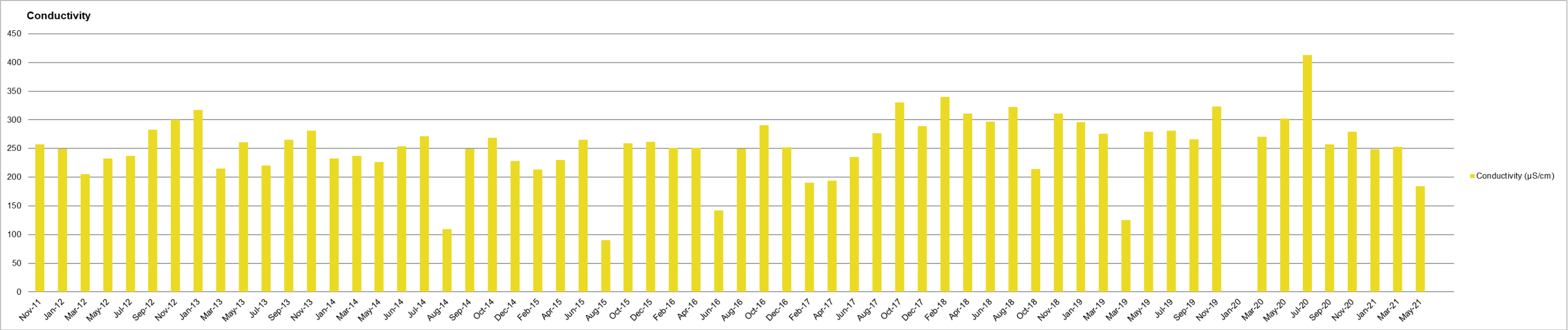




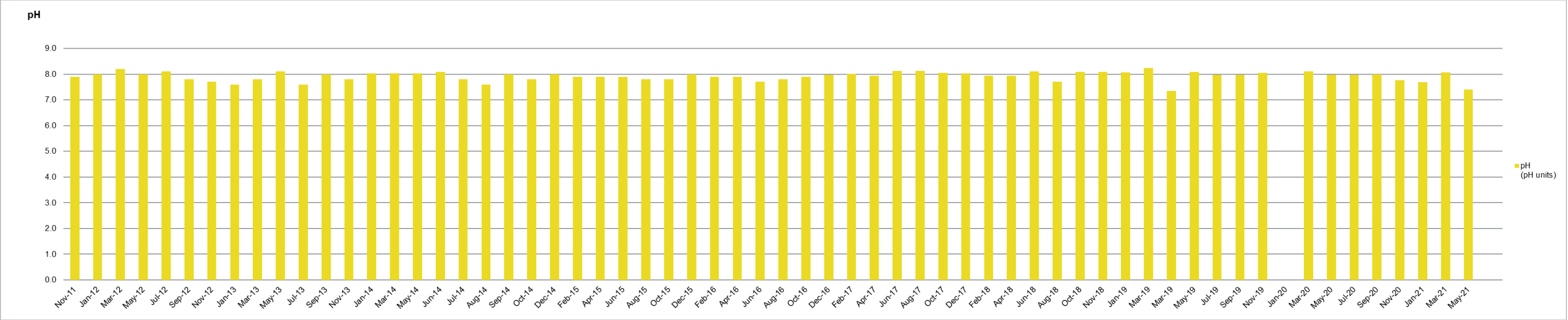


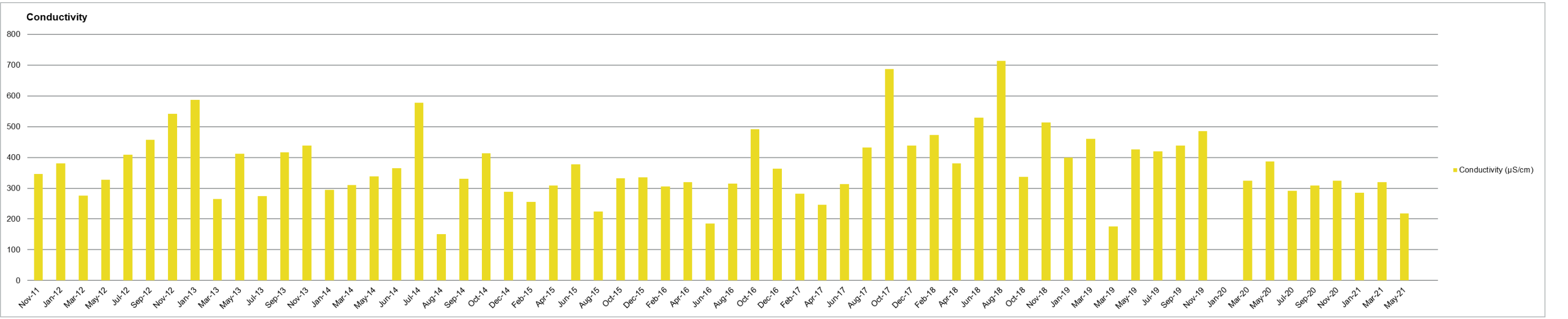
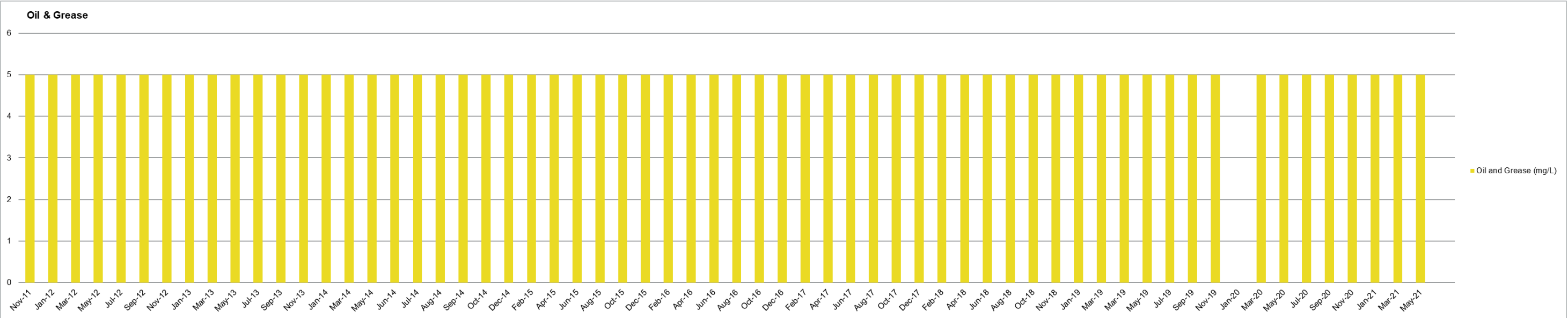
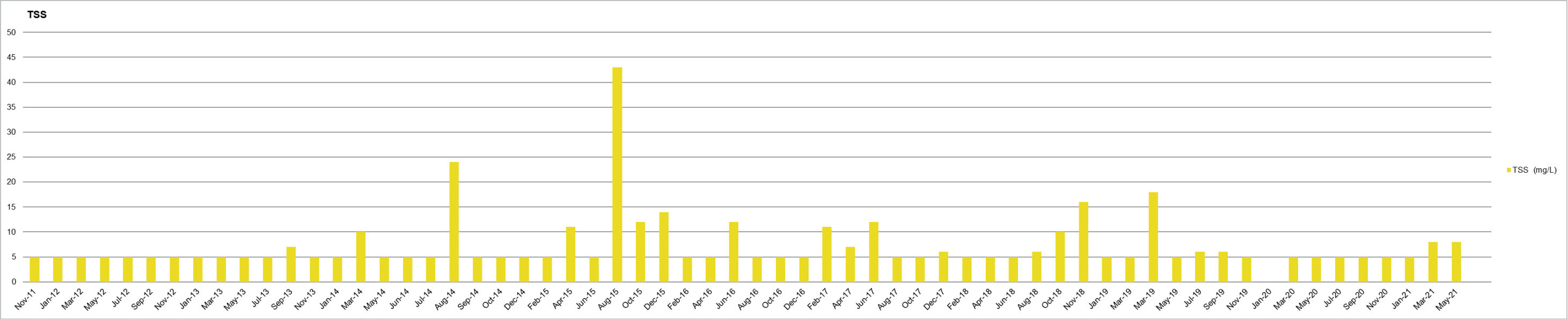




