

Dargues Gold Mine

Annual Review

1 July 2022 – 30 June 2023

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Appendices

Appendix A - Water Quality Monitoring Results

Name of Operation	Dargues Gold Mine (DGM)
Name of Operator	Big Island Mining Pty Ltd
Development consent / project approval #	PA 10_0054 MOD5
Name of development consent / project approval	Big Island Mining Pty Ltd
Mining lease #	ML 1675
Name of holder of mining lease	Big Island Mining Pty Ltd
Water licence #	WAL39281 WAL39282 WAL39287 WAL39292
Name of holder of water licence	Dargues Gold Mine Pty Ltd
RMP start date	27 July 2022
RMP end date	27 July 2025
Annual Review start date	1 July 2022
Annual Review end date	30 June, 2023
<p>I, Angus Wyllie certify that this audit report is a true and accurate record of the compliance status of the Dargues Gold Mine for the period 1 July 2022 to 30 June 2023 and that I am authorised to make this statement on behalf of DGM.</p> <p>Note.</p> <p><i>a) The Annual Review is an ‘environmental audit’ for the purposes of section 9.39(2) of the Environmental Planning and Assessment Act 1979. Section 9.42 provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.</i></p> <p><i>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).</i></p>	
Name of authorised reporting officer Title of authorised reporting officer Signature of authorised reporting officer  Angus Wyllie General Manager Date 31\08\2023	

1. Statement of Compliance

A summary of compliance at Dargues Gold Mine (DGM) during the 2022-2023 reporting period is provided in **Table 1**.

Table 1 Statement of Compliance

Relevant PGM Approvals	Compliance (Yes/No)
ML 1675	Y
PA 10_0054 MOD5 (SSD 3871)	N
EPL 20095	N

A summary of the non-compliances during the reporting period have been summarised in **Table 2**. The non-compliances during the 2022-2023 reporting period are discussed further in **Section 11**. The non-compliance categories are described in **Table 3**.

Table 2 Non-Compliances

Relevant Approval	Condition #	Condition Description	Compliance Status	Comment	Relevant Section of Annual Review
PA10_0054 MOD5	Schedule 3, Condition 41(b)	The Applicant must ensure that: <i>the dispatch of concentrate from the site is limited to between the hours of 7am to 10pm Monday to Saturday and 8am to 10pm Sundays and Public Holidays.</i>	Non-Compliant	2 x Concentrate trucks departed site on the evening of 30 June 2022, (2207hrs) and 1 August 2022, (2234hrs) respectively.	Section 11
PA 10_0054 MOD5	Schedule 3, Condition 41(c)	The Applicant must ensure that: <i>all heavy vehicle movements to or from the site are prohibited between the hours of 7am – 8:30am and 3pm – 5pm on school days</i>	Non-Compliant	A Boral cement truck was remotely “buzzed” out (via the boom gates) off-site the afternoon of the 28 April 2023 at approximately 1544hrs.	Section 11
PA 10_0054 MOD5	Schedule 3, Condition 41(c)	The Applicant must ensure that: <i>all heavy vehicle movements to or from the site are prohibited between the hours of 7am – 8:30am and 3pm – 5pm on school days</i>	Non-Compliant	A Boral cement truck was swiped out, (via the boom gates) by another contractor, at approximately 1525hrs on the 26 June 2023, who was entering the site.	Section 11
EPL 20095	Condition M2.2	Air Monitoring requirements shall be undertaken monthly.	Non-Compliant	Dust sampling occurred continuously at DD1 Between 30/07/2022 and 30/08/2022. The sample vessel was removed on 30/08/2022 in recommended freight packaging. On 09/09/2022 ALS notified site’s	Section 6.6.2

Relevant Approval	Condition #	Condition Description	Compliance Status	Comment	Relevant Section of Annual Review
				Environmental Technician that the vessel had been damaged during transit and its contents lost, thus rendering the sample unsuitable for analysis.	

Table 3 Compliance Status Categories

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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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	Non-compliance which does not result in any risk of environmental harm.

2. Introduction

2.1 Mine Operation

Dargues Gold Mine (DGM) is located approximately 60km's southeast of Canberra, immediately to the north of the village of Majors Creek and approximately 13km's south of Braidwood (**Figure 1**). Modified Project Approval for State Significant Development 10_0054 Modification 5 (PA 10_0054 MOD5 or the Project Approval) and Mining Lease 1675 (ML1675) are held by Big Island Mining Pty Ltd (BIM) a wholly owned subsidiary of Aurelia Metals Limited (Aurelia).

This Annual Review has been prepared in accordance with the *Annual Review Guideline Post-Approval Requirements for State Significant Mining Developments October 2015* as published by the then Department of Planning, Industry and Environment NSW. This Annual Review is submitted in compliance with:

- Condition 5(3) of PA 10_0054 MOD5.

Plans of DGM showing the regional context and mine infrastructure are shown in **Figure 1** and **Figure 2**.

BIM recognises and respects the importance of stakeholders and considers positive relationships important to aid in continual improvement of its environmental management practice. This report is therefore provided to the following stakeholders:

- Department of Planning and Environment (DPE);
- Department of Planning and Environment - DPE Water;
- Eurobodalla Shire Council (ESC);
- Queanbeyan – Palerang Regional Council (QPRC);
- NSW Environment Protection Agency (EPA);
- Biodiversity Conservation and Science Directorate (BCSD);
- Dargues Community Consultative Committee (CCC); and
- General public (available at www.aureliametals.com).

2.2 DGM Contacts

Contact details for the personnel responsible for environmental management and community relations of DGM during the 2022/2023 reporting year are provided in **Table 4**.

Table 4 Primary Contacts for DGM

Contact	Position	Contact Details
Angus Wyllie	General Manager	E: angus.wyllie@aureliametals.com.au
Cassandra Johnston	Environment and Community Superintendent	E: cassandra.johnston@aureliametals.com.au
Abigail Saunders	Environment and Social Responsibility Advisor	E: abigail.saunders@aureliametals.com.au
DGM Information Line		T: 1800 732 002 E: dgm.community@aureliametals.com.au

Figure 1 Locality Plan – Dargues Gold Mine

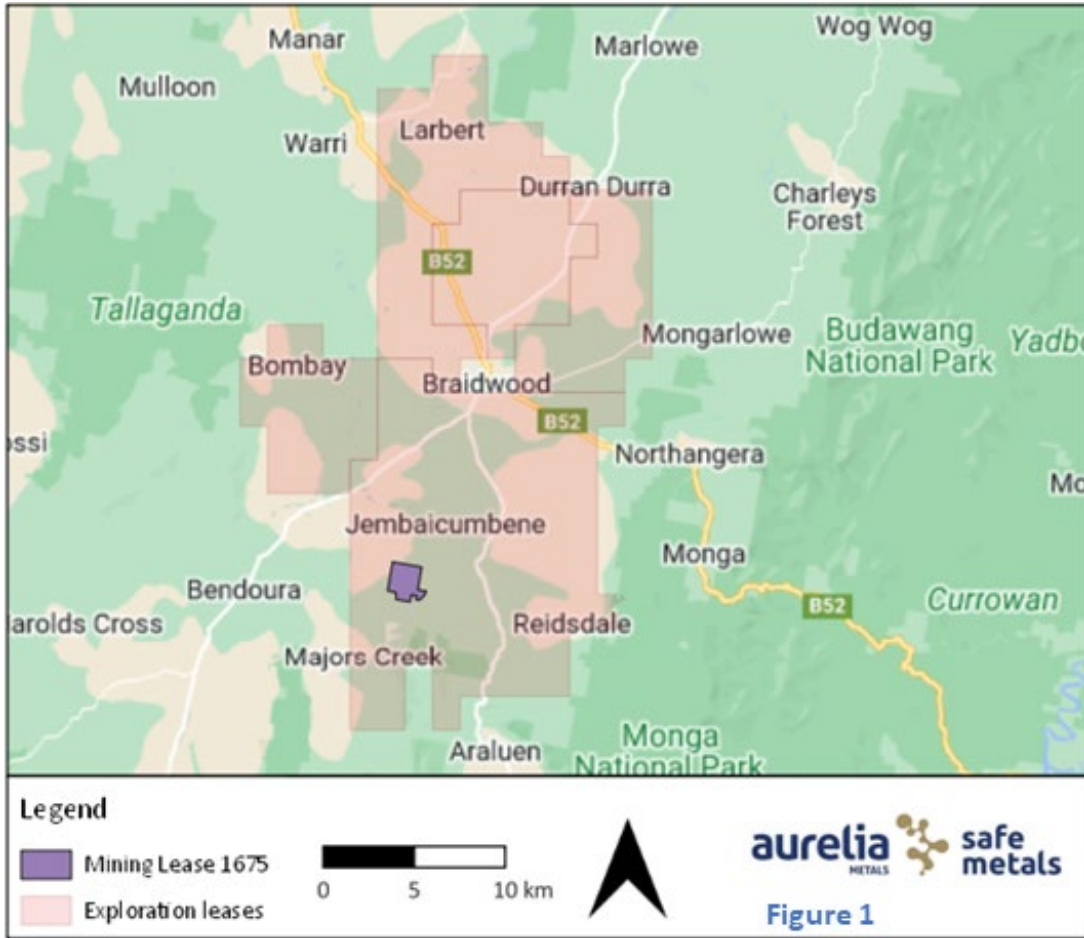
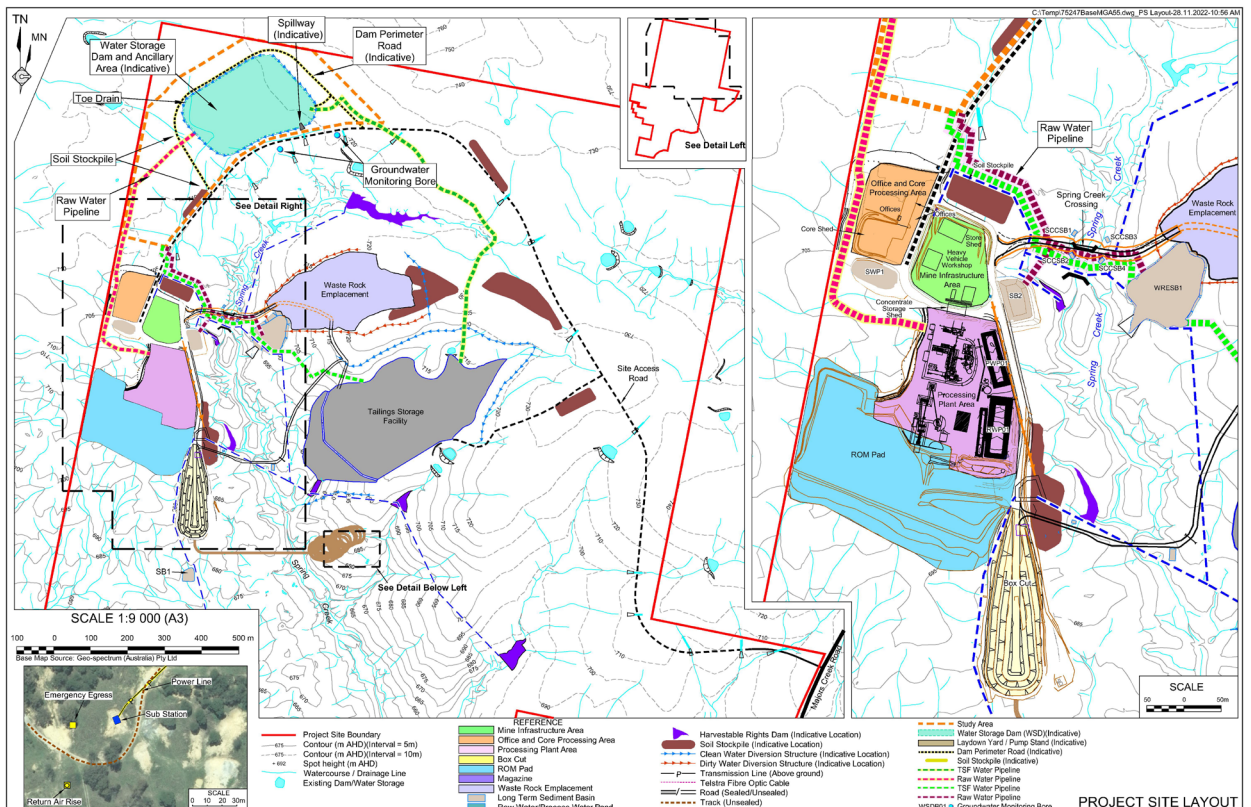


Figure 2 Project Site Layout



3. Approvals

DGM operations are regulated by a range of consents, mining tenements and licences which are summarised in the following sections.

3.1 Consents

DGM operates under several consents. The details of these approvals are provided in **Table 5**. DGM was assessed under Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act). Prior to approval of the mine, Part 3A of the EP&A Act was repealed and responsibility for assessment of DGM was passed to the Planning Assessment Commission (PAC) from the Department of Planning and Infrastructure. The PAC undertook further assessment and review of DGM before approving the mine on the 2 September 2011. Following two appeals to the Land and Environment Court, the Court subsequently granted project approval on 7 February 2012.

Following the repeal of Part 3A of the EP&A Act, DGM is considered a “transitional Part 3A project”, as defined in schedule 6A of the EP&A Act. As a result, modifications 1, 2 and 3 to DGM’s approval were subject to Section 75W of the EP&A Act, however, prior to submission of Modification 4, transitional Part 3A project status’s expired and DGM was transitioned to being a State Significant Development (SSD). As a result, Modification 5 was assessed under Part 4 of the EP&A Act.

The five Modifications to the Mine’s approval are briefly described below:

- Modification 1 (MP10_0054 MOD1) for the use of paste fill at the Mine was approved on 12 July 2012.
- Modification 2 (MP10_0054 MOD2) to regularise changes to the layout of the Mine was approved on 24 October 2013.
- Modification 3 (MP10_0054 MOD3) for additional infrastructure and extension of the mine life was approved on 10 August 2016.
- Modification 4 (PA 10_0054 MOD4) for additional infrastructure, some administrative modifications and extension of the mine life was approved on 23 May 2019.
- Modification 5 (PA 10_0054 MOD5) for additional infrastructure, i.e. water management dam, increase approved processing rate from 355,000tpa to 415,000tpa, the ability to transport water onto site in emergency situations, and some administrative amendments.

DGM also operates in accordance with two Commonwealth approvals issued by the Department of Agriculture, Water and the Environment (DAWE) under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). EPBC 2010/5770 was approved on 27 September 2011, a second approval EBPC 2015/7539 was granted in February 2017 with modification of the project approval to extend the end date of mining operations.