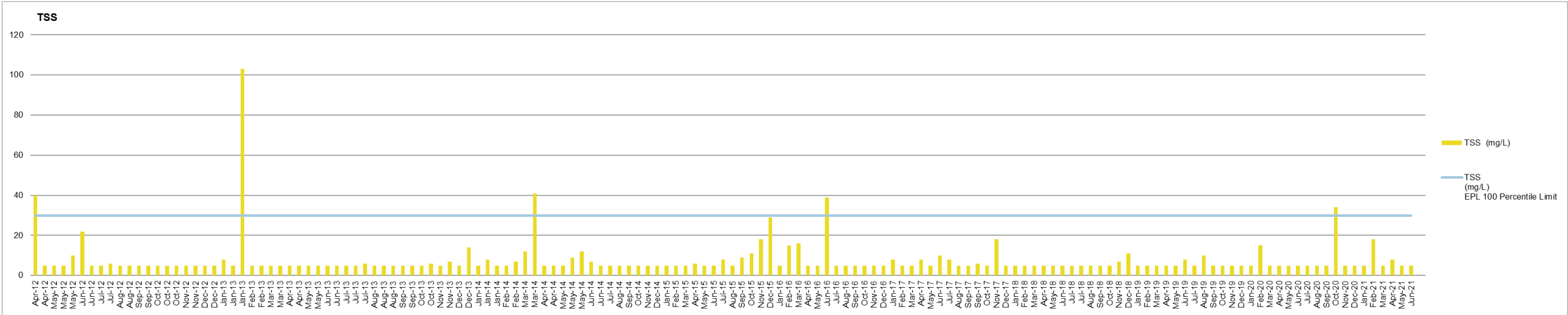
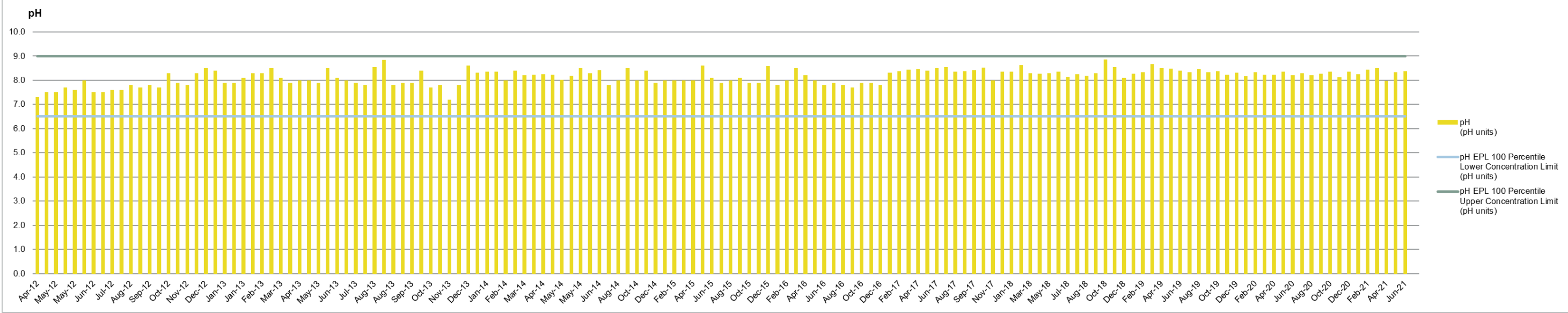