Table 5 Development Consents

Consent	Details	Issue Date	Expiry Date
PA10_0054 (NSW)	Original project approval as prescribed by the Land and Environment Court	7 February 2012	13 August 2018
MP10_0054 MOD 1	Modification of the Project Approval to allow the use of Paste Fill	12 July 2012	13 August 2018
MP10_0054 MOD 2	Modification to regularise changes to the site layout	24 October 2013	13 August 2018
MP10_0054 MOD 3	Modification to allow the construction and use of the Eastern Waste Rock	10 August 2016	30 June 2025

Consent	Details	Issue Date	Expiry Date
	Emplacement, a crossing across Spring Creek, and an extension of mine life.		
PA 10_0054 MOD-4 (SSD 3871)	Modification of Spring Creek Crossing and other minor administrative amendments.	23 May 2019	30 June 2025
PA 10_0054 MOD-5	Modification for additional infrastructure, i.e. water management dam, increase approved processing rate from 355,000tpa to 415,000tpa, the ability to transport water onto site in emergency situations, and some administrative amendments	20 December 2022	30 June 2025
EPBC 2010/5770	Approval under the Commonwealth Environment Protection and Biodiversity Act 1999	27 September 2011	31 August 2025
EPBC 2015/7539	Modification of the Project Approval to extend the end date of mining operations and for additional infrastructure	February 2017	30 June 2025

3.2 Authorisations

Mining Lease 1675 (ML1675 or the Mining Lease) was granted under the *Mining Act 1992* (the Mining Act), by the NSW's Government, on 12 April 2012, and covers an area of 317 Hectares (Ha). The Mining Lease allows for the extraction of gold, silver and copper until 12 April 2045, subject to an approval under the EP&A Act being in force.

DGM is located within Mining Lease 1675 (ML1675) and part of Exploration Lease 8372 (EL8372). Exploration Lease 6548 (EL6548) and Exploration Lease 6444 (EL6444) surrounding the mining lease. Details of the tenements including regional exploration licences are provided in **Table 6**.

Table 6 Authorisations

Number / Identifier	Grant Date	Expiry Date	Status
ML 1675	12 April 2012	12 April 2045	Current
EL6548	5 April 2006	5 April 2023 (renewal application submitted on 30/03/23. Outcome still pending)	Current
EL8372	20 May 2015	20 May 2027	Current
EL6012	22 October 2002	22 October 2023	Current
EL8243	7 March 2014	7 March 2025	Current
EL8244	7 March 2014	7 March 2025	Current
EL8373	20 May 2015	20 May 2028	Current
EL9402	10 May 2022	10 May 2028	Current

3.2.1 Mining Operations Plan Status

During the 2022/2023 reporting period, DGM operated under an existing Rehabilitation Management Plan, (RMP) for the period 1 August 2022 to 30 June 2023. The RMP supersedes Dargues' previous Mine Operations Plan, (MOP). The RMP covers various rehabilitation commitments throughout DGM's life-of-mine, including post mining land use, rehabilitation planning and management, performance indicators and rehabilitation implementation.

3.3 Licences

Environment Protection Licence (EPL) 20095 for DGM was amended on 6 December 2021 which incorporated changes to the monitoring location of EPA monitoring point 38 (DD-1).

Water licences for DGM have been issued by the Department of Environment and Planning – Water (DPE Water). Details of the licences are provided below in **Table 7**.

EPA radiation licence (5089849) to sell, possess, store or give away regulated material (including radiation apparatus, radioactive substances or items containing radioactive substances) was issued on 27 June 2022 (see **Table 7**) and requires annual renewal, with the latest renewal being granted on the 22 May 2023. The radiation licence covers seven (7) sealed source fixed radiation gauges located within the Processing Plant. These radiation gauges are used to measure the density of various slurry streams.

DGM operates a Fuji Clean integrated multistage wastewater treatment plant to treat water from the ablutions, showers and sinks on site. This unit is approved and inspected by Queanbeyan-Palerang Regional Council under approval number LGA.2018.255 (see Table 3-3). The approval to operate is valid from 6 February 2019 to 6 February 2024.

Table 7 Licences held by DGM

Licence	Grant Date	Expiry date	Details/Comments
Environment Protection Licence EPL 20095	18 May 2012	-	Issued by NSW Environment Protection Authority
WAL39281 (Water Act 2000) 10AL119512 (Water Act 1912)	29 March 2017	-	Extraction of up to 320ML/y of groundwater from the DGM
WAL39282 (Water Act 2000) 140AL119514 (Water Act 1912)	19 October 2017	-	Extraction of up to 39ML/y of groundwater from the Snobs workings
WAL39287 (Water Act 2000) 10AL119518 (Water Act 1912)	29 March 2017	-	Extraction of up to 16ML/y of groundwater from the Steward and Merton’s workings
WAL39292 (Water Act 2000) 10AL119516 (Water Act 1912)	29 March 2017	-	Extraction of up to 24ML/y of groundwater from the United Miners workings
WAL37848 (Water Act 2000) 10AL121684 (Water Act 1912)	2018	-	Extraction of up to 1ML/y of groundwater from the Dargues Production Bores
Explosives Storage Licence XSTR200092	16 July 2018	23 April 2023 (renewal application submitted March 23. Outcome still pending)	Licence holder is authorised to possess and store the following Class of Explosives 1.1.B, 1.1D and 1.4B
Radiation Licence 5089849	28 June 2019	27 June 2024	Sell, possess, store or give away regulated material (including radiation apparatus, radioactive substances or items containing

Licence	Grant Date	Expiry date	Details/Comments
			radioactive substances) for 1 year. Requires annual renewal.
Wastewater Treatment Plant LGA2018.255	6 February 2019	6 February 2024	Approval for install and use of wastewater treatment plant.

3.4 Explosives Storage Licence

DGM currently uses ANFO on site. Consequently, DGM's current licence approval, (granted on 16 July 2018) is for the storage and use of the explosive quantities listed in **Table 8**.

An application to increase the storage capacity of explosives was submitted 30 June 2021 and approved in February 2022.

Currently, DGM has paid and submitted its renewal application and currently waiting on a response and inspectorate inspection of the explosives compound.

Table 8 Explosives Storage Licences

Storage Facility ID	Storage Facility Type	UN Number	Class Division	Proper Shipping Name	Typical Quantity	Maximum Storage Capacity (kg/L/No)
MAG3	Magazine	42	1.1D	Boosters without detonators	200Kg	
MAG2	Magazine	42	1.1D	Boosters without detonators	500Kg	
MAG3	Magazine	65	1.1D	Cord, detonating, flexible	200Kg	
MAG2	Magazine	65	1.1D	Cord, detonating, flexible	100Kg	
MAG3	Magazine	82	1.1D	Explosive, Blasting, Type B	10800Kg	14000Kg
MAG2	Magazine	82	1.1D	Explosive, Blasting, Type B	7600Kg	15000Kg
MAG3	Magazine	241	1.1D	Explosive, Blasting, Type E	1600Kg	
MAG2	Magazine	241	1.1D	Explosive, Blasting, Type E	5600Kg	
MAG1	Magazine	255	1.4B	Detonators, Electric for blasting	500No	
MAG1	Magazine	255	1.4B	Detonators, Electric for blasting	500No	
MAG1	Magazine	360	1.1B	Detonator assemblies, non-electric for blasting	12000No	20000No

3.5 Dam Safety NSW

The Tailings Storage Facility (TSF) at the site is a declared dam under the *Dams Safety Act 2015*. This Act is administered by Dams Safety NSW (DSNSW), a government statutory authority.

DSNSW conditionally approved underground mining in the Dargues Reef Notification Area, designated as Dargues Reef – 2, on the 4th of August 2021. Dargues has been submitting compliance reports as per the mining approval conditions since.

High-Risk Activity (HRA) for Dargues TSF Stage 3 & 4 construction was submitted to the NSW Regulator in December 2021 and was approved soon after. A letter notifying DSNSW of Significant Change to Dargues Mine Dam was submitted on the 25th of March 2022, with the construction activities of Stages 3 & 4.

DSNSW conducted an audit of Dargues' TSF in March 2022 targeting compliance against the mining conditions approvals.

As of the 30 June 2023, DGM's TSF Stage 3 embankment lift has been completed, inspected and approved by DSNSW.

3.6 Project Approval

The conditions of PA 10_0054 MOD5 as relevant to this Annual Review, and where they have been addressed in this document, are provided in **Table 9** below.

Table 9 PA 10_0054 MOD4 Annual Review Conditions

Condition	Where Addressed
SCHEDULE 2	
Limits on Approval 6. The Proponent shall not: <ul style="list-style-type: none"> (a) process more than 415 000 tonnes of ore at the site in a calendar year; (b) process more than 1.6 million tonnes of ore at the site over the life of the project; (c) use any cyanide or mercury on site to process or extract gold from the project; or (d) process or smelt any ore other than that extracted from the site. 	Section 4.1
SCHEDULE 3	
Operating Conditions 4. The Proponent shall: <ul style="list-style-type: none"> (a) implement best practice noise management, including all reasonable and feasible noise mitigation measures to minimise the operational and road traffic noise generated by the project; (b) investigate ways to minimise the noise generated by the project including any reversing alarms on machinery or vehicles; (c) minimise noise impacts during temperature inversions; and (d) report on these investigations and the implementation and effectiveness of these measures in the Annual Review, To the satisfaction of the Secretary.	Section 6.3
SCHEDULE 5	
3. By the end of each year following the commencement of construction, the Proponent shall review the environmental performance of the project to the satisfaction of the Secretary. This review must: <ul style="list-style-type: none"> (a) describe the development (including rehabilitation) that was carried out in the past year and the development that is proposed to be carried out over the next year; 	Section 4 and 8
<ul style="list-style-type: none"> (b) include a comprehensive review of the monitoring results against the 	Section 6 and 7

Condition	Where Addressed
<ul style="list-style-type: none"> relevant statutory requirements, limits or performance measures/criteria; the monitoring results of the previous years; and the relevant predictions in the EA; 	
(c) identify any non-compliances over the past year, and describe what actions were (or are being) taken to ensure compliance;	Section 1 and 11
(d) identify any trend in the monitoring data over the life of the project;	Section 6 and 7
(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and	Section 6 and 7
(f) describe what measures will be implemented over the next year to improve the environmental performance of the project.	Section 6 and 7
<p>10. Prior to commencement of construction on site, the Proponent shall:</p> <p>(a) make copies of the following publicly available on its website: The documents refer to in Condition 2 of Schedule 2;</p> <ul style="list-style-type: none"> All current statutory approvals for the project; All approved strategies, plans and programs required under the conditions of this approval; The monitoring results of the project, reported in accordance with the specifications in any conditions of this approval, or any approved plans and programs; A complaints register, updated on a monthly basis; Minutes of CCC meetings; The annual reviews of the project; Any independent environmental audit of the project, and the Proponent's response to the recommendations in any audit; Any other matter required by the Secretary; Any incident report referred to in condition 6 of Schedule 5; A certificate of currency of public liability insurance held by the Proponent as in force from time to time; and <p>(b) keep this information up to date, within a reasonable period, and in any event no later than 28 days after the above information becomes available, To the satisfaction of the Secretary.</p>	Section 9.6

4. Operations Summary

4.1 Production Statistics

A summary of production figures for the reporting period is provided in **Table 10**. Also shown are the predicted production figures for the 2022-2023 reporting period.

Table 10 Production Summary for the 2021-2022 Financial Year Period

Material	Approved PA 10_0054 MOD5	2022 Reporting Period (actual)	This Reporting Period (actual)	2024 Reporting Period (forecast)
Waste Rock/ Overburden (t)	N/A	248,623	164,214	7,867
Ore Mined (t)	N/A	342,192	367,365	329,313
Ore Processed ¹ (t)	415,000	342,258	370,298	355,955
Fine Reject (tailings)(t)	N/A	322,715	348,520	337,542 (Total) 184,805 (to TSF) ²
Saleable Product (wmt)	N/A	36,825	36,096	20,123

¹Ore processed is calculated over Calendar year as per planning approval.
²Remaining fine rejects go to backfill

Table 11 Ore Processed Over the Life of The Project

Reporting Period	Ore Processed cumulative total (t)
2019-2020	26,162
2020-2021	324,101
2021-2022	342,258
2022-2023	370,298
Total	1,062,819

Note - Processing plant commissioned in April 2020

DGM has processed a total of 1,062,819 tonnes of ore over the life of the mine, which is below the limit of 1.6 million tonnes of ore over the life of the project as per PA 10_0054 MOD5, Schedule 2, Condition 6(b).

Mining operations within the reporting period remained below the limits specified in PA 10_0054 MOD5 of 415,000 tonnes. Specific conditions from Schedule 2 of PA 10_0054 MOD5 are presented in Table 12 with responses on the compliance of each also provided. Note that ore processed is calculated on a calendar year in line with the Project Approval.

Table 12 Production Summary for the 2022-2023 Financial Year Period

Project Approval Condition No. and Description	Compliance Response
5. The Proponent may carry out mining operations on site until 30 June 2025.	Compliant
6. The Proponent must not: (a) Process more than 415,000 tonnes of ore at site in a calendar year; (b) Process more than 1.6 million tonnes of ore at site over the life of the Project; (c) Use any cyanide or mercury on site to process or extract gold from the Project; or (d) Process or smelt any ore other than that extracted from the site.	Compliant, see Table 11 .
7. The Proponent shall only store ore concentrate on the site within a covered, concrete-sealed and bunded area within the processing plant.	Compliant, all concentrate is stored within the designated concentrate shed.

4.2 Mining Operations

Mining operations are presented in detail in Section 2.4 of the Environmental Assessment for the Dargues Reef Gold Project, September 2010 (the EA). In summary, underground development commenced with development of the decline. Underground mining of ore is then undertaken using a sublevel open stoping mining method.

During mine operations, several development drives are established at intervals within the ore zone. A series of holes are then drilled from each drive and sequentially loaded with explosives prior to the ore being blasted. The ore is then removed from the stope or open void using an underground loader, operated remotely where required, and loaded into haul trucks for transportation to the ROM pad. Between stopes, pillars (vertical) and sills (horizontal) unmined material is left to provide support and prevent ground collapse.

To ensure stability of sections of the mine, once mining operations have been completed in those sections, mined-out stopes are backfilled using waste rock material sourced preferentially from concurrent underground development, with additional waste rock material transported from the temporary waste rock emplacement on surface, as required, or hydraulic backfill from the batch plant in the Processing Plant.

During the reporting period of 2022/ 23, approximately 400t of topsoil was stripped. This allowed the expansion of the Eastern Waste Rock Emplacement, (WRE) to its total approved area.

4.3 Processing Operations

Processing operations are described in detail in Section 2.6 of the EA. In summary, ore material is processed within the Processing Plant to produce a gold bearing sulphide concentrate and tailings material.