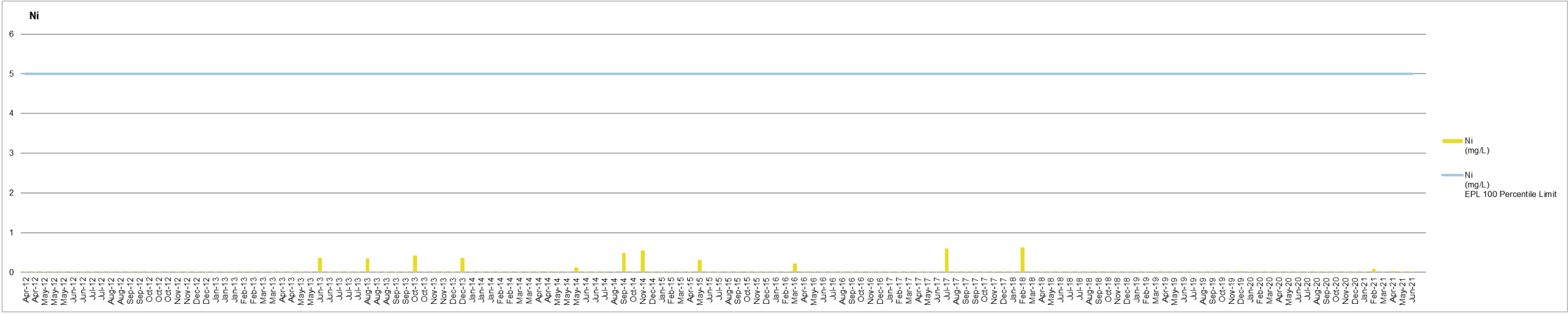
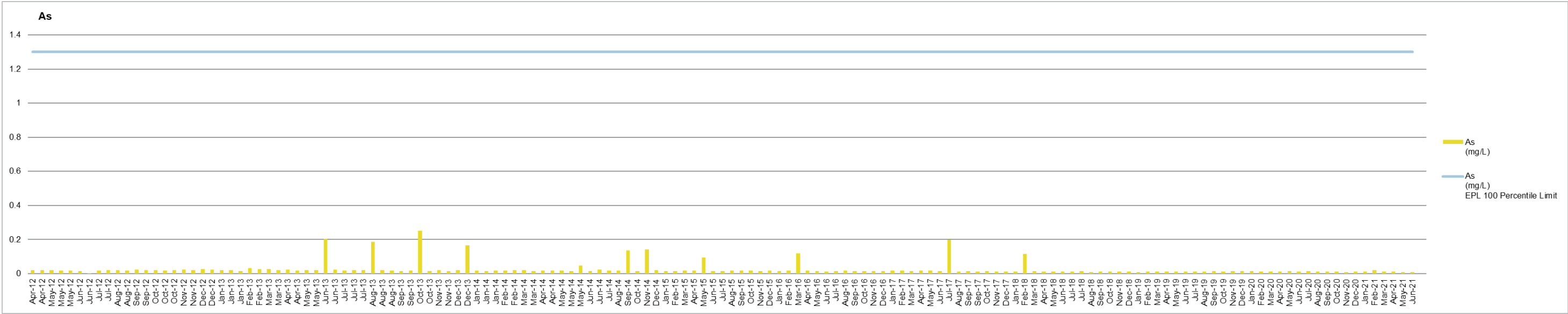
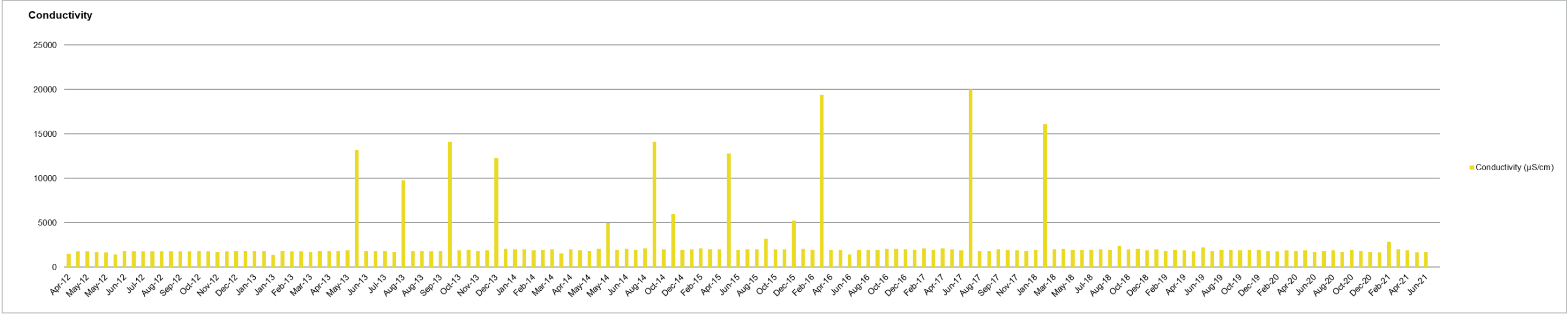
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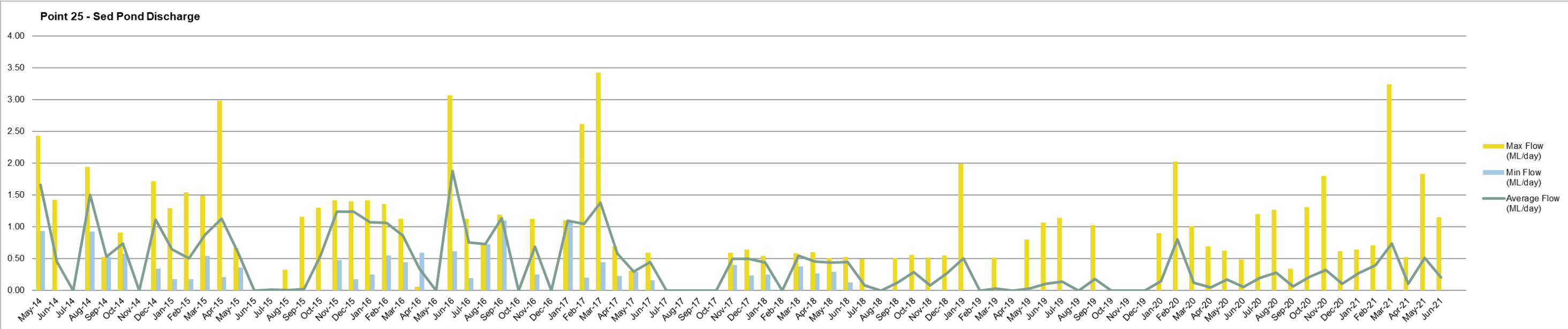
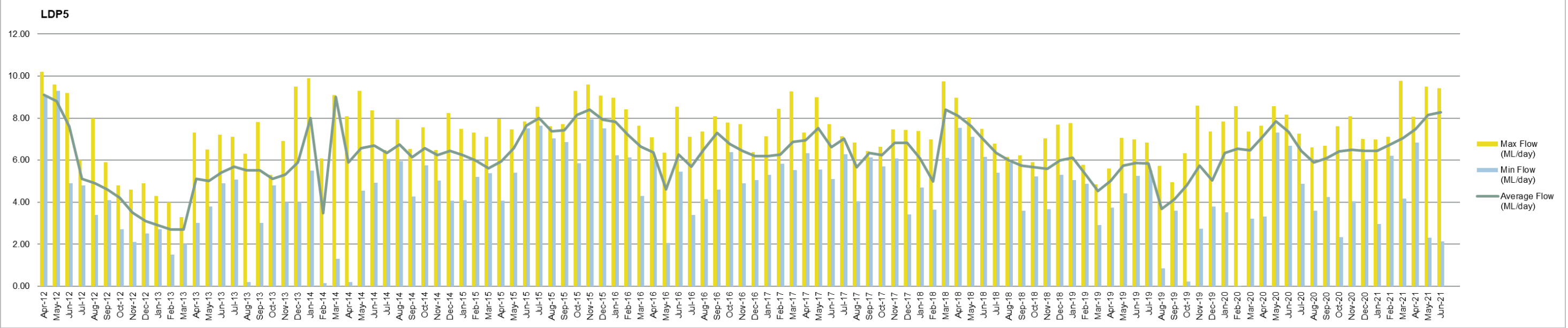


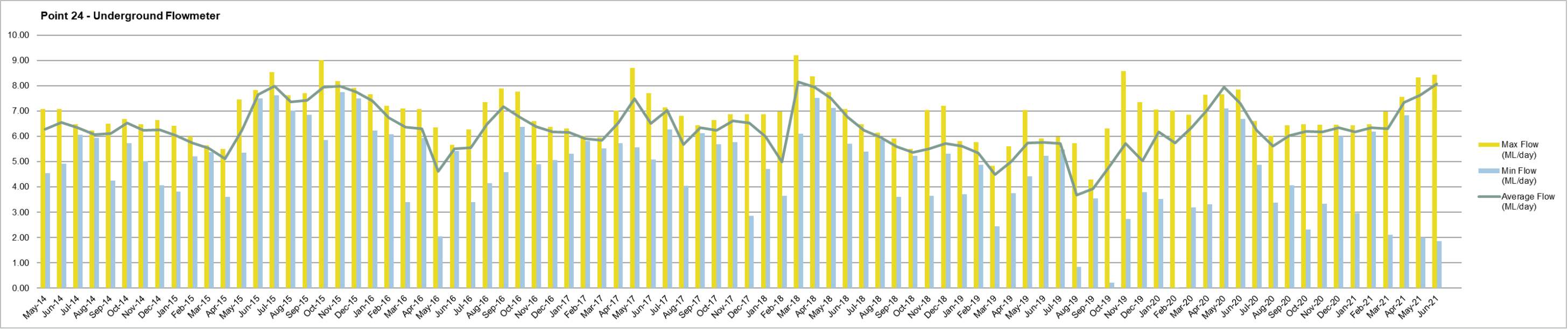
LDP5





Water Discharge Results – LDP5







Appendix 7: Subsidence monitoring program for Dendrobium Mine

SMP Commitments for the Reporting Period	Monitoring Frequency	Monitoring Undertaken
Subsidence Monitoring		
Airborne Laser Scanning (ALS) over Areas 3A and 3B – including 3D Digital Terrain Model (DTM)	ALS to be undertaken at conclusion of each longwall and 12 months after extraction is complete in each area	As per SMP commitments
Swamps and Tributary X-Lines	Monthly during mining for key features during active subsidence	As per SMP commitments
Avon Dam (+ LA4 Tributary)	Every 500 m extraction of Longwall	Swamp and tributary surveys: 1/07/2020, 4/08/2020, 3/09/2020, 9/10/2020, 12/11/2020, 10/12/2020, 18/02/2021, 15/04/2021, 3/05/2021, 26/05/2021, 29/07/2021.
Waterfall 54		Avon Dam: 19/12/2020, 16/04/2021, 24/06/2021.
Dendrobium 3D GPS network		Waterfall 54 was measured on: 4/09/2020, 14/10/2020, 12/11/2020, 26/02/2021, 12/04/2021, 14/05/2021, 25/06/2021, 29/07/2021 Dendrobium 3D GPS network: 10/12/2020
3D control survey	Conclusion of each longwall and 12 months after the completion of each area	As per SMP commitments
Water Courses		
Observational, Photo Point and Water Monitoring		



Avon Dam, Native Dog Creek, Wongawilli Creek, Donalds Castle Creek, WC6, WC7 WC8, WC9, WC12, WC15, WC16, WC18, WC21, LA2, LA3, LA4, LA4A, LA4B, LA5, ND1, LC5, CR36. Swamps 1a, 1b, 3, 4, 5, 8, 9, 10, 11, 13, 14, 23, 35a, 35b, 144 and 145	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 49, WC_Pool 46, WWM2, WC_Pool 43b, Wongawilli Ck (FR6), WC21_Pool 5, WC21_Pool 30, WC21_Pool 53, WC12_Pool 1, WC15_Pool 2, WC15_Pool 9, WC15_Pool 28, WC7_Pool 1, WC_S1, WC_Rockbar 39, Lake Avon and associated tributaries LA4_S1, LA4_S2, LA5_S1, LA5_S2, LA3_Pool 4, LA2_Pool 5, LA1, LA_1. Donalds Castle Creek Donalds Castle Ck (FR6), DCL3, DC_Pool 22, DC13_Pool 2b Sandy Creek and associated tributaries SCk_Rockbar 5, Sandy Creek Arm, SC10C_Pool 1, SC10_Rockbar 3 Native Dog and associated tributaries NDC_Pool 1, ND1_Pool 2, NDC1 Reference Sites LC5_S1, CR36_S1, Swamp 24_Pool 10 (D10),	Monthly monitoring during and post mining for two years or until required	As per SMP commitments
Flow		
Wongawilli Creek and associated tributaries WWU, WWL, WC21S1 and WC15S1, WC12S1 Donalds Castle Creek and associated tributaries DCU, DC13S1 and DCS2 Lake Avon and associated tributaries LA2S1, LA3S1, LA4S1 Native Dog Creek and associated tributaries	Continuous one-hour logging intervals	As per SMP commitments



NDT1S1

Sandy Creek and associated tributaries

SCL2, SC10S1, SC10CS1

Reference

O'Hares Creek at Wedderburn, LC5S1, CR36S1

Aquatic Ecology

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| <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 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 Monitoring target sites as mining progresses through the domain | <p>As per SMP commitments</p> |
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Terrestrial Fauna – Threatened Frog Species

- | | | |
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| <ul style="list-style-type: none"> 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 | <p>Surveys are undertaken in optimal periods over the season</p> | <p>As per SMP commitments</p> |
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Swamps

Observational, Photo Point and Water Monitoring

- | | | |
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| <p>Impact Sites:</p> <ul style="list-style-type: none"> Swamps 1a, 1b, 3, 4, 5, 8, 9, 10, 11, 13, 14, 23, 35A, 35B, 144 and 145 <p>Reference Sites:</p> <ul style="list-style-type: none"> Swamps 2, 7, 15a, 22, 24, 25, 33, 84, 85, 86, 87 and 88 | <p>Monthly two years pre and post mining, weekly when longwall is within 400 m of monitoring site</p> <p>Reference sites six-monthly</p> | <p>As per SMP commitments</p> |
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Erosion Monitoring

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| <p>Impact Sites:</p> <ul style="list-style-type: none"> Swamps 1A, 1B, 3, 4, 5, 8, 10, 11, 13, 14, 23, 35A and 35B | <p>Ground based surveys to be completed for each longwall after</p> | <p>As per SMP commitments</p> |
|---|---|-------------------------------|



Reference Sites:		each longwall or to define any new erosions identified by ALS survey
Swamps 2, 7, 15A, 22, 24, 25, 33, 84, 85, 86, 87 and 88		
Shallow Groundwater Level		
Impact Sites:	For open hole sites:	As per SMP commitments
Swamps 1a, 1b, 3, 4, 5, 8, 9, 10, 11, 13, 14, 23, 35A, 35B, 144 and 145	- Monthly baseline monitoring - Weekly monitoring during active subsidence - Monthly monitoring post mining for two years to be reviewed annually	
Reference Sites	For instrumented sites:	
Swamps 2, 7, 15A, 22, 25, 33, 84, 85, 86, 87 and 88	- Automatic groundwater level monitoring (four-hour interval or similar) - Monitoring post mining for five years to be reviewed annually	
Soil Moisture		
Impact Sites:	- 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	As per SMP commitments
Reference sites:	For instrumented sites:	
Swamps 2, 7, 15A, 22, 24, 25, 33, 84, 85, 86, 87 and 88	- Logged soil moisture level monitoring (four-hour intervals or similar) - Monitoring post mining for five years to be reviewed annually	
Terrestrial Flora – Composition and Distribution of Species		