Ore material is fed into a three-stage crushing and screening circuit. Product screen undersize material (nominal <12 mm) is transferred to an enclosed fine ore bin. Material from the fine ore bin will be reclaimed using one or more feeders. Reclaimed material is directed to a primary ball mill for grinding.

The ground ore is directed to a rougher flotation circuit where rougher flotation concentrate and tail streams are separated by the addition of flotation reagents and low-pressure air. The rougher concentrate is directed to the re-grind circuit whilst the rougher tail is dewatered via a thickener prior to transfer to the TSF.

Rougher concentrate is ground within a re-grind ball milling circuit. Re-ground rougher concentrate is transferred to the cleaner flotation circuit where further flotation produces the final concentrate. The tail from the cleaner flotation circuit is transferred back to the rougher circuit feed stream.

Concentrate is dewatered prior to being stacked within an enclosed shed with a bunded concrete floor, prior to being trucked offsite for further processing.

4.4 Tailings Operations

At the completion of processing of the ground ore (from which the gold and associated sulphides have been removed), the remaining material, namely tailings, is transferred to a thickener to recover process water for reuse within the Processing Plant. The thickened tailings slurry is then pumped to the TSF or used as hydraulic back fill underground.

The Stage 3 upgrade of the TSF was completed during the reporting period. This embankment lift has allowed additional storage of up to 0.820Mt of tailings material and with a life of approximately 24 months.

4.5 Exploration Operations

During the reporting period, no exploration drilling was conducted within DGM's ML1675.

4.6 Other Operations

General activities within the Mining Lease Area have been consistent with the rural nature of the wider area and consist mainly of:

- Agriculture related activities, including the grazing of cattle;
- Maintenance of existing earthworks;
- Water management; and
- Environmental monitoring.

Construction activities during the reporting period included the following:

- Expansion of the WRE to achieve its total approved footprint.

4.7 Hours of Operation

During the reporting period, all activities (except for three separate incidents involving concentrate truck and boral cement trucks breaching site's curfew hours) were undertaken in accordance with the approved hours of operation.

- Vegetation clearing, topsoil stripping, construction of the box cut and rehabilitation – Day;
- Remainder of construction operations – Day/ Evening/ Night;
- Mining, paste filling, maintenance and processing operations – Day/ Evening/ Night;
- Crushing operations (including operation of front-end-loader) - 7am-7pm, 7 days per week;
- Transportation – Day/ Evening;
- Surface blasting – 9am – 5pm Monday – Friday, excluding public holidays;
- Underground blasting – Anytime;
- Dispatch of concentrate from site – 7am – 10pm Monday to Saturday and 8am - 10pm Sundays and Public Holidays; and
- Heavy vehicle movements to or from site are prohibited on school days – 7am – 8:30am and 3pm – 5pm.

It should be noted that during the reporting period three separate non-compliance for concentrate trucks and heavy vehicle movements outside of the specified curfew times was reported. These incidents took place June 2022; 1 August 2022; April 2023 and June 2023. The non-compliances were self-reported to the DPE upon becoming aware of the situation. Following the incidents, notification of the breach was distributed to Dargues' contractor managers and contractors, and BIM has committed to extending its hard access closure controls to include school holidays.

4.8 Next Reporting Period

Currently, DGM is developing a strategy to fulfil its biodiversity commitments. This will require negotiation, (over the next 12 months) with the Biodiversity Conservation Trust, (BCT) regarding a Conservation Agreement.

5. Actions Required from Previous Annual Review

The 2021/ 2022 AEMR was uploaded to the Planning Portal on 30 September 2022 and email acknowledgement received the same day by DPE.

Table 13 is a summary of the proposed actions from last year’s Annual Review and the status of each item at the end of this reporting period.

Table 13 Summary of Proposed Actions from Last Year’s Annual Review and Status at the Completion of this Reporting Period

Task	Comments
TSF Stage 3 planned to commence in March 2022.	Completed.
Application to modify the project approval for an additional water storage facility, emergency trucking of water and some administrative amendments to conditions.	The Mod 5 application was approved in December 2022 . Currently, responding to DPE’s RFIs pertaining to site’s Water Management Plan and Biodiversity Management Plan.
Works to remove the requirement for compensatory flow to be discharged to Majors Creek.	Cancelled.
Review erosion and sediment control in place and undertake upgrades/replacement works as required.	Ongoing.

6. Environmental Performance

6.1 Introduction

This section outlines the environmental performance of DGM during the reporting period. Environmental management, monitoring and key issues have been outlined for the relevant environmental aspects. It should be noted that as the mine is a hard rock metalliferous mine, issues such as subsidence, spontaneous combustion, and methane drainage/ ventilation (requirements of the Annual Review Guideline) are not applicable.

6.2 Meteorology

In accordance with Schedule 3, Condition 18 of PA 10_0054, and Condition L2.4 of EPL 20095, BIM continued to operate the meteorological station throughout the reporting period. The meteorological station is located on the northern side of the Eastern Waste Rock Emplacement (refer **Figure 2**), and collects continuous records of temperature, wind speed, wind direction and sigma-theta (a measure of the fluctuation of the horizontal wind direction).

Meteorology monitoring data has been summarised in **Table 14**. The meteorological monitoring results provide context for the environmental monitoring and management discussed further in this document.

Detailed meteorological monitoring data is available on Aurelia’s website: <https://hydportal.alsglobal.com/web.htm>

Username: unity

Password: goldmin3

Table 14 Meteorological Monitoring – Monthly Average for the Reporting Period

Month	Air Temp at 2m (°C)	Air Temp at 10m (°C)	Wind Direction (°)	Wind Speed (m/s)	Sigma theta (°)	Rainfall (mm)	Relative humidity (%)
Jul-22	2.8	3.2	252	0	3	115.56	96.9
Aug-22	7.3	7.4	338	1.0	16	90.38	87.1
Sep-22	8.7	8.6	352	1.0	10	78.83	98.8
Oct-22	7.0	7.2	143	2.3	10	181.49	100
Nov-22	16.7	17.1	312	4.6	8	66.34	83.9
Dec-22	11.9	12.0	138	0.91	8	48.84	98
Jan-23	15.8	16.0	8	0.88	16	171	98.6
Feb-23	14.9	14.9	174	0.86	13	53.80	99.6
Mar-23	17.3	17.5	8	0.96	8	59.20	97.6
Apr-23	8.6	9.3	305	0.76	5	61.80	92.5
May-23	8.5	8.8	288	1.15	14	14.80	94.9
Jun-23	11.7	11.8	311	3.12	8	16.40	79.0

6.3 Noise

6.3.1 Environmental Management

Operational noise at DGM is managed in accordance with the *Noise Management Plan* (DMPL, 2020). Operational noise management activities during the reporting period included:

- Compliance with the approved hours of operation;
- The implementation or maintenance of engineering noise controls, such as but not limited to:
 - containing the primary and secondary crusher within an engineered building;
 - rubber lining the grinding circuit;
 - placement of the ventilation fan at least 10m below ground level;
 - maintaining a 5m high bund along the southern and western edge of the ROM pad; and
 - using alternative reversing alarm options.
- The implementation and maintenance of engineering noise controls, such as but not limited to:
 - mobile plant fitted with high efficiency mufflers where available and maintained to manufacturer's specifications;
 - regular and effective maintenance by qualified persons of all equipment including vehicles moving on and off the DGM Site; and
 - all Project-related personnel, including contractors and their employees, will be made aware of their obligations and responsibilities regarding minimising noise emissions.

BIM operates one unattended noise monitor (NM4) and has five attended noise monitoring locations (NM1, NM2, NM3, NM5, NM6), as shown on **Figure 3**. The PA 10_0054 MOD5 and EPL 20095 criteria for noise is provided in Table 15 and Table 16.

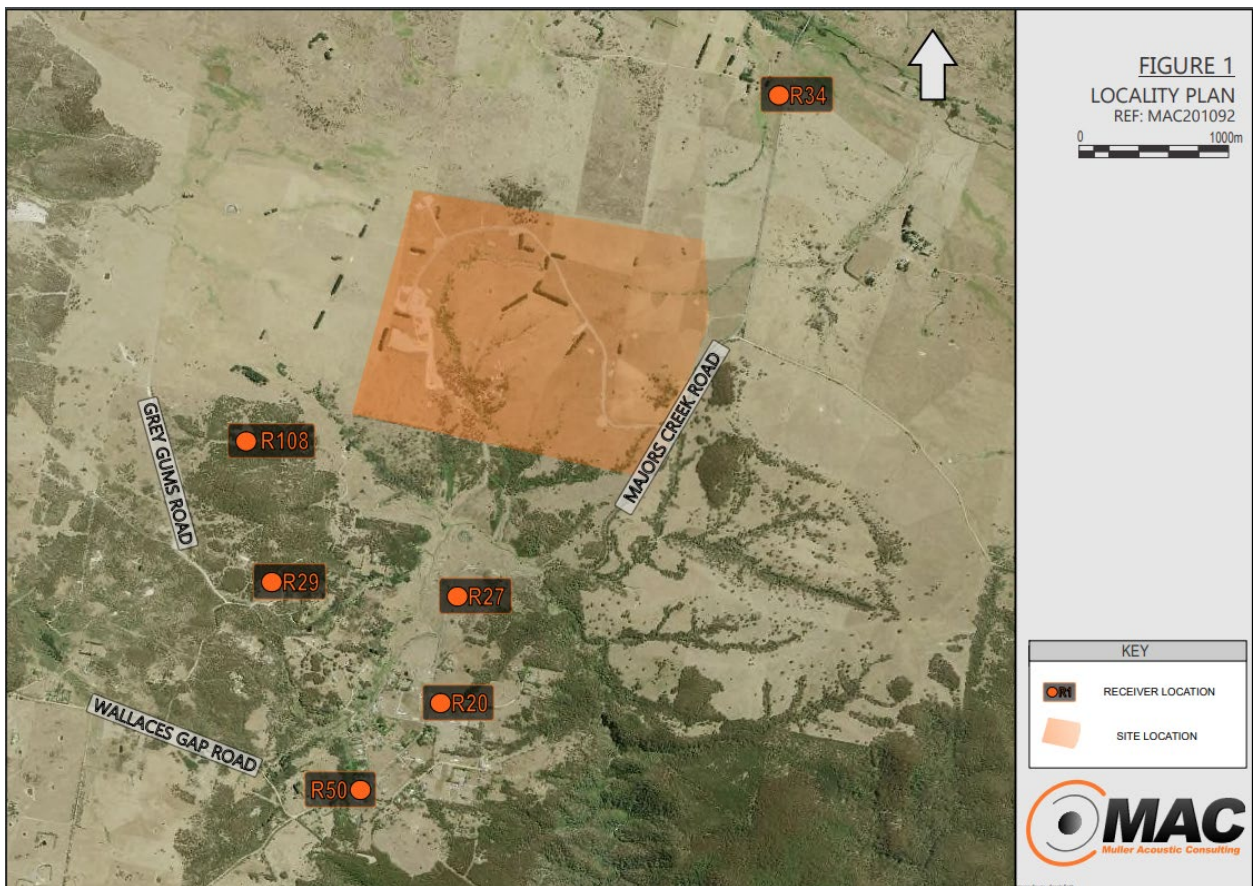
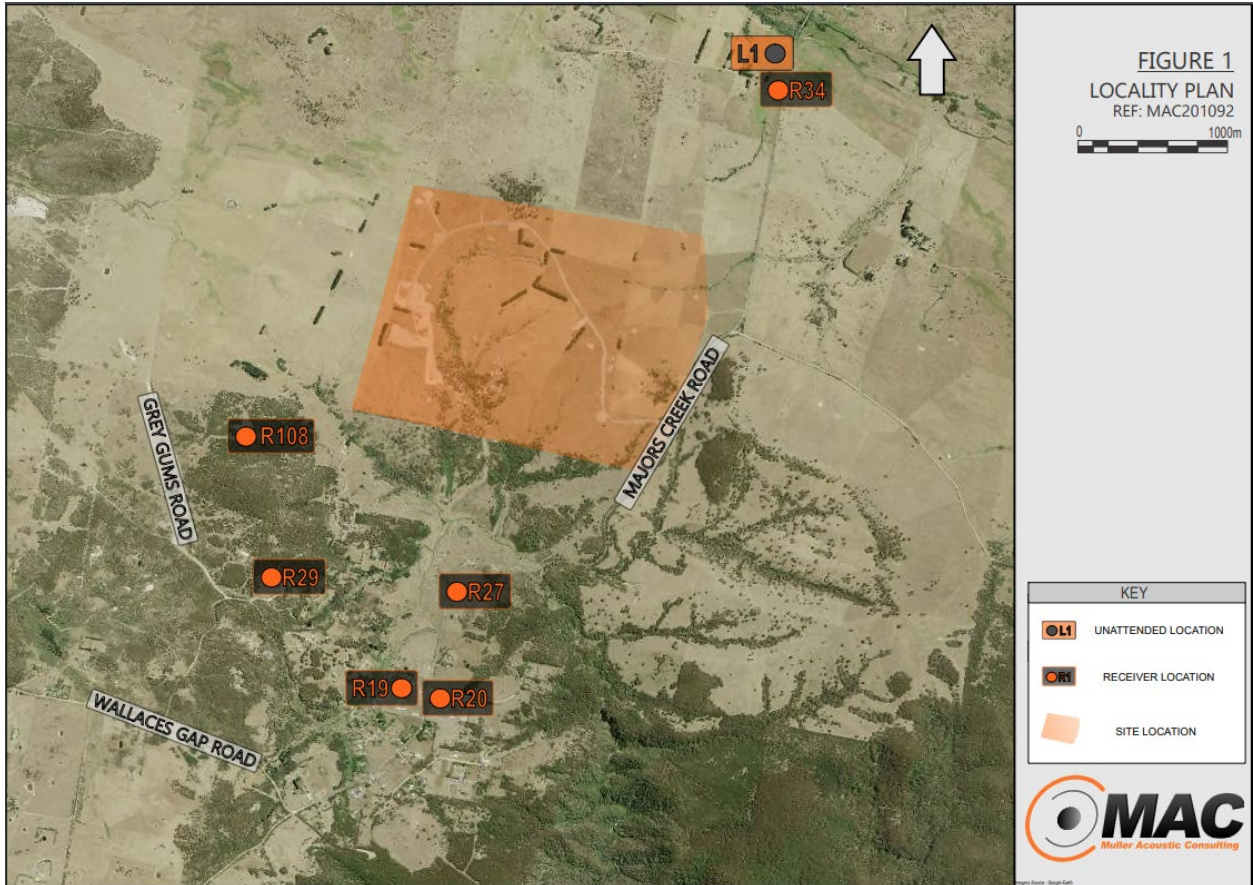
Table 15 PA 10_0054 MOD4 and EPL 20095 Noise Criteria dB (A)

Location	Day	Evening	Night (10pm – 7am)	
	L _{Aeq} (15 min)	L _{Aeq} (15 min)	L _{Aeq} (15 min)	L _{A1} (1 min)
All privately owned land	35	35	35	45
Majors Creek State Conservation Area (when in use by any person)	35	35	35	45

Table 16 PA 10_0054 MOD4 Traffic Noise Impact Assessment Criteria dB (A)

Location	Day L _{Aeq1} hour	Evening L _{Aeq1} hour
Majors Creek Road, Araluen Road, Captains Flat Road, Coghill Street and Wallace Street	55	50

Figure 3 Surrounding Residences and Noise Monitoring Locations



6.3.2 Environmental Monitoring Results

Attended Noise Monitoring

Attended noise monitoring was conducted by Muller Acoustic Consulting Pty Ltd (MAC) in June 2022, and February and March 2023 at receptors NM1 (R29), NM2 (R108), NM3 (R20), NM5 (R27), NM6 (R34), and the results along with the PA 10_0054 and EPL 20095 criteria, are provided in **Table 17**. Detailed monitoring data for attended noise monitoring is available on Aurelia's website: <https://aureliametals.com/dargues-mines-compliance-and-regulatory-information/>

Table 17 Summary of Attended and Unattended Noise Monitoring Results for the Reporting Period

Receiver	Date	Time	LA _{eq} Noise Criteria Limit	LA _{max} Limit (Night-time) (dB)	LA _{eq} Site Contribution (dB)	LA _{max} Site Contribution (dB)
NM1 (R29)	27/7/2022	16:04	35	-	<25	<25
	27/7/2022	21:11	35	-	<25	<25
	27/7/2022	22:20	35	45	<25	<25
	27/10/2022	16:36	35	-	<27	<27
	27/10/2022	21:06	35	-	<27	<27
	27/10/2022	22:22	35	45	<26	<26
	01/3/2023	14:11	35	-	<27	<27
	28/2/2023	21:15	35	-	<20	<20
	28/2/2023	22:22	35	45	<20	<20
	24/5/2023	16:33	35	-	<19	-
	24/5/2023	21:19	35	-	<19	-
	24/5/2023	22:18	35	45	<20	<20
NM2 (R108)	27/7/2022	16:24	35	-	<25	<25
	27/7/2022	21:32	35	-	<30	<30
	27/7/2022	22:00	35	45	<25	<25
	27/10/2022	16:15	35	-	<35	<35
	27/10/2022	21:27	35	-	<30	<30
	27/10/2022	22:00	35	45	<29	<29
	01/3/2023	14:32	35	-	<25	<25
	28/2/2023	21:36	35	-	<20	<20
	28/2/2023	22:00	35	45	<20	<20
	24/5/2023	16:13	35	-	<16	-
	24/5/2023	21:38	35	-	<20	-
	24/5/2023	22:00	35	45	<20	<20
NM3 (R20)	27/7/2022	15:08	35	-	<30	<30
	27/7/2022	20:24	35	-	<30	<30
	27/7/2022	22:59	35	45	<25	<25
	27/10/2022	16:54	35	-	<34	<34
	27/10/2022	20:17	35	-	<29	<29
	27/10/2022	22:44	35	45	<28	<28
	01/3/2023	13:49	35	-	<23	<23
	28/2/2023	20:51	35	-	<26	<26

Receiver	Date	Time	LA _{eq} Noise Criteria Limit	LA _{max} Limit (Night-time) (dB)	LA _{eq} Site Contribution (dB)	LA _{max} Site Contribution (dB)
	28/2/2023	22:44	35	45	<23	<23
	24/5/2023	16:56	35	-	<25	-
	24/5/2023	20:55	35	-	<25	-
	24/5/2023	22:40	35	45	<28	<28
NM5 (R27)	27/7/2022	14:43	35	-	<30	<30
	27/7/2022	20:05	35	-	<25	<25
	27/7/2022	23:18	35	45	<20	<20
	27/10/2022	17:12	35	-	<31	<31
	27/10/2022	19:58	35	-	<25	<25
	27/10/2022	23:03	35	45	<21	<21
	01/3/2023	13:31	35	-	<27	<27
	28/2/2023	20:31	35	-	<20	<20
	28/2/2023	23:02	35	45	<20	<20
	24/5/2023	17:14	35	-	24	-
	24/5/2023	20:35	35	-	23	-
	24/5/2023	22:59	35	45	<26	<26
	NM6 (R34)	27/7/2022	14:21	35	-	30
27/7/2022		19:43	35	-	<35	<35
27/7/2022		23:40	35	45	<25	<25
27/10/2022		17:35	35	-	<32	<32
27/10/2022		19:37	35	-	<26	<26
27/10/2022		23:25	35	45	<26	<26
01/3/2023		13:08	35	-	<26	<26
28/2/2023		20:09	35	-	<20	<20
28/2/2023		23:25	35	45	<20	<20
24/5/2023		17:36	35	-	<16	-
24/5/2023		20:11	35	-	<20	-
24/5/2023		23:20	35	45	<19	<19
Burke Street (R19)	27/7/2022	15:32	35	-	<30	<30
	27/7/2022	20:43	35	-	<30	<30
	27/7/2022	22:42	35	45	<25	<25
Seymour Street (R50)	27/10/2022	20:43	35	-	<24	<24

Noise levels assessed as part of the monitoring program were within operational noise criteria. They were also lower than the noise levels predicted in the EA (Corkery, 2010), and did not exceed the sleep disturbance criteria at night.

Unattended Noise Monitoring

As per the *Noise Management Plan*, an unattended noise monitor (NM3), recording real-time data, was in use for the reporting period, for use as a proactive internal noise management tool. MAC review this

monitoring data monthly, comparing it against the 35dBA criteria and analysing the data for mining noise. The monthly reviews found that there were no criteria exceedances and low-level mining noise was audible.

MAC performed unattended road noise surveys on the boundary of 664 Majors Creek Road, Jembaicumbene (R34) over a two-day period 28 February 2023 and 1 March 2023, to assess road traffic noise levels associated with mine vehicles and found that the noise contribution of mine related traffic at this location remained below the relevant criteria.

Detailed monitoring data for attended road noise monitoring is available on Aurelia’s website: <https://aureliametals.com/dargues-mines-compliance-and-regulatory-information/>

6.3.3 Performance Issues and Proposed Improvements

BIM’s personnel recently completed training into the use and data interpretation of a handheld noise monitor. This will be implemented as part of the investigation process upon receiving noise complaints.

Further, due to repeated community complaints regarding noise assumed to be originating from the TSF pump, noise partitions have been purchased and established around the pump. This has been to reduce noise carriage.

6.4 Blasting

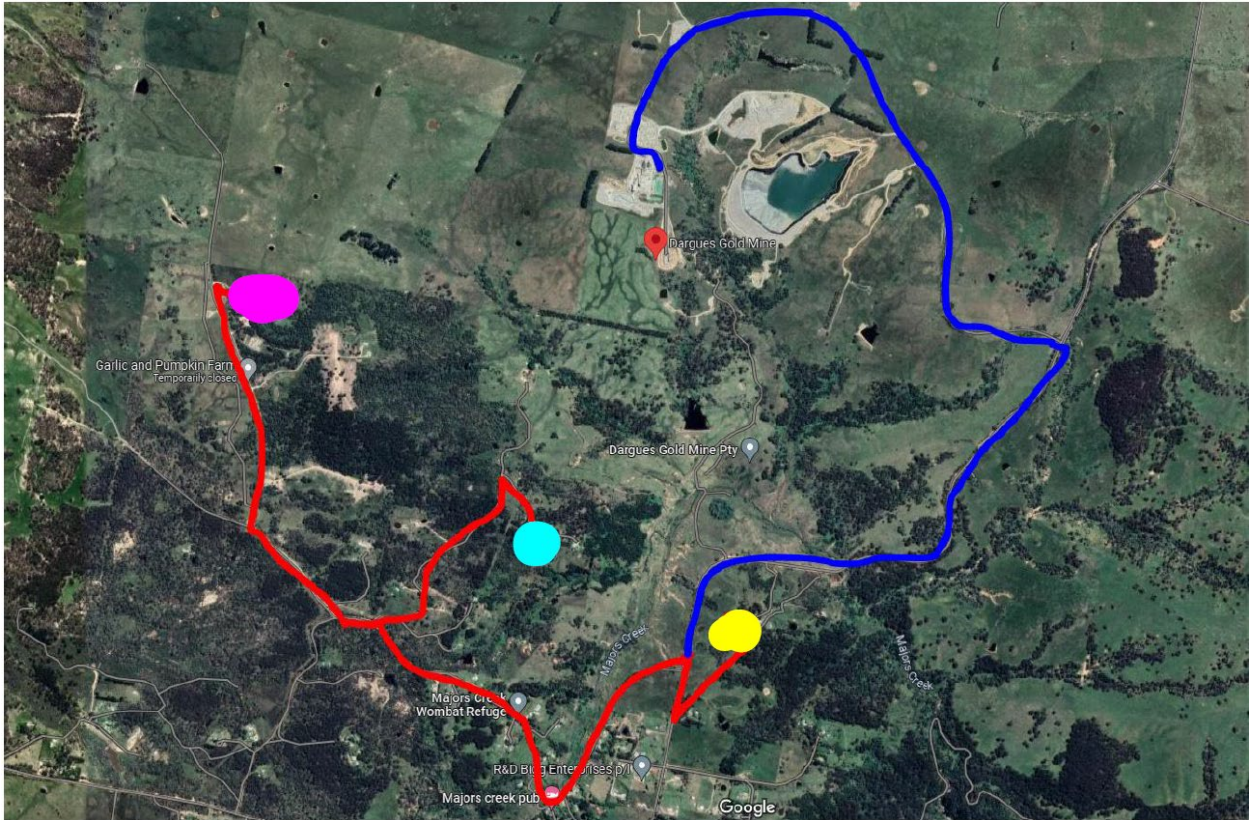
6.4.1 Environmental Management

Blasting at DGM is managed in accordance with the *Blasting Management Plan (2022)*. Management Measures undertaken include:

- All blasts designed by a suitably qualified and experienced blasting engineer.
- Blasts designed using suitable site law or industry standard formulas that ensure compliance with blast criteria.
- Underground blasting may be undertaken at any time.

Blasting criteria limits are provided in **Table 18** with blast monitoring locations shown on **Figure 4**.

Figure 4 Surrounding Residences and Blast Monitoring Locations



BM-1 = -35.558916° 149.747169°

BM-2 -35.556346° 149.739489° 100 Cawthorn Lane Majors Creek

BM-3 -35.548709° 149.729645° 60 Grey Gums Road Majors Creek

Table 18 Blasting Criteria as per Schedule 3, Condition 6 of PA 10_0054 MOD5

Location	Time of Blasting	Airblast Overpressure (db Lin Peak)	Ground Vibrations (mm/s)	Allowable Exceedance
Residence on privately owned land	Any time	120	10	0%
	Day	115	5	5% of the total number of blasts over a period of 12 months
	Evening	-	2	
	Night and all day on Sundays and public holidays	-	1	0%

6.4.2 Environmental Monitoring Results

Blast monitoring is undertaken at three locations surrounding DGM. The monitoring systems are managed by Saros with data web-hosted online via the Envirohub system that can allocate recorded data with manually entered blast times. A summary of the blast monitoring results is provided in **Table 19**.

Table 19 Blasting Monitoring for the Reporting Period

Month	BM1		BM2		BM3	
	PPVmax (mm/s)	PPVmax (99.5%) (mm/s)	PPVmax (mm/s)	PPVmax (99.5%) (mm/s)	PPVmax (mm/s)	PPVmax (99.5%) (mm/s)
Jul 22	1.18	0.09	0.57	0.07	0.27	0.06
Aug 22	1.65	0.06	0.47	0.06	0.99	0.07
Sept 22	0.51	0.07	0.43	0.06	0.47	0.06
Oct 22	0.61	0.08	0.67	0.06	0.34	0.06
Nov 22	0.36	0.07	0.61	0.07	0.36	0.06
Dec 22	0.73	0.07	0.65	0.09	0.20	0.05
Jan 23	0.47	0.09	0.63	0.08	0.76	0.05
Feb 23	0.42	0.07	0.65	0.09	0.24	0.05
Mar 23	0.29	0.06	0.60	0.07	0.28	0.05
Apr 23	0.20	0.05	0.90	0.08	1.39	0.06
May 23	1.52	0.20	0.46	0.09	0.47	0.06
Jun 23	2.65	0.62	0.36	0.10	0.31	0.06

There were no exceedances of ground vibration criteria throughout the reporting period. Air blast overpressure was not monitored, as all blasting at Dargues mine is underground. Blast monitoring results were also lower than the levels predicted in the EA (Corkery, 2010). As per Schedule 3 and Condition 7 of PA 10_0054, underground blasting can occur at any time.

Ground vibration readings of 1.18 and 1.65mm/ sec from BM1, in July and August 2022 was the result of blasting activity during daylight hours.

In May and June 2023, ground vibration readings of 1.52 and 2.65mm/ sec from BM1, was again due to blasting activity during daylight hours.

In April 2023, BM3 returned ground vibration reading of 1.39mm/ sec, because of blasting activity during daylight hours.

6.4.3 Performance Issues and Proposed Improvements

No performance issues were identified during the reporting period.

6.5 Waste

During the reporting period, waste produced at DGM was disposed of via a licenced waste contractor. The waste streams disposed of included general waste, hydrocarbon contaminated materials, steel, plastic and chemical drums. Where possible, waste materials are recycled or reused. For example, chemical containers are, where possible, returned to the supplier to be refilled, while steel and plastics are separated and sent for recycling.

Underground Paste Fill

Monitoring results for paste fill must be below the trigger values presented in Table 20, as per the Waste Management Plan. DGM continued to use paste fill to backfill underground stopes during the reporting period. Chemical properties of the paste monitored was always below the trigger values.

Table 20 Paste fill trigger criteria

	Paste Fill	SSC Criteria
Contaminant	95% UCL Trigger Value	General Solid Waste (CT1)
Arsenic	≥100	100
Beryllium	≥20	20
Cadmium	≥20	20
Chromium (VI)	≥100	100
Lead	≥100	100
Mercury	≥4	4
Molybdenum	≥100	100
Nickel	≥40	40
Selenium	≥20	20
Silver	≥	100
Note 1: All units mg/kg		

There were no exceedances of the 95% UCL trigger values for paste fill during the reporting period (n=7).