15 m transects consisting of 30 0.5 m X 0.5 m quadrats. The monitoring records:	Surveys are undertaken in spring and autumn each year	As per SMP commitments
• 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		
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:	Surveys are undertaken in optimal periods over the season	As per SMP commitments
• 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		
Landscape		
Targeted Sites		
• Cliffs No targeted cliff lines/Steep slopes associated with Longwall 15 and Longwall 16 • Watercourses / Swamps – Refer to Dendrobium Area 3 Watercourse and Swamp Monitoring TARP's • Fire Trails Fire Roads 6A, 6N and 6P	• Baseline monitoring campaign prior to mining • Monthly monitoring during subsidence • Monitoring to continue six-monthly for two years following the completion of mining	As per SMP commitments
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 3B SMP • General observation of active mining areas. • During mining recording includes impacts to: – Drainage	• Weekly monitoring when longwall extraction is within 400 m	As per SMP commitments



- Disturbance of site erosion
- Aggradations
- Inundation
- Rock fracturing
- Changes in runoff
- Changes in vegetation
- Impacts to fauna / fish
- Rockfalls
- Soil cracking
- Slumping

Terrestrial Fauna

- | | | |
|--|---|------------------------|
| <ul style="list-style-type: none"> • A number of sites located across and around Areas 2, 3A and 3B. Refer to Dendrobium Area 3A SMP • Monitoring parameters include: <ul style="list-style-type: none"> - Vegetation communities - Vegetation condition - Changes in vegetation - Tree health - Swamp vegetation - Threatened species • Control sites | <ul style="list-style-type: none"> • 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 |
| <ul style="list-style-type: none"> • A number of sites located across and around Areas 2, 3A and 3B. Refer to Dendrobium Area 3A SMP • Monitoring parameters include: <ul style="list-style-type: none"> - Species and habitat characteristics • Targeted surveys and monitoring of known populations of threatened frog species | <ul style="list-style-type: none"> • 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



- | | | |
|---|--|-------------------------------|
| <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 | <p>As per SMP commitments</p> |
|---|--|-------------------------------|



Appendix 8: 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_LW16_022	Rock Fracturing	Railway Corridor	7/07/2020	3	Rock fracturing to cut-through of railway corridor.	10/07/2020
DA3B_LW16_022 (Update)	Rock Fracturing	Railway Corridor	6/08/2020	3	Rock fracturing to cut-through of railway corridor.	10/08/2020
DA3B_LW16_023	Soil Cracking	Fire Road 6A	7/07/2020	1	Soil cracking across Fire Road 6A.	10/07/2020
DA3B_LW16_024	Rock Fracturing & Soil Cracking	Access Track	6/08/2020	1	Rock fracturing and soil cracking to rehabilitated access track between Swamp 14 and Fire Road 6A.	10/08/2020
DA3B_LW16_025	Rock Fracturing	Steep Slope/ Step	6/08/2020	1	Rock fracturing to steep slope between Swamp 14 and Fire Road 6A.	10/08/2020
DA3B_LW16_026	Rock Fracturing	Steep Slope/ Step	6/08/2020 & 24/08/2020	1	Rock fracturing to steep slope between Swamp 14 and Fire Road 6P.	10/08/2020 & 27/08/2020
DA3B_LW16_026 (Update)	Rock Fracturing	Steep Slope/ Step	24/08/2020	1	Rock fracturing to steep slope between Swamp 14 and Fire Road 6P.	27/08/2020
DA3B_LW16_027	Soil Cracking	Fire Road 6P	21/08/2020	1	Soil cracking to Fire Road 6P.	27/08/2020
DA3B_LW16_028	Rock Fracturing	WC15	31/08/2020	2	Rock fracture to rockbar/step above WC15_Pool 34.	1/09/2020
DA3B_LW16_029	Rockfall	Steep Slope/ Step	31/08/2020	1	Rockfall to step on western slope of WC15 valley.	1/09/2020
DA3B_LW16_030	Erosion	WC15	31/08/2020 & 9/9/2020	1	Localised erosion on tributary WC15.	1/09/2020 & 14/09/2020
DA3B_LW16_030 (Update)	Erosion	WC15	9/9/2020	1	Localised erosion on tributary WC15.	14/09/2020
DA3B_LW16_031	Rock Fracturing and Rockfall	Cliff line	14/09/2020	1	Rock fracturing on cliff line to the north-west of WC15.	30/09/2020
DA3B_LW16_032	Soil Cracking	Bushland	28/09/2020	1	Soil cracking to the north-west of WC15.	30/09/2020



Site ID	Impact Type	Feature Affected	Identification Date	Trigger Level	Description	Refer to Impact Report/s Dated
DA3B_LW16_033	Soil Cracking	Access Track	28/09/2020	1	Soil cracking on an access track parallel to WC15.	30/09/2020
DA3B_LW16_034	Soil Cracking	Access Track	28/09/2020	1	Soil cracking on an access track parallel to WC15.	30/09/2020
DA3B_LW16_035	Soil Cracking and Displacement	Steep Slope/ Step	28/09/2020	1	Soil cracking and displacement near SLMMP site A3B-SS17.	30/09/2020
DA3B_LW16_036	Rock Fracturing	A3B-SS17	28/09/2020	1	Rock fracturing to a cliff line at SLMMP site A3B-SS17.	30/09/2020
DA3B_LW16_037	Soil Cracking	Access Track	28/09/2020	1	Soil cracking on an access track parallel to WC15.	30/09/2020
DA3B_LW16_038	Iron Staining	LA2	14/09/2020	1	Ironing staining present at LA2_Pool34.	30/09/2020
DA3B_LW16_039	Soil Cracking	Access Track	7/10/2020	1	Soil cracking to access track, east of Swamp 14.	12/10/2020
DA3B_LW16_040	Soil Cracking	Access Track	7/10/2020	1	Soil cracking to access track, east of Swamp 14.	12/10/2020
DA3B_LW16_041	Soil Cracking and Displacement	Access Track	7/10/2020	1	Soil cracking to access track, east of Swamp 14.	12/10/2020
DA3B_LW16_042	Soil Cracking	Access Track	7/10/2020	1	Soil cracking to access track, east of Swamp 14.	12/10/2020
DA3B_LW16_043	Soil Cracking	Access Track	7/10/2020	1	Soil cracking to access track, east of Swamp 14.	12/10/2020
DA3B_LW16_044	Soil Cracking, Rock Fracturing & Displacement	Steep Slope	10/11/2020	2	Soil cracking, rock fracturing and displacement on steep slope east of Swamp 14.	16/11/2020
DA3B_LW16_045	Rock Fracturing	Steep Slope	10/11/2020	1	Rock fracturing to a steep slope east of Swamp 14.	16/11/2020
DA3B_LW16_046	Rock Fracturing	Steep Slope/ Step	25/11/2020	1	Rock fracture to a steep slope/step east of Swamp 14.	27/11/2020
DA3B_LW16_047	Rock Fracturing	Steep Slope/ Step	30/11/2020	1	Rock fracturing to steep slope east of Swamp 14.	2/12/2020
DA3B_LW16_048	Rock Fracturing	Rock Outcrop	30/11/2020	1	Rock fracture to rock outcrop west of Swamp 14.	2/12/2020



Site ID	Impact Type	Feature Affected	Identification Date	Trigger Level	Description	Refer to Impact Report/s Dated
DA3B_LW16_049	Rock Fracturing & Fragmentation	Steep Slope/ Step	30/11/2020	2	Rock fracturing and fragmentation to steep slope west of <i>Swamp 14</i> .	2/12/2020
DA3B_LW16_050	Rock Fracturing	Steep Slope/ Step	30/11/2020	1	Rock fracture to steep slope west of <i>Swamp 14</i> .	2/12/2020
DA3B_LW16_051	Rock Fracturing and Soil Cracking	Rock Outcrop & Bushland	30/11/2020	2	Rock fracturing and soil cracking to rock outcrop and bushland west of <i>Swamp 14</i> .	2/12/2020
DA3B_LW16_052	Soil Cracking	Bushland	1/12/2020	1	Soil cracking in bushland to the west of <i>Swamp 14</i> .	2/12/2020
DA3B_LW14_017 (Update)	Rock Fracturing & Displacement	WC15	9/09/2020	2	Additional rock fracturing and displacement on tributary <i>WC15</i> .	14/09/2020
DA3B_LW14_019 (Update)	Rock Fracturing, Uplift & Displacement	WC15	9/09/2020	2	Additional rock fracturing, uplift and displacement near tributary <i>WC15</i> .	14/09/2020
DA3B_LW15_026 (Update)	Rock Fracturing	Steep Slope/ Step	24/08/2020	1	Rock fracturing to steep slope between <i>Swamp 14</i> and <i>Fire Road 6P</i> .	27/08/2020
DA3_LW8_158 (Update)	Iron Staining	<i>Sandy Creek</i>	14/10/2020	2	Increase in iron staining for >2 consecutive months in <i>Sandy Creek</i> .	19/10/2020
DA3B_LW17_001	Rock fracturing, uplift & fragmentation.	LA2	05/02/2021	2	Rock fracturing, uplift and fragmentation to <i>LA2_Channel 6B</i> .	10/02/2021
DA3B_LW17_002	Rock fracturing, uplift & fragmentation.	LA2	10/02/2021	2	Rock fracturing, uplift and fragmentation to <i>LA2_Rockbar 25</i> .	16/02/2021
DA3B_LW17_002 (update)	Rock Fracturing, Uplift and Fragmentation	LA2	10/03/2021	2	Rock fracturing, uplift and fragmentation to <i>LA2_Rockbar 25</i> and <i>LA2_Pool 25</i> .	12/03/2021
DA3B_LW17_003	Rock fracturing & rockfall.	LA2	10/02/2021	2	Rock fracturing, uplift and fragmentation to <i>LA2_Rockbar 24</i> .	16/02/2021
DA3B_LW17_003 (update)	Rock fracturing, uplift & rockfall.	LA2	10/03/2021	2	Rock fracturing, uplift and rockfall to <i>LA2_Rockbar 24</i> , <i>LA2_Pool 24</i> and <i>LA2_Step 24</i> .	12/03/2021 & 14/04/2021
DA3B_LW17_004	Rock fracturing & uplift	LA2	10/03/2021	2	Rock fracturing and uplift to <i>LA2_Rockbar 10</i> .	12/03/2021



Site ID	Impact Type	Feature Affected	Identification Date	Trigger Level	Description	Refer to Impact Report/s Dated
DA3B_LW17_005	Rock fracturing	LA2	10/03/2021	2	Rock fracturing to LA2_Pool 12.	12/03/2021
DA3B_LW17_006	Rock Fracturing, Uplift & Soil Cracking	LA2	10/03/2021	2	Rock fracturing, soil cracking and uplift to LA2_Pool 14.	12/03/2021
DA3B_LW17_007	Rock Fracturing & Uplift	LA2	10/3/2021	2	Rock fracturing & uplift LA2_Rockbar 14.	12/03/2021
DA3B_LW17_008	Rockfall	Steep Slope/ Step	10/3/2021	2	Rockfall at Steep slope/step adjacent to LA2.	12/03/2021
DA3B_LW17_009	Rockfall	Steep Slope/ Step	10/3/2021	2	Rockfall at Steep slope/ step adjacent to LA2.	12/03/2021
DA3B_LW17_010	Rock Fracturing	Steep Slope/ Step	13/04/2021	1	Rock fracturing to step/steep slope.	14/04/2021
DA3B_LW17_011	Rock Fracturing	Steep Slope/ Step	13/04/2021	2	Rock fracturing to step/steep slope.	14/04/2021
DA3B_LW17_012	Rock Fracturing	LA2	13/04/2021	2	Rock fracturing and displacement around LA2_Pool 9 and upstream rockbar.	14/04/2021
DA3B_LW17_013	Rock Fracturing	LA2	13/04/2021	2	Rock fracturing to LA2_Channel 8.	14/04/2021
DA3B_LW17_014	Soil Cracking	Fire Road 6A	18/05/2021	2	Zone of soil cracking (multiple) extending over Fire Road 6A and adjacent clearing	20/05/2021
DA3B_LW17_015	Soil Cracking	Access Track	18/05/2021	1	Soil crack on access track off Fire Road 6A.	20/05/2021
DA3B_LW17_016	Rock Fracturing	Rock Outcrop	25/05/2021	1	Rock fracturing to a rock outcrop, west of Fire Road 6A.	28/05/2021
DA3B_LW17_017	Rock Displacement	Rock Outcrop	25/05/2021	1	Rock displacement from soil, west of Fire Road 6A.	28/05/2021
DA3B_LW17_018	Soil Cracking	Fire Road 6A	25/05/2021	1	Soil cracking to Fire Road 6A.	28/05/2021
DA3B_LW17_019	Soil Cracking and Rock Fracturing	Bushland	8/06/2021	3	Soil cracking and rock fracturing in bushland west of Fire Road 6A.	9/06/2021
DA3B_LW17_020	Soil Cracking	Fire Road 6A	8/06/2021	1	Soil cracking to Fire Road 6A.	9/06/2021