6.6 Air Quality and Greenhouse Gas

6.6.1 Environmental Management

Management of air quality and greenhouse gas is undertaken in accordance with the *Air Quality and Greenhouse Gas Management Plan* (Corkery, 2019a). Management measures include:

- Implement appropriate management and controls to mitigate the generation of dust and particulate matter, including:
 - Minimising disturbance areas and stabilisation of disturbance areas not required for mining operations as soon as practicable following construction;
 - Maintain ore handling areas/ stockpiles in moist condition as required using water carts;
 - Use conveyors within process plant to transport crushed ore minerals and use water sprayers on key transfer points within the plant; and

- Watering of all roads as required and enforce speed limit of 40km/h.
- Implement greenhouse gas management measures including:
 - Consider efficiency of all new diesel and electric mobile and fixed equipment during procurement;
 - Maintain equipment as per the manufacturer’s specifications; and
 - Emissions and abatement strategies will be reported annually.

BIM operates five dust deposition gauges (DDGs) within or surrounding the site, which are measured monthly for insoluble solids and percentage ash; and one High Volume Air Sampler (HVAS) at Residence R20 to measure PM₁₀ on a 24-hour, one-day-in-six frequency, during operation. The location of air quality monitoring locations and surrounding receptors are shown in **Figure 5**. The criteria for deposited dust, Total Suspended Particles (TSP) and PM₁₀ are provided in **Table 21**.

Table 21 Impact Assessment Predictions and PA 10_0054 MOD4 Criteria

Pollutant	Averaging Period	Impact Assessment / PA 10_0054 MOD4 Criterion		EA Predictions	
Short-Term Impact Assessment Criteria					
Particulate Matter <10 µm (PM ₁₀)	24 hour	50 µg/m ³		8 µg/m ³ ¹	
Long-Term Impact Assessment Criteria					
Particulate Matter <10 µm (PM ₁₀)	Annual	30 µg/m ³		22 µg/m ³ ²	
Total Suspended Particulate Matter (TSP)	Annual	90 µg/m ³		54 µg/m ³ ²	
Deposited Dust (insoluble solids)	Annual	Max Increase	Max Total	Max Increase	Max Total
		2g/m ² /month	4g/m ² /month	0.11g/m ² /month ¹	2.5g/m ² /month ²
¹ Predictions based on Project only					
² Predications based on Cumulative					

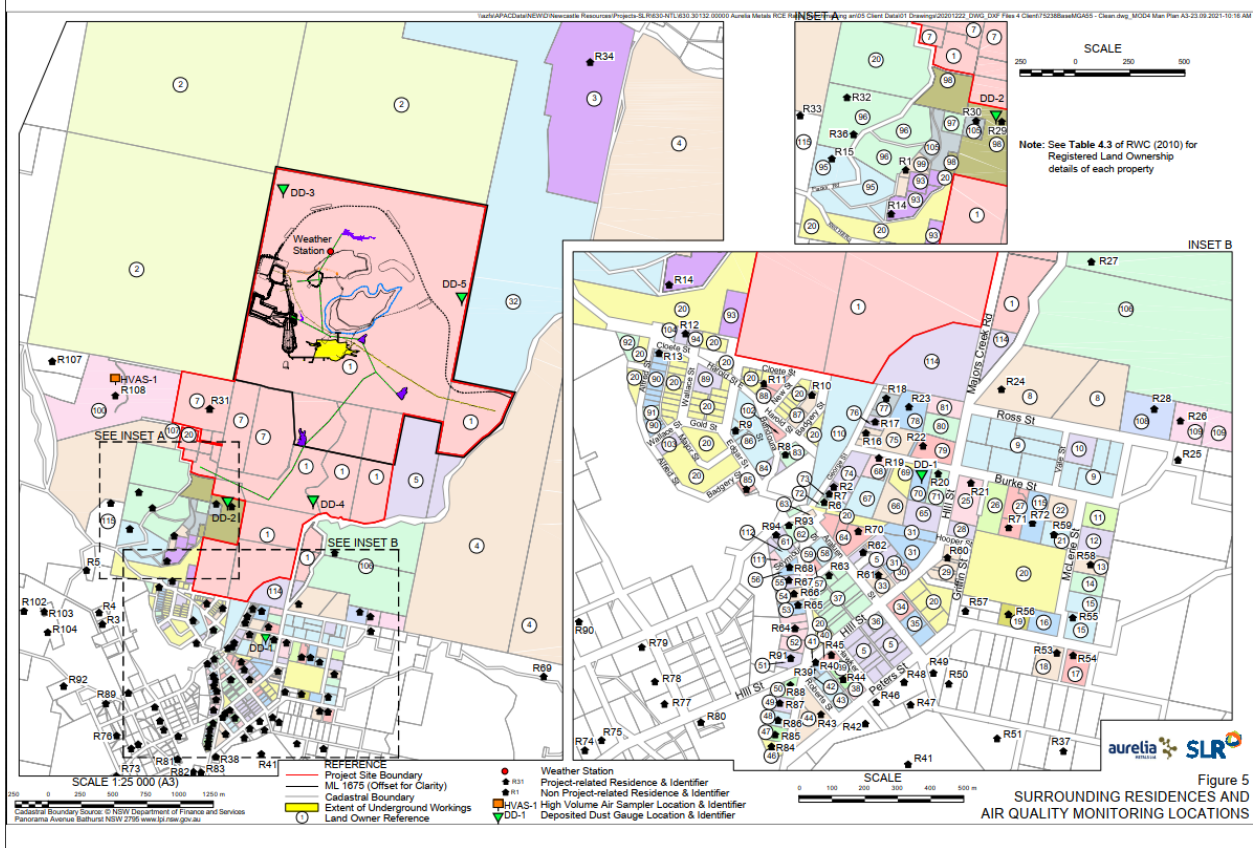
Greenhouse Gas Emissions

A summary of greenhouse gas emission data for the 2021/ 22 financial year is presented in **Table 22**. As the FY23 National Greenhouse and Energy Reporting (NGER) is still to be completed and is not due for submission until September 2023. Therefore, only FY22 data has been included.

Table 22 National Greenhouse and Energy Reporting FY22

Data (year)	Scope 1 ^a (t CO _{2-e})	Scope 2 ^b (t CO _{2-e})	Total (Scope 1 and Scope 2)
2021/ 22	3,622	15,589	19,211

Figure 5 Surrounding Residences and Air Quality Monitoring Locations



6.6.2 Environmental Monitoring Results

Deposited Dust (Insoluble Solids)

Deposited dust monitoring was undertaken throughout the reporting period at monitoring locations DD1, DD2, DD3, DD4 and DD5. The monitoring results for the reporting period are shown and compared against Project Approval criteria and EA predictions, and where available long-term data is displayed, and trends discussed.

Deposited dust monitoring results of Insoluble Solids for the reporting period are provided in **Table 23**.

Table 23 Deposited Dust for the Reporting Period

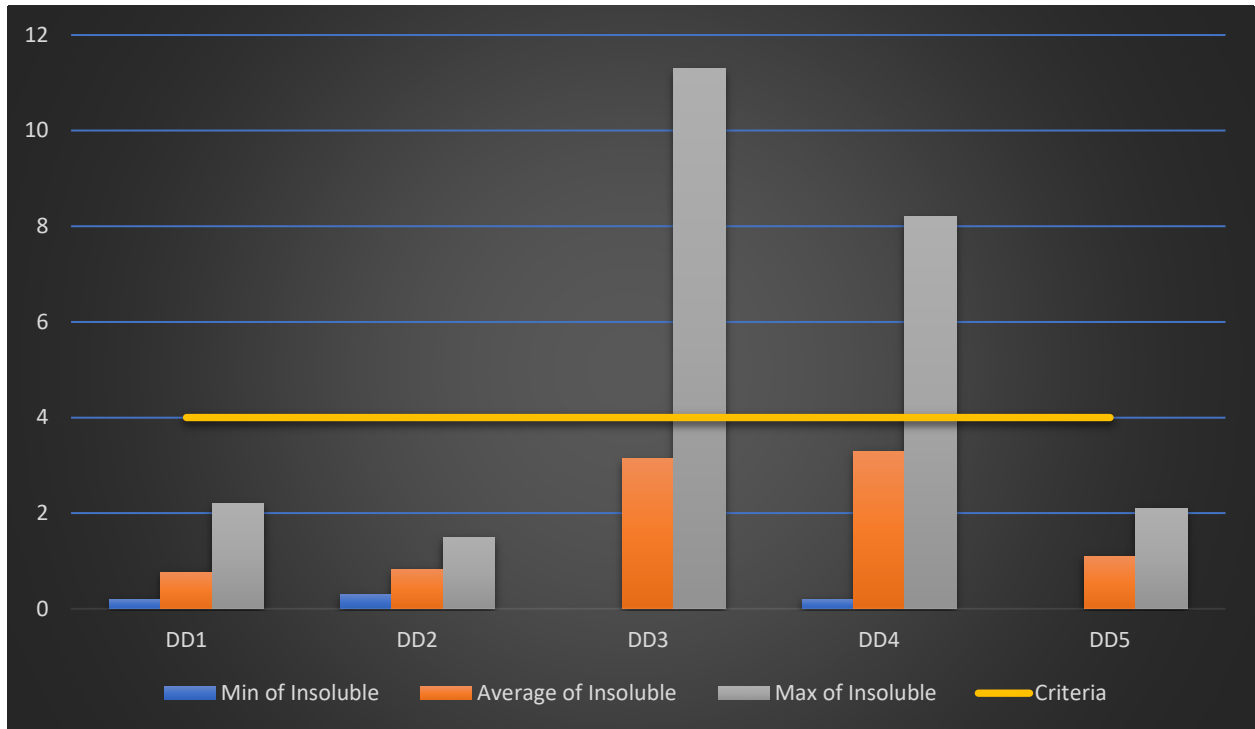
Insoluble Solids g/m ² /month					
Month	DD1	DD2	DD3	DD4	DD5
July 2022	0.2	0.4	1.8	0.5	1.8
August 2022	No data	0.4	1.5	3.1	2.1
September 2022	0.4	1.1	9.6	1.9	0.6
October 2022	0.5	1.5	11.3	4.4	0.9
November 2022	0.8	1.3	6.1	4.1	2.1
December 2022	1.9	1.4	4.2	1.1	2.1
January 2023	0.5	1.0	1.3	0.4	0.6
February 2023	2.2	0.7	0.9	1.0	1.4
March 2023	0.5	0.7	0.6	7.9	1.0
April 2023	0.5	0.3	<0.2	0.2	<0.2
May 2023	0.5	0.5	0.4	6.8	0.3
June 2023	0.4	0.7	0.2	8.2	0.5
Min	0.2	0.3	<0.2	0.2	<0.2
Max	2.2	1.5	11.3	8.2	2.1
Average	0.76	0.83	3.14	3.3	1.1

Deposited Dust results revealed that all sites were below the annual average criteria of 4g/m²/month.

Most months (87%) were below the annual 4 g/m²/month Project Approval criteria. There were 12 monthly occurrences where the insoluble solids were >2g/m²/month criteria occurred during the reporting period, but when annualised it was also noted that during the reporting period there were 8 occurrences above the EA prediction of 2.5 g/m²/month.

A summary of the depositional dust monitoring results of Insoluble Solids for the reporting period are provided in Figure 6.

Figure 6 Dust deposition for the reporting period



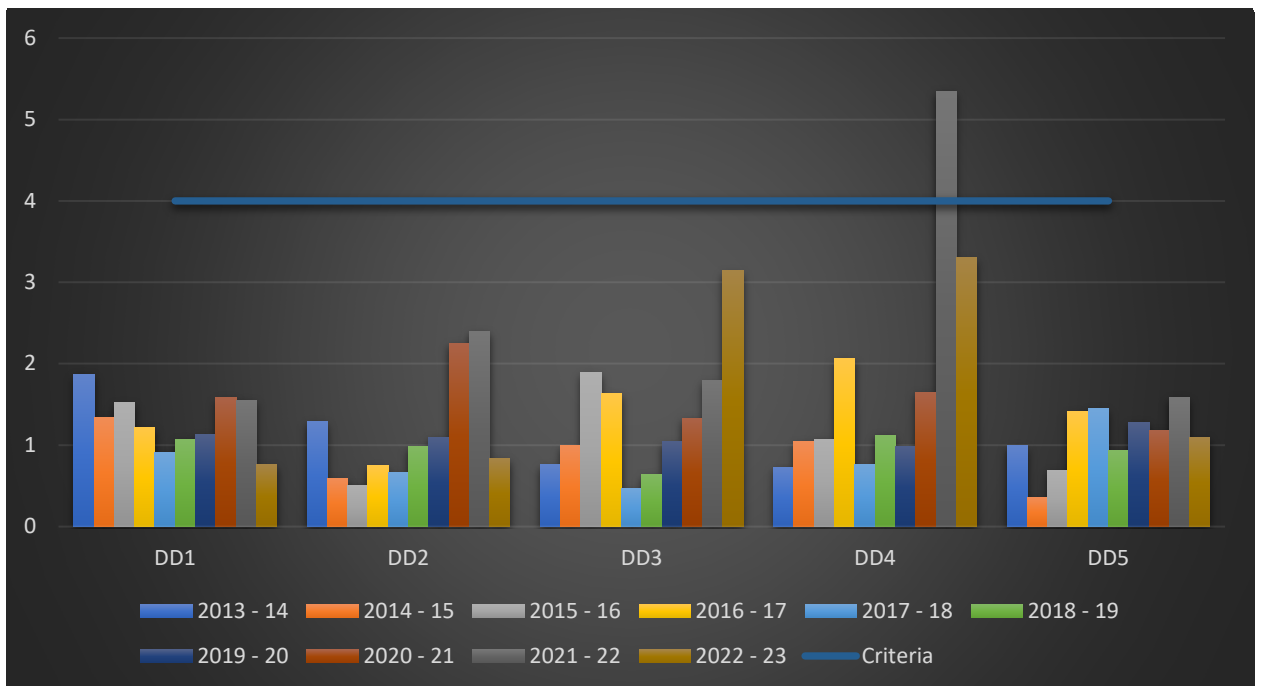
Long term deposited dust monitoring results of Insoluble Solids from 2013 to 2023 are provided in Table 24 and graphically represented in Figure 7.