Site ID	Impact Type	Feature Affected	Identification Date	Trigger Level	Description	Refer to Impact Report/s Dated
DA3B_LW17_021	Rock Fracturing	Steep Slope/Step	8/06/2021	1	Rock fracturing to step/steep slope.	9/06/2021
DA3B_LW17_022	Rock Fracturing	Bushland	22/06/2021	1	Fracturing to rock outcrop in bushland to east of <i>Fire Road 6A</i> .	25/06/2021
DA3B_LW17_023	Rock Fracturing	Bushland	22/06/2021	2	Fracturing to rock outcrop in bushland to east of <i>Fire Road 6A</i> .	25/06/2021
DA3B_LW17_024	Rock Fracturing	Rock outcrop	24/06/2021	1	Fracturing to rock outcrop adjacent to <i>Fire Road 6A</i> .	25/06/2021
Swamp 13 (HGEO)	Soil Moisture	Swamp 13	N/A	2	Soil moisture at all sensors dropped to lowest levels during 2017-2019. Apparent recovery in 2020 at 13_S03. Other sensors record lower moisture levels than baseline.	HGEO (2021)
Swamp 14 (HGEO)	Soil Moisture	Swamp 14	N/A	2	Soil moisture at 14_01 dropped below baseline (except for drought) in 2020 in contrast to recovery at reference swamps. 14_02 shows recovery from drought in 2020. Mining effect at 14_02 possible but not yet clear.	HGEO (2021)
14_01 (IMCEFT)	Shallow Groundwater Trigger	Swamp 14	9/09/2020	3	Rate of recession groundwater trigger in <i>Swamp 14</i> .	14/09/2020 & 16/11/2020
Swamp 11 (HGEO)	Shallow Groundwater	Swamp 11	N/A	3	All three piezometers show mostly desaturated conditions following the passage of Longwall 14 with only brief periods of saturation following rainfall events.	HGEO (2021)
Swamp 14 (HGEO)	Shallow Groundwater	Swamp 14	N/A	3	Evidence for impact to swamp groundwater levels at 14_01 and 14_02 following Longwall 16 and Longwall 15 respectively.	HGEO (2021)
Swamp 23 (HGEO)	Shallow Groundwater	Swamp 23	N/A	2	Evidence for impact to swamp groundwater levels and duration at 23_01 following Longwall 15; Possible effects at 23_02 but unclear as of Longwall 16 end date.	HGEO (2021)



Site ID	Impact Type	Feature Affected	Identification Date	Trigger Level	Description	Refer to Impact Report/s Dated
LA4_S1	Water Quality Trigger	LA4	3/08/2020	1	Trigger for dissolved oxygen at LA4_S1.	5/08/2020
LA4_S1	Water Quality Trigger	LA4	3/08/2020 & 1/09/2020	2	Trigger for electrical conductivity at LA4_S1.	5/08/2020 & 14/09/2020
LA4_S1	Water Quality Trigger	LA4	3/08/2020 & 1/09/2020	2	Trigger for pH at LA4_S1.	5/08/2020 & 14/09/2020
LA4_S1	Water Quality Triggers	LA4	18/02/2021	2	Trigger for pH at LA4_S1	17/03/2021
LA4_S1	Water Quality Triggers	LA4	18/02/2021	2	Trigger for electrical conductivity at LA4_S1	17/03/2021
LA4_S1	Water Quality Trigger	LA4	7/06/2021	3	Trigger for pH at LA4_S1.	9/06/2021
DCU	Surface Water Hydrology	Donalds Castle Creek	N/A	1	Frequency and duration of ecologically-significant cease-to-flow events.	HGEO (2021)
DCS2	Surface Water Hydrology	Donalds Castle Creek	N/A	3	General hydrological behaviour.	HGEO (2021)
				3	Frequency and duration of ecologically-significant cease-to-flow events.	
				3	Changes to median flow.	
DC13S1	Surface Water Hydrology	DC13	N/A	3	General hydrological behaviour.	HGEO (2021)
				2	Frequency and duration of ecologically-significant cease-to-flow events.	
				3	Changes to median flow.	
WC21S1	Surface Water Hydrology	WC21	N/A	3	General hydrological behaviour.	HGEO (2021)
				2	Frequency and duration of ecologically-significant cease-to-flow events.	
				3	Changes to median flow.	
WC15S1	Surface Water Hydrology	WC15	N/A	3	General hydrological behaviour.	HGEO (2021)
				3	Changes to median flow.	



Site ID	Impact Type	Feature Affected	Identification Date	Trigger Level	Description	Refer to Impact Report/s Dated
LA4S1	Surface Water Hydrology	LA4	N/A	1	General hydrological behaviour.	HGEO (2021)
				3	Changes to median flow.	
LA3S1	Surface Water Hydrology	LA3	N/A	3	General hydrological behaviour.	HGEO (2021)
				3	Frequency and duration of ecologically-significant cease-to-flow events.	
				3	Changes to median flow.	
LA2S1	Surface Water Hydrology	LA2	N/A	3	Changes to median flow.	HGEO (2021)
Wongawilli Creek	Surface Water Hydrology	Wongawilli Creek	February 2020	2	Surface flow observations.	HGEO (2021)
Donalds Castle Creek	Aquatic Ecology	Donalds Castle Creek	N/A	3	Reduction in aquatic habitat for >2 years or complete loss of habitat following the active subsidence period.	Cardno (2021)
Swamp 15A	Terrestrial Ecology (Flora)	Swamp 15B	N/A	2	A statistically significant difference in Total species richness and Species composition.	Niche (2021)
Swamp 15B	Terrestrial Ecology (Flora)	Swamp 15B	N/A	2	A statistically significant difference in Total species richness and Species composition.	Niche (2021)
Swamp 1B	Terrestrial Ecology (Flora)	Swamp 1B	N/A	1	A statistically significant difference in Total species richness.	Niche (2021)
				Exceeding prediction	A statistically significant difference in Species composition.	
Swamp 8	Swamp Extent	Swamp 8	N/A	1	Two years of decline in total swamp extent greater than the mean ($\pm$ SE) decline of the control group.	Niche (2021)
Swamp 23	Terrestrial Ecology (Flora)	Swamp 23	N/A	1	A statistically significant difference in Total species richness.	Niche (2021)
SC10C	Terrestrial Ecology (Fauna)	SC10C	N/A	2	Appearance at SC10C (fractured bedrock and iron flocculant) and habitat unlikely to naturally regenerate	Niche (2021)



Site ID	Impact Type	Feature Affected	Identification Date	Trigger Level	Description	Refer to Impact Report/s Dated
					within the monitoring period.	
SC10(1)	Terrestrial Ecology (Fauna)	SC10	N/A	2	Appearance at SC10(1) (fractured bedrock and iron flocculant present at 13 of the 14 pools recorded) and habitat unlikely to naturally regenerate within the monitoring period.	Niche (2021)
WC17	Terrestrial Ecology (Fauna)	WC17	N/A	2	Appearance at WC17 (fractured bedrock and iron flocculant present since 2017) and habitat unlikely to naturally regenerate within the monitoring period.	Niche (2021)
DC(1)	Terrestrial Ecology (Fauna)	Donalds Castle Creek	N/A	3	Reduction in habitat (dry pools for extended times) at DC(1) for more than 2 years following the active subsidence period.	Niche (2021)
DC13	Terrestrial Ecology (Fauna)	DC13	N/A	3	Continued reduction in habitat (fractured bedrock) at DC13 for more than 2 years following the active subsidence period.	Niche (2021)
WC15	Terrestrial Ecology (Fauna)	WC15	N/A	1	Reduction in habitat (dry pools for extended times) for 2 years following the active subsidence period.	Niche (2021)
WC21	Terrestrial Ecology (Fauna)	WC21	N/A	3	Continued reduction in habitat (fractured bedrock) for more than 2 years following the active subsidence period.	Niche (2021)