Table 24 Long Term Deposited Dust Results

Row Labels	DD-1	DD-2	DD-3	DD-4	DD-5
Average of Insoluble (g/m²/month)					
2013 - 2014	1.87	1.29	0.76	0.73	0.99
2014 - 2015	1.34	0.59	0.99	1.04	0.36
2015 - 2016	1.52	0.51	1.89	1.07	0.69
2016 - 2017	1.22	0.75	1.63	2.06	1.41
2017 - 2018	0.91	0.66	0.47	0.76	1.45
2018 - 2019	1.07	0.98	0.64	1.12	0.93
2019 - 2020	1.13	1.1	1.04	0.98	1.28
2020 - 2021	1.58	2.25	1.33	1.65	1.18
2021 - 2022	1.55	2.39	1.79	5.35	1.58
2022 - 2023	0.76	0.83	3.14	3.3	1.1
Min of Insoluble (g/m²/month)					
2013 - 2014	1.1	0.3	0.1	0.1	0.1
2014 - 2015	0.4	0.2	0.1	0.3	0.2
2015 - 2016	0.7	0.2	0.2	0.5	0.2
2016 - 2017	0.2	0.2	0.3	0.3	0.2
2017 - 2018	0.2	0.2	0.2	0.3	0.2
2018 - 2019	0	0	0	0	0
2019 - 2020	0	0	0	0	0
2020 - 2021	0.4	0.8	0.5	0.3	0.4
2021 - 2022	0.4	0.9	0.3	0.8	0.4
2022 - 2023	0.2	0.3	<0.2	0.2	<0.2

Row Labels	DD-1	DD-2	DD-3	DD-4	DD-5
Max of Insoluble (g/m²/month)					
2013 - 2014	3.1	3.2	3	3.2	2.4
2014 - 2015	2.8	1.2	2.2	2.5	0.6
2015 - 2016	3.2	0.9	3.3	3.1	2.1
2016 - 2017	2.7	2.1	3.5	3.5	3.5
2017 - 2018	2.6	1.1	1.4	1.7	3.4
2018 - 2019	2.7	3.3	2.2	4	3.3
2019 - 2020	2.6	3.5	3.2	3.6	3.3
2020 - 2021	4.3	8.2	5.9	7.2	4.0
2021 - 2022	2.9	3.7	4.3	12.9	4.3
2022 - 2023	2.2	1.5	11.3	8.2	2.1

Figure 7 Average Long-Term Dust Deposition Results 2014 to 2023



The depositional dust average results have, (except for isolated anomalies) over the last ten-year reporting period remained below the Project Approval criteria of 4 g/m²/month, including remaining consistent with the EA predictions. Comparing all years there is no apparently “affected” monitoring location across the DGM network. When considering the varying results recorded at each monitoring location and taken randomly from any reporting period, indicates that DGM is not contributing significantly to dust deposition levels in the surrounding environment.

ALS notified DGM Environmental Technician on 09/09/2022 that DD1 vessel had been damaged during transit, resulting in its contents spilling and unsuitable for analysis. The other dust samples were undamaged and were subsequently analysed. This non-compliance was reported to DPE on the 16/09/2022, who noted the noncompliance and acknowledged the reasons.

High Volume Dust PM10

PM₁₀ dust was undertaken at monitoring location HV1 throughout the reporting period. The monitoring results for the reporting period are shown and compared against Project Approval criteria and EA predictions, and where available long-term data is displayed and trends discussed.

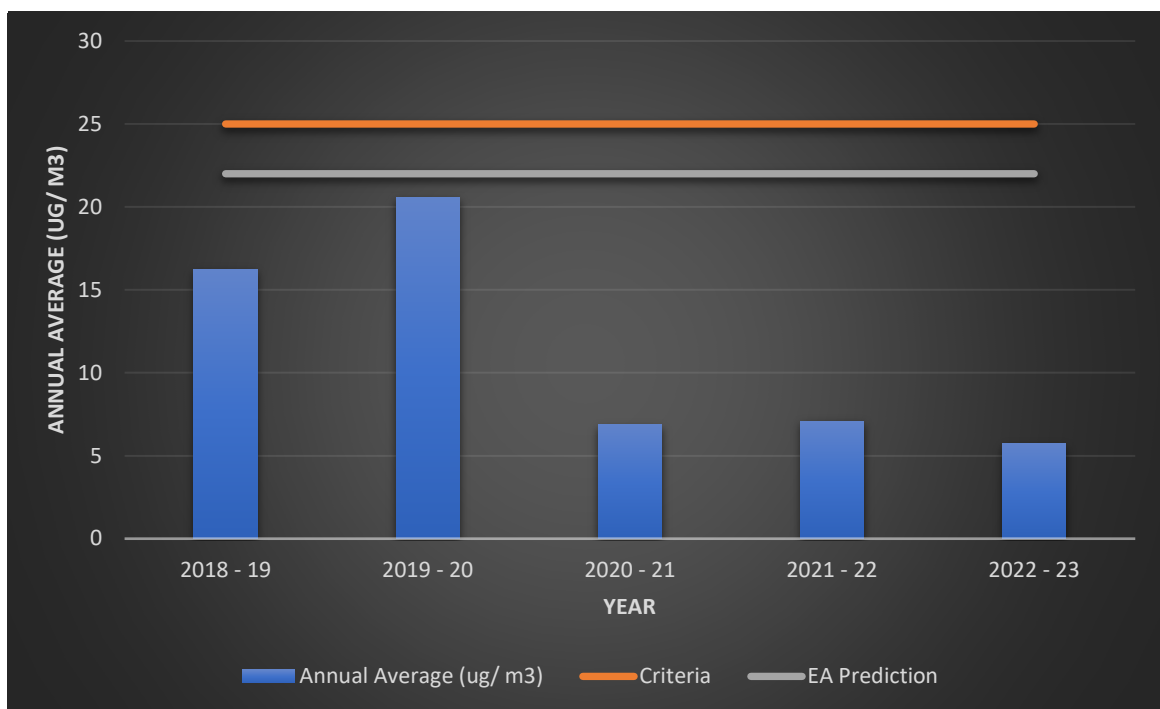
A summary of the High-Volume dust PM₁₀ monitoring results for the reporting period are provided in Table 25 and **Figure 8**.

Table 25 High Volume Dust PM₁₀ During Reporting Period

Summary data	PM ₁₀
Average	5.74
Minimum	1.10
Maximum	13.40

As presented in Table 25, PM₁₀ did not exceed the 50 µg/m³ 24hr criteria throughout the reporting period, although 27% of recorded 24hr PM₁₀ was above the EA Project Prediction of 8 µg/m³ from the project. The maximum recorded PM₁₀ value was 13.4 µg/m³ and the average was 6.05 µg/m³. Additionally, the annual average PM₁₀ result (6.05 µg/m³) was well below the 25 µg/m³ criteria, and below the EA annual average PM₁₀ prediction of 22 µg/m³ (for receptor R6). Refer to **Figure 9**.

Figure 8 High Volume Dust PM₁₀ during Reporting Period



The particulate matter concentrations recorded at the HVAS were considered representative of ambient background concentrations at sensitive receptors to the south. Annual average concentrations are below the applicable NSW EPA impact assessment criterion of 25 µg/m³ across all reviewed monitoring years.

Concentrations from July 2022 to June 2023 recorded at the DGM HVAS are considered comparable to the DPE Goulburn data. This emphasises that the DGM HVAS location is representative of ambient background particulate matter concentrations.

There are established relationships between PM₁₀ and TSP from the extractive industry whereby if the PM₁₀ long-term impact assessment criterion is met, the TSP criterion is expected to be satisfied. In view of this, PM₁₀ monitoring is proposed as a surrogate for demonstration of compliance with the TSP criterion and thus no TSP monitoring is to be undertaken, as outlined in the Air Quality and Greenhouse Gas Management Plan, **Section 7.1.3**.

6.6.3 Performance Issues and Proposed Improvements

DGM conducted a review of site’s dust monitoring network and concluded that the introduction of metals analysis to PM₁₀ and dust deposition gauges would improve data interpretation capabilities. Following this

trial and due to Aurelia stance across all its sites regarding the analysis of metals, DGM will continue to include metals in its air quality analysis.

6.7 Biodiversity

6.7.1 Environmental Management

Flora and fauna are managed in accordance with the *Biodiversity Management Plan (BMP)* (Corkery, 2019d). Management measures undertaken include:

- Implement biodiversity offset strategy;
- Erosion and gully management;
- Fencing of Tableland Basalt Forest Endangered Ecological Community (EEC) within the on-site biodiversity offset area;
- Continued management of weeds and pests;
- Bushfire management;
- Appropriate grazing management practices to encourage re-establishment of Natural Temperate Grassland EEC in grassland/pasture covered areas;
- Coordinating grazing and fire management to manage weeds through reducing reinfestations and spread;
- Management of disturbed and cleared land including stock exclusion and revegetation;
- Relocation of wombats in accordance with the Wombat Management Plan; and
- Undertake routine monitoring.

Biodiversity monitoring is implemented for the biodiversity offset areas at DGM as part of the BMP with results to be compared between monitoring locations both on and offsite, and over time. Biodiversity monitoring includes:

- Terrestrial Flora and Fauna Monitoring;
- Aquatic Ecological Monitoring; and
- Stygofauna Monitoring.

During the reporting period DGM negotiated and finalised a Credit Transfer Agreement, (CTA) with the landholder regarding the offsite Biodiversity Offset. It is expected that the CTA will be finalising prior to the 30 November 2023, with a Biodiversity Stewardship Agreement, (BSA) completed by 29 March 2024.

During the reporting period, DGM applied for an extension to the timeframe to secure off-site biodiversity offsets. Approval of this extension was granted by DPE to the 29 March 2024.

6.7.2 Environmental Monitoring Results

Terrestrial Flora and Fauna

Ecological monitoring for terrestrial flora and fauna was carried out in 2022-23 as part of the BMPs monitoring program by Scatsabout (2023) including:

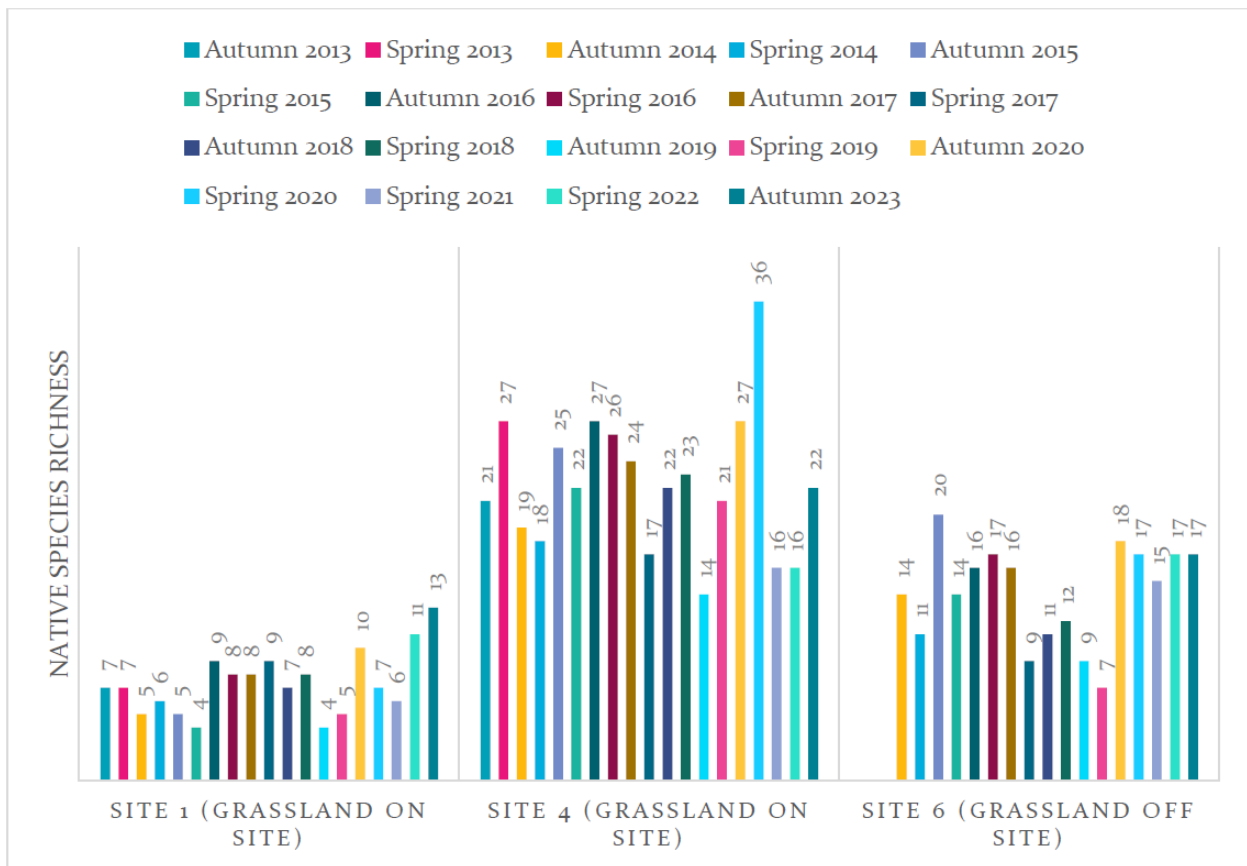
- Six flora monitoring sites (four on-site and two off-site references) in both open forest and native grassland areas; and
- Four fauna monitoring sites (including surveys for diurnal birds, nocturnal species, microchiropteran bats and ground fauna).

Terrestrial flora monitoring did not indicate any substantial changes in species composition or abundance since operations commenced at DGM. The balance between native and exotic species changed over the Spring 2022 and Autumn 2023 surveys, with *Microlaena* and *Themeda* performing the strongest in the autumn survey, but being overshadowed by exotics in Spring. This may be due to the long cold wet winter which preceded the spring survey window. However, historical data suggests that exotics species can be up to 10% greater in cover than native species during the Spring window.

During the autumn survey in 2023 a total of 117 flora species (consisting of 86 native species, 30 exotic species and 1 species not determined as native or exotic) were recorded across the six floristic monitoring sites. Similar to 2022 the dominant groundcover species in the on-site open forest plots was the native perennial grass *Microlaena stipoides* (Weeping grass). Other native species were also present in less than 5% cover.

Overall, native ground cover showed a strong decline at all locations in Spring 2022. However, this was countered by a degree of recovery at all sites in Autumn 2023. Site six continued to have a reduction in overall native groundcover, whilst the other onsite locations remained relatively stable, indicates that the current onsite management of grasslands continues to meet the requirements of DGM's licence.

Figure 10 Native Species Richness in Open Grassland Sites

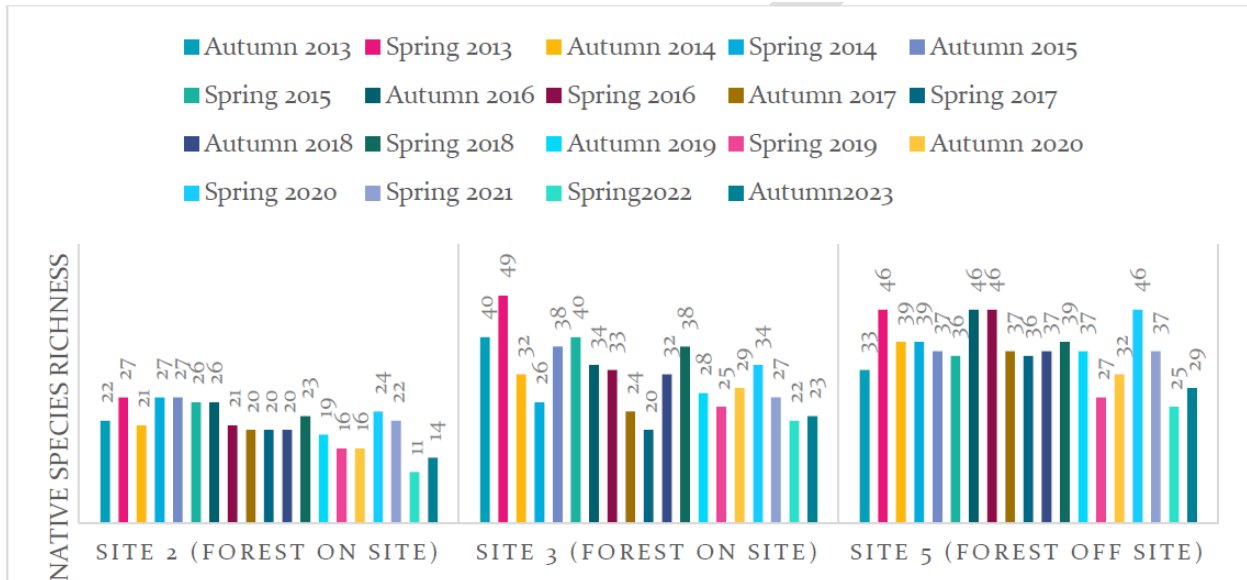


All open forest sites are located in grassy forest dominated by an open canopy of *Eucalyptus viminalis* (Ribbon Gum) and *E. radiata* (Narrow-leaved Peppermint). The shrub layer in all plots were found to be sparse, which is indicative of these plant community types.

Mature hollow-bearing trees and logs were present in all open forest monitoring sites. These features provide structural complexity and potential fauna habitat.

The dominant onsite forest groundcover was similar to the previous year with the native perennial grass *Microlaena stipoides* (Weeping grass) and *Poa sieberiana* (Snow grass) identified. Consistent with previous years, dominate offsite forest groundcover was native grass *Austrostipa rudis* (60% Autumn 2023) with *Microlaena stipoides* dominating in Spring 2022 (90% cover).

Figure 11 Native Species Richness in Open Forest



During the 2023 terrestrial fauna monitoring a total of 97 species were detected with bird species the dominant species sited, a summary of the fauna monitoring results is shown in **Table 26**.

Table 26 Fauna Monitoring Summary

Group	2016	2017	2018	2020	2021	2023
Birds	50	43	77	55	55	61
Frogs	7	8	8	9	7	7
Mammals (excl. mircobats)	8	9	7	6	12	11
Reptiles	8	6	7	6	5	4
Microchiropteran Bats	12	12	12	15	16	14
Total number of species detected	85	78	111	91	95	97

The terrestrial fauna monitoring results for spring 2022 were comparable to previous years, with bird diversity above the average range at all sites. Frog diversity was comparable with previous years, likely due to the above average weather conditions leading up to and during the survey period.

The diversity of habitat features associated with the open forest vegetation, such as hollow-bearing trees, large woody debris, rocks and creeks, have been shown in previous monitoring years to support a range of native fauna species.

Aquatic Ecology

Aquatic ecological monitoring was carried out in Spring 2022 and Autumn 2023 as part of the BMPs monitoring program by the Centre for Applied Water Science, University of Canberra. Monitoring included a total of eight sites, three reference sites upstream of the mine, three sites downstream of the mine and two sites approximately 6km downstream of the mine. Additionally, four groundwater monitoring bores were sampled for stygofauna.

Key outcomes of the monitoring for the reporting period include:

- All sites, except for AE6 were found to be in a similar condition in Autumn 2023 as they were in Spring 2022. Site AE6 dropped its *River Channel Environment*, (RCE) score in Autumn 2023 from ‘very good’ to ‘good’ due to an increase in algal and macrophyte growth.

- Site AE6 was not sampled in Autumn 2023 as there was no suitable edge habitat due to low flows in Spring Creek.
- Rainfall events were less frequent in the months leading up to the autumn sampling, resulting in reduced base flow and much smaller peaks in discharge associated with these events.
- The riparian condition of sites was classes had either good, very good or excellent and there were no large changes to these classes between the spring 2021 and autumn 2022 surveys.
- Macroinvertebrate communities had 59 taxa across all sites. Two families occurred at all sites sampled in Autumn 2023, which included *Leptophlebiidae* and *Orthocladinae*.
- There was no significant difference in the macroinvertebrate communities between sites upstream of the mine and sites downstream of the mine.
- Pertaining to fish communities; during the Autumn 2023 survey, Australian smelt and Common galaxias were identified at sites AE1 and AE2. These species were undetected in the Spring 2022 survey.

Stygofauna

Stygofauna monitoring was undertaken in Spring 2022 and Autumn 2023 as part of the aquatic ecology monitoring surveys completed by the Centre for Applied Water Science, University of Canberra. Bores 1, 4, 6, and 8 were sampled for stygofauna. Interestingly, the Spring 22 survey found two types of stygofauna, (a copepod and a spring tail) which were detected in Bore 1.

Future surveys will determine if this discovery is an anomaly or there has been a longer-term change in the stygofauna.

Weed and Pest Management

In May 2023, DGM facilitated the removal of 27 feral sheep from its tenements.

Weed management was carried out throughout the year, as dictated by weather. In April 2023, DGM purchased a new spray unit to replace the older unit.

6.7.3 Performance Issues and Proposed Improvement

There were no biodiversity related incidents during the reporting period. However, several recommendations were made from the 2022 terrestrial flora and fauna monitoring surveys (Scatsabout, 2022), including:

- Continue monitoring as per current schedule;
- Continue weed management activities for Stoch Broom (*Cytisus scoparius*) and Blackberry (*Rubus fruticosus* spp. agg) as needed; and
- Develop and implement a feral animal control program to remove species such as feral sheep.
- Review Dargues' grazing management plan to support native grassland establishment.

Proposed improvements include:

- Improvement to areas of fencing to manage livestock;
- Continued spraying and management;
- Review site's grazing management plan to support native grassland establishment.

6.8 Heritage

An archaeological survey was completed in March 2022 for the approved MOD5 modifications to DGM. The following findings were identified:

- No previously recorded Aboriginal heritage sites were present in the project area;
- One area of potential archaeological deposit (PAD) (DGM PAD22-1) was identified;
- Soils appeared to be erosive in nature, as dependant on landform. Area had been subject to ploughing and cropping in the past; and
- Visibility was low across the project area at the time of survey due to excessive grass coverage, with areas of erosion present.

Consequential to the 2022 survey, subsurface testing was conducted in January/ February 2023 to determine the potential impacts on any subsurface deposits. The testing results identified a potential artefact area in one of the excavated test pits, (DGM1, AHIMS Pending) consisting of nine artefacts. However, this area is well outside the proposed Water Storage Dam area, thus will not be disturbed during construction works.

No heritage items were relocated during the reporting period. To-date only Aboriginal sites GT OS1 and GT OS2 have had items resumed and relocated. This was performed under the guidance of archaeologists Veronica Norman and Michael Lever (Artefact Heritage) on 27 April 2017 with the participation of the following stakeholders:

- Buru Ngunawal Aboriginal Corporation Traditional Carer Group;
- Batemans Bay LALC; and
- Little Gudgenby River Tribal Council.

There are no future disturbances planned for previously identified aboriginal artefact sites. Fence maintenance of artefact areas was completed as required throughout the reporting period.

7. Water Management

7.1 Water Management

Water management for the reporting period was undertaken in accordance with the *Water Management Plan* (BIM, 2022). Water Management details for the reporting period are summarised in **Table 27**.

During the reporting period, BIM undertook the following water management activities, which are detailed further in the following subsections:

7.1.1 Water Balance

Water management for the reporting period was undertaken in accordance with the Dargues Gold Mine Water Management Plan. Water management details for the reporting period are summarised in **Table 27**.

Table 27 Water Balance management details for the Reporting Period

Water Management Element	Existing Conditions (July 2022 – June 2023) ML/year
INPUTS	
Direct rainfall	74.83
Catchment runoff	308
Groundwater inflows	40.9
Ore moisture	18
TOTAL INPUTS	441.73
OUTPUTS	
Evaporation	23.4
Water entrained in tailings	138
Dust suppression	7.36
Irrigation	109.4
Transfers to WTP	1
Offsite discharges	0
TOTAL OUTPUTS	279.16
CHANGE IN STORAGE	
Surface water storages	500
TOTAL CHANGE IN STORAGE	200
BALANCE	
Inputs – outputs – change in storage	-37.43

DGM is currently in the process of reviewing and finalising its water balance model, which has better inform site regarding its water inventory.

7.2 Groundwater

7.2.1 Environmental Management

Groundwater is managed in accordance with the approved *Water Management Plan (WMP)*.

DGM has four licenced groundwater extraction points (**Table 28**) that are potential raw water sources for the Site. The Snobs bore was installed and commissioned in 2019/ 20, but not used in 2022-23. Additionally, the Stewart and Mertons bore was installed and commissioned in 2022, but not used in 2022-23.

The United Miners and Dargues Production Bores are yet to be constructed.

Table 28 Licenced Groundwater Extraction Points

Description	Source ID	Extraction (Quantity (m ³))	Type	Details/Comments
WAL39281	LWB06	320,000	Raw	Dargues Gold Mine
WAL39282	LWB07	39,000	Raw	Snobs
WAL39287	LWB08	16,000	Raw	Stewart and Merton's
WAL39292	LWB09	24,000	Raw	United Miners
WAL37848	LWB10	1,000	Raw	Dargues Production Bores

BIM undertake a groundwater monitoring program which has been designed to provide timely warning of any unpredicted or adverse impacts so that remedial actions can be taken. In addition, the program will also provide information that will be used to refine the groundwater model during the life of the mine. Groundwater monitoring includes:

- 13 dedicated monitoring bores;
- Six TSF monitoring bores; and
- Three bores accessing historic workings.

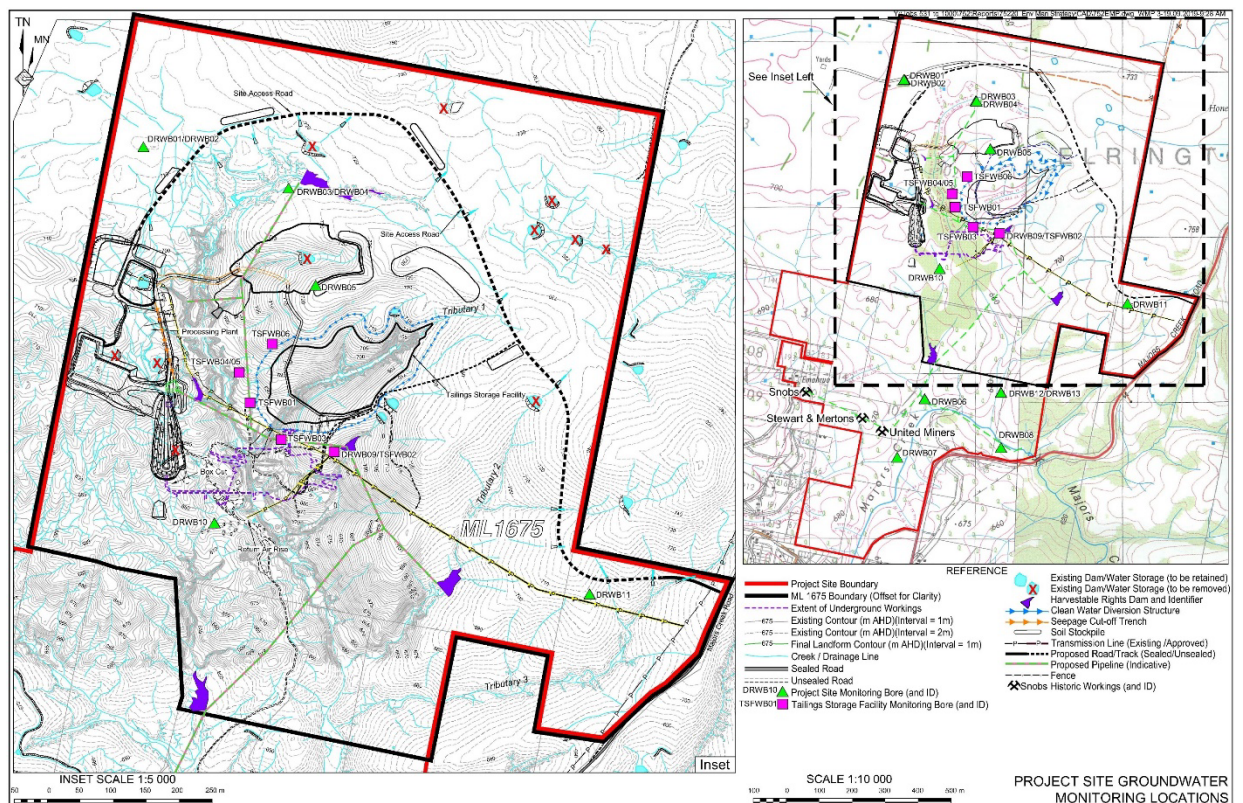
Table 29 displays the monitoring type and frequency of current groundwater monitoring program, with monitoring points shown on **Figure 12**. Groundwater monitoring includes quality trigger values as described in the WMP for groundwater within and surrounding DGM that would be implemented throughout the project lifetime. Where the water quality is worse than the trigger values, the Surface Water Quality Trigger Action Response Plan (TARP) is implemented.