Appendix 9: Rehabilitation status of FY21 exploration activities in CCL 768

Appendix 9: Rehabilitation status of FY21 exploration activities in CCL 768

Approval ID	Borehole ID	Approved Area	Area disturbed	Area rehabilitated	Area not rehabilitated	Comments and status
Exploration Boreholes						
Survey 16 DOC18/507270	S2451/ S16-21	1600m ² - pad 1320m ² – primary clearing access track 1840m ² - secondary clearing access track	1050 m ² – pad 3160 m ² – access tracks	1050 m ² – pad 3160 m ² – access tracks	0 m ²	Fully remediated.
Survey 17 MAAG0004533	S2496/ D-A3C- S17-19	1600 m ² – pad only	1000 m ² – pad only	1000 m ²	0 m ²	Fully remediated.
Survey 16 Add 2 MAAG0004533	S2503/ S17-02	1600 m ² - pad 3000 m ² – primary clearing access track	1600 m ² – pad 3000 m ² – primary clearing access track	0 m ²	1600 m ² – pad 3000 m ² – access tracks remain open for groundwater monitoring.	Hole instrumented, with standpipe on site. This will require final remediation.
Survey 16 Add 2 MAAG0004533	S2504/ S17-17	1600 m ² - pad 80 m ² – primary clearing access track (Additional access uses track from previously	700 m ² – pad 80 m ² – primary clearing access track	0 m ²	700 m ² – pad 80 m ² – primary clearing access track	Hole instrumented, with standpipe on site. This will require final remediation. Site rehabilitation in progress.

		approved borehole).				
Survey 17 MAAG0004533	S2508/ D-A3C- S17-17	1600 m ² - pad 980 m ² - secondary clearing access track (Additional access uses track from previously approved borehole).	1050 m ² – pad 980 m ² - secondary clearing access track	0 m ²	1050m ² – pad 980m ² - secondary clearing access track	Hole instrumented, with standpipe on site. This will require final remediation. Site rehabilitation is in progress, the track will remain open for groundwater monitoring.
Survey 17 MAAG0004533	S2509/ D-A3C- S17-18	1600 m ² - pad 2900 m ² – primary clearing access track 60 m ² - secondary clearing access track	1225 m ² – pad 2960 m ² – access tracks	0 m ²	1225 m ² – pad 2960 m ² – access tracks	Site rehabilitation is in progress, the track will remain open for groundwater monitoring on S2508/A (shared access track).
Survey 16 Add 3 MAAG0007181	S2511/ S17-22	1600 m ² – pad 1100 m ² - secondary clearing access track	1200 m ² – pad 1100 m ² - secondary clearing access track	0 m ²	1200 m ² – pad 1100 m ² - secondary clearing access track	Hole instrumented, with standpipe on site. This will require final remediation. Site rehabilitation in progress.
Survey 17 MAAG0004533	S2514/ D-A3C- S17-20	1600 m ² – pad only	900 m ² – pad	0 m ²	900 m ² – pad	Hole instrumented, with standpipe on site. This will require final remediation. Site rehabilitation in progress.

Survey 16 Add 3 MAAG0007181	S2515/ S17-19	1600 m ² – pad 200 m ² – primary clearing access track 100 m ² - secondary clearing access track	1200 m ² – pad 300 m ² – access track	1200 m ² – pad 100 m ² – access track	200 m ² –access track	Fully remediated.
Survey 17 MAAG0004533	S2516/ D-A3C- S17-21	1600 m ² – pad 1480 m ² - secondary clearing access track	1600 m ² – pad 1480 m ² - access track	0 m ²	1600 m ² – pad 1480 m ² - access track	Site rehabilitation in progress.
Survey 16 Add 3 MAAG0007181	S2517/ S17-21	1600 m ² – pad 200 m ² – primary clearing access track	700 m ² – pad 200 m ² – access track	700 m ² – pad 200 m ² – access track	0 m ²	Fully remediated.
Survey 17 MAAG0004533	S2518/ D-A3C- S17-22	1600 m ² – pad only	1050 m ² – pad	0 m ²	1050 m ² – pad	Hole instrumented, with standpipe on site. This will require final remediation. Site rehabilitation in progress.
Survey 16 Add 3 MAAG0007181	S2519/ S17-20	1600 m ² – pad 200 m ² – primary clearing access track	910 m ² – pad 200 m ² – access track	910 m ² – pad 200 m ² – access track	0 m ²	Fully remediated.
Survey 17 MAAG0004533	S2520/ D-A3C- S17-23	1600 m ² – pad only	1050 m ² – pad	0 m ²	1050 m ² – pad	Site rehabilitation in progress.

Survey 17 MAAG0004533	S2526/ D-A3C- S17-25	1600 m ² – pad only	1600 m ² – pad	0 m ²	1600 m ² – pad	Hole instrumented, with standpipe on site. This will require final remediation. Site rehabilitation in progress.
Survey 17 MAAG0004533	S2526A/ D-A3C- S17-25A (re-drill)	N/A – see borehole S2526	N/A – see borehole S2526	N/A – see borehole S2526	N/A – see borehole S2526	Borehole S2526 (on the same drill pad) has a standpipe that will require final remediation. S2526A is fully grouted and has no monitoring equipment installed. Site rehabilitation in progress.
Approvals Boreholes						
DE-A3B_SWAMP_MON_ADD_2 OUT17/41358	S2379B/ AD_5B	1600 m ² – pad 1100 m ² – primary clearing access track 6400 m ² - secondary clearing access track	225 m ² – pad 7500 m ² - access track	0 m ²	225 m ² – pad 7500 m ² - access track	Site and track left open for groundwater monitoring purposes (piezometers and TDR)
DE-A3B_SWAMP_MON_ADD_2 OUT17/41358	S2379C/ AD_5C	N/A – see borehole S2379B	N/A – see borehole S2379B	N/A – see borehole S2379B	N/A – see borehole S2379B	Site and track left open for groundwater monitoring purposes (piezometers and TDR)
DE-A3B_SWAMP_MON_ADD_5	S2436E/ AD_8E	1600 m ² – pad 3040 m ² – primary clearing access track 1760 m ² – minor secondary	300 m ² – pad 4800 m ² - access track	0 m ²	300 m ² – pad 4800 m ² - access track	Site and track left open for groundwater monitoring purposes

Survey 16 DOC18/507270	S-D-16-1	33000 m ² for all	33000 m ² for	0 m ²	33000 m ²	Rehabilitation is in progress.
	S-D-16-2	6 lines	all 6 lines			
	S-D-16-3					
	S-D-16-4					
	S-D-16-5					
	S-D-16-6					



Appendix 10: 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 2020 to 30 June 2021

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

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:

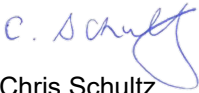
- Dendrobium Mine and Cordeaux Colliery Annual Review FY21 (Appendix 10)
- Appin Mine Annual Review FY21 (Appendix N).

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:

(printed)

Chris Schultz

Position

Superintendent Environment (as delegated under Power of Attorney issued June 2020)

Date:

22/09/2021

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.