Table 29 Groundwater Monitoring Program

Location	Frequency	Parameter ¹
Project Site Monitoring Bores		
DRWB06, DRWB07, DRWB08, DRWB09, DRWB10, DRWB012	Monthly/quarterly	pH, EC, DO, REDOX, Temp , Major cations, Major anions, TKN, TON, Ammonia Nitrogen, P, Metals, Xanthates, CaCO ₃
DRWB09, DRWB010	Monthly/quarterly	Pumping rate
DRWB011	Monthly/quarterly	SWL
Deep Granodiorite Aquifer		
DRWB013	Monthly/quarterly	pH, EC, DO, REDOX, Temp , Major cations, Major anions, TKN, TON, Ammonia Nitrogen, P, Metals, Xanthates, CaCO ₃

Location	Frequency	Parameter ¹
Tailings Storage Facility Monitoring Bores		
TSFMB01A*, TSFMB02A, TSFMB03A, TSFMB04A*, TSFMB05A*, TSFMB01B*, TSFMB02B, TSFMB03B, TSFMB04B, TSFMB05B	Weekly/monthly	pH, EC, DO, REDOX, Temp , Major cations, Major anions, TKN, TON, Ammonia Nitrogen, P, Metals, Xanthates, CaCO ₃
Historic Workings		
Snobs, Stuart and Mertons, United Mines	Monthly/quarterly, (currently only Snobs bore is in place and is not in use, thus is not being currently monitored).	pH, EC, DO, REDOX, Temp , Major cations, Major anions, TKN, TON, Ammonia Nitrogen, P, Metals, CaCO ₃ , Pumping rate, SWL
Registered Private Bores - < 3km		
GW100156, GW110023, GW101854	Quarterly/annual, (not compliance monitoring bores).	pH, EC, DO, REDOX, Temp , Major cations, Major anions, TKN, TON, Ammonia Nitrogen, P, Metals, CaCO ₃
GW100156, GW110023	Quarterly/annual, (not compliance monitoring bores).	SWL
¹ Monthly monitoring parameters are shown in bold SWL – Standing Water Level *Dry since construction		

Figure 9 Project Site Groundwater Monitoring Locations



7.2.2 Environmental Performance

Groundwater Take

Extraction quantities for the licenced water bores is provide in **Table 30**.

Table 30 Water Extracted During the Reporting Period

Licence #	Source	Entitlement	Passive take / inflows	Active pumping	Total
GROUNDWATER					
WAL39281 (Water Act 2000) 10AL119512 (Water Act 1912)	Dargues Gold Mine	Extraction of up to 320ML/y	40.9	0	40.9
WAL39282 (Water Act 2000) 10AL119514 (Water Act 1912)	Snobs workings	Extraction of up to 39ML/y	0	0	0
WAL39287 (Water Act 2000) 10AL119518 (Water Act 1912)	Stewart and Merton's workings	Extraction of up to 16ML/y	0	0	0
WAL39292 (Water Act 2000) 10AL119516 (Water Act 1912)	United Miners workings	Extraction of up to 24ML/y	0	0	0
WAL37848 (Water Act 2000) 10AL121684 (Water Act 1912)	Dargues Production Bores	Extraction of up to 1ML/y	0	0	0

Total groundwater, (indirect) take for the reporting period was 40.9ML which is below the total extraction limit of the mine. During the reporting period, the total groundwater take has decreased in comparison to previous years. This is due to a review of site's water balance model and groundwater model in 2023, which included consideration of recently established water flow meter dashboard, 'Wildeye'. Groundwater extraction for each WAL was well below the extraction limit & below the predictions in the EA.

Annual extraction results for the reporting periods 2017-18 to 2022-23 are shown in **Table 31**.

Table 31 Long-Term Groundwater Take

Source	Predicted (ML)	2017-18 ¹ (ML)	2018-19 (ML)	2019-20 (ML)	2020-21 (ML)	2021-22 (ML)	2022-23 (ML)
Dargues Gold Mine	0	0	30.4	63	40.9	48.8	40.9
Snobs	39.4	0	0	1.8	0.2	0	0
Stewart and Merton's	15.8	0	0	0	0	0	0
United Miners	23.7	0	0	0	0	0	0
Dargues Production Bores	0	-	-	-	0	0	0
Total	78.9	0	30.4	64.8	41.1	48.8	40.9

Groundwater take during the reporting period was lesser compared to previous years, which is due to a better informed water balance model for site.

During FY24, Dargues will complete a review of its groundwater balance model against its recently collected groundwater monitoring data, (2019 to 2023)

Groundwater Levels

Groundwater levels (**Figure 13**) within the DGM site remained steady, except for the following:

- DRWB10 is hydraulically connected to the old workings within the underground mine which have been dewatered to reduce the risk of inundation and inrush.
- Majority of standing water levels in monitoring bores have return to within pre-operative levels during the reporting period with alluvial aquifer bores remaining steady.

Groundwater Water Quality

The groundwater quality monitoring program continued during the reporting period.

A summary of the water quality results for the reporting period for some key sampled parameters are provided in **Table 32** below, with a summary of the full monitoring results provided in **Appendix A**.

Figure 10 Groundwater Levels

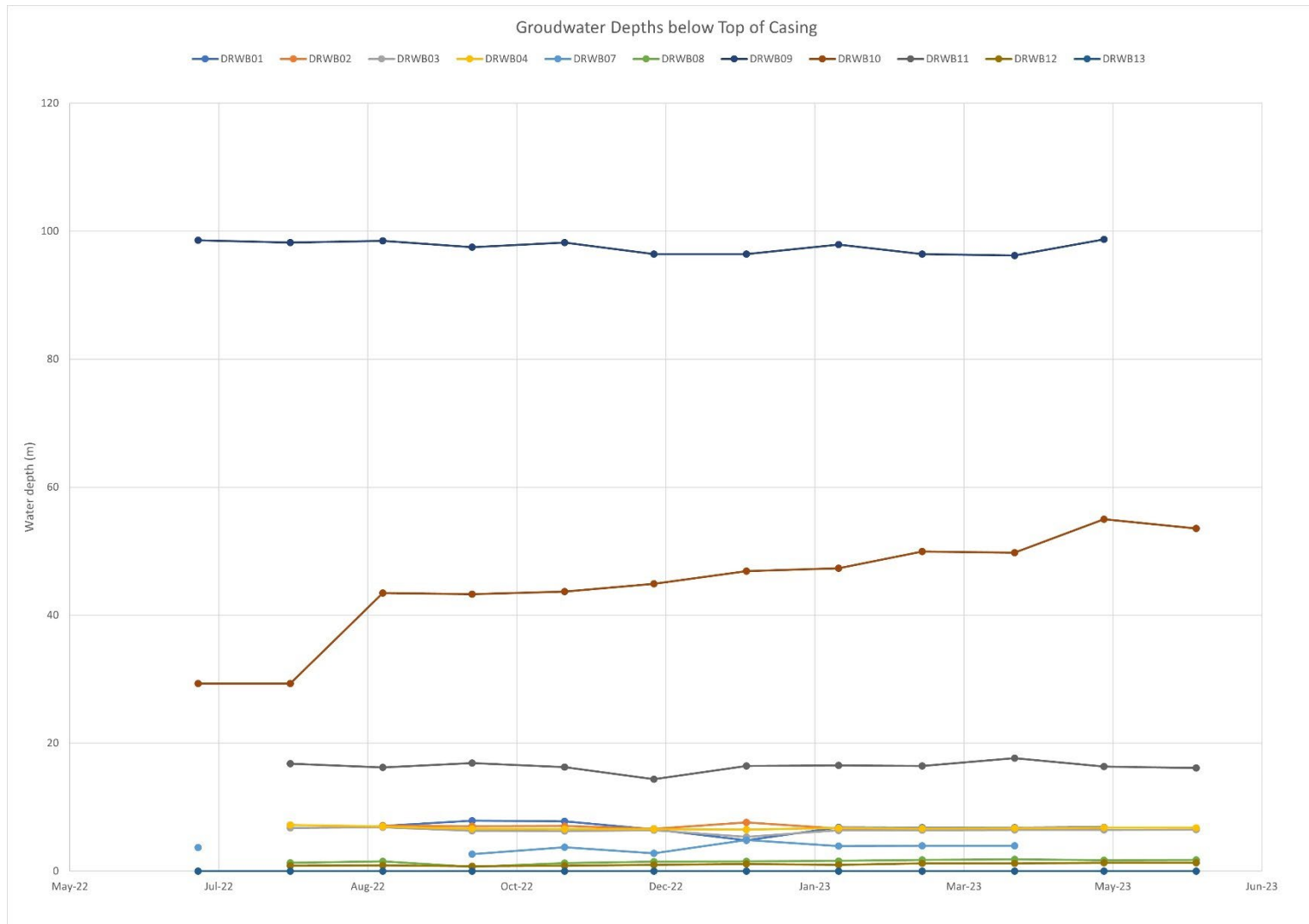


Table 32 Groundwater Monitoring Results

Parameters	pH Value		Electrical Conductivity	Dissolved Oxygen
Unit	pH		µg/cm	%sat
Trigger Value	6.5-8.5		>1300	3.21
Project Site Monitoring Bores				
DRWB06	Min	6.69	319	2.3
	Max	7.13	380	5.9
	Avg	6.89	345	3.4
DRWB07	Min	7.0	309	0.07
	Max	7.11	327	4.67
	Avg	7.06	320	2.44
DRWB08	Min	6.65	161	0.04
	Max	6.86	231	4.8
	Avg	6.71	208	3.3
DRWB09	Min	7.58	1260	4.7
	Max	7.91	1450	6.1
	Avg	7.75	1380	5.5
DRWB10	Min	7.12	585	0.98
	Max	7.56	912	3.8
	Avg	7.38	754	2.6
DRWB12	Min	7.52	507	0.2
	Max	7.73	625	74.8
	Avg	7.65	562	10.62
DRWB13	Min	7.53	676	1.7
	Max	7.78	774	4.1
	Avg	7.63	731	2.4
TSF Monitoring Bores				
TSFMB01A	Min	dry	dry	dry
	Max	dry	dry	dry
	Avg	dry	dry	dry
TSFMB01B	Min	dry	dry	dry
	Max	dry	dry	dry
	Avg	dry	dry	dry
TSFMB02A	Min	6.82	776	5.1
	Max	7.72	1350	8.2
	Avg	7.26	1010	6.4
TSFMB02B	Min	7.64	677	1.2
	Max	11.6	1270	7.7
	Avg	8.25	866	5.1
TSFMB03A	Min	12.2	3600	2.3

Parameters	pH Value		Electrical Conductivity	Dissolved Oxygen
Unit	pH		µg/cm	%sat
Trigger Value	6.5-8.5		>1300	3.21
	Max	12.7	8790	5.6
	Avg	12.5	5730	3.4
TSFMB03B	Min	6.79	1210	0.34
	Max	8.69	2300	5.4
	Avg	7.49	1520	3.1
TSFMB04A	Min	dry	dry	dry
	Max	dry	dry	dry
	Avg	dry	dry	dry
TSFMB04B	Min	7.4	1150	5.0
	Max	8.2	2400	7.6
	Avg	7.7	1621	5.6
TSFMB05A	Min	dry	dry	dry
	Max	dry	dry	dry
	Avg	dry	dry	dry
TSFMB05B	Min	7.42	709	2.02
	Max	9.91	2130	8.4
	Avg	9.0	983	3.8

Note – values above parameter trigger levels are indicated in bold

Groundwater quality remained consistent with historical sampling with long term graphs for key parameters provided in **Appendix A**. Key observations include:

- pH was outside of trigger levels on occasions at TSF monitoring bores TSFMB02B, TSFMB03A, and TSFMB05B;
- EC was elevated above trigger levels on occasions at TSFMB02A, TSFMB03A, TSFMB04B and TSFMB05B;
- Arsenic was elevated above trigger levels on occasions in TSFMB05B;
- Copper was elevated above trigger levels in TSFMB03A, TSFMB03B, TSFMB04B and TSFMB05B; and
- Overall, the TSF monitoring bores TSFMB02A, TSFMB02B, TSFMB03A, TSFMB03B, TSFMB04B and TSFMB05B showed elevated readings in several parameters during the report period.

Readings outside trigger levels were investigated in accordance with the TARP. All monitoring results were comparative to historical sampling data or directly related to seasonal variation, flow conditions or sampling error. No significant quality changes as a result of the mining operations were detected.

7.2.3 Performance Issues and Proposed Improvements

In the interests of transparency, BIM rolled out an online public portal for reporting its groundwater data. The data and reports are available at [Web Reports \(esdat.net\)](http://esdat.net).

No groundwater incidents were recorded during the reporting period, recordings above site trigger levels were observed on multiple occasions. Readings outside trigger levels were investigated under the Water Management Plan TARP, and it was concluded that no significant quality changes because of the mining operations were detected.

During FY24, DGM will be facilitating a review of its groundwater model, surface water balance model and bathymetric surveys of its TSF and process/ raw water ponds. This will better inform DGM's water inventory and water management as its progresses to end-of-mine life in September 2024.

Additionally, Dargues is currently engaging consultancy support to review the health and reliability of its compliance monitoring bore network.

7.3 Surface Water

7.3.1 Environmental Management

Surface water at DGM is managed in accordance with the *Water Management Plan*, which identified that DGM has the potential to impact on water quantity and quality in local drainage lines. As such, a surface water monitoring program has been implemented throughout and following the life of the Project to achieve the following objectives.

- Establish baseline (i.e. existing) patterns and volumes of water flow in local drainage lines;
- Establish baseline (i.e. existing) water quality in local drainage lines;
- Monitor water quantities and flow volumes, primarily baseflow, in local drainage lines during and after mining operations; and
- Monitor water quality in local drainage lines during and after mining operations.

A summary of surface water management activities during the reporting period are summarised below:

- Fuels and oils are stored in purpose-built facilities with appropriate bunding to minimise the potential for accidental discharging of hydrocarbons into the surrounding environment. Diesel is stored in above ground self-bunded tanks from where it is transferred direct to machinery. A licenced waste disposal contractor is engaged to remove and recycle and/or dispose of used oil and grease products at licensed facilities;
- Regular site inspections, specifically after significant rainfall (> 25 mm in 24-hours), are conducted of all surface water structures; and
- Visual inspections of upstream and downstream waterways, in conjunction with DGM's compliance surface water quality monitoring, is carried out to identify any instabilities that have formed as a result of the operations.

DGM undertakes surface water quality monitoring at several locations within the site (refer **Figure 14** and **Figure 15** and **Table 33**). EPL 20095 requires surface water quality sampling be undertaken at seven locations; three in Spring Creek (SW-1, SW-2 and SW-3), and four in Majors Creek (SW-4, SW-5, SW-6 and SW-7).

Table 33 Surface Water Monitoring Points

Monitoring Point (EPA ID)	Frequency	Parameters
SW-1 (EPA ID 53)	Monthly	pH value, Oil and Grease, Total suspended solids, Electrical Conductivity, Bicarbonate Alkalinity as CaCO ₃ , Carbonate Alkalinity as CaCO ₃ , Hydroxide Alkalinity as CaCO ₃ , Total Alkalinity as CaCO ₃ , Chloride, Sulphate, Calcium, Magnesium, Sodium, Potassium, Nitrate as N, Nitrite as N, Total Oxidized Nit. As N, Total Phosphorus as P, Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc
SW-2 (EPA ID 54)		
SW-3 (EPA ID 55)		
SW-4 (EPA ID 56)		
SW-5 (EPA ID 57)		
SW-6 (EPA ID 58)		
SW-7 (EPA ID 59)		

Figure 11 Surface Water Monitoring Locations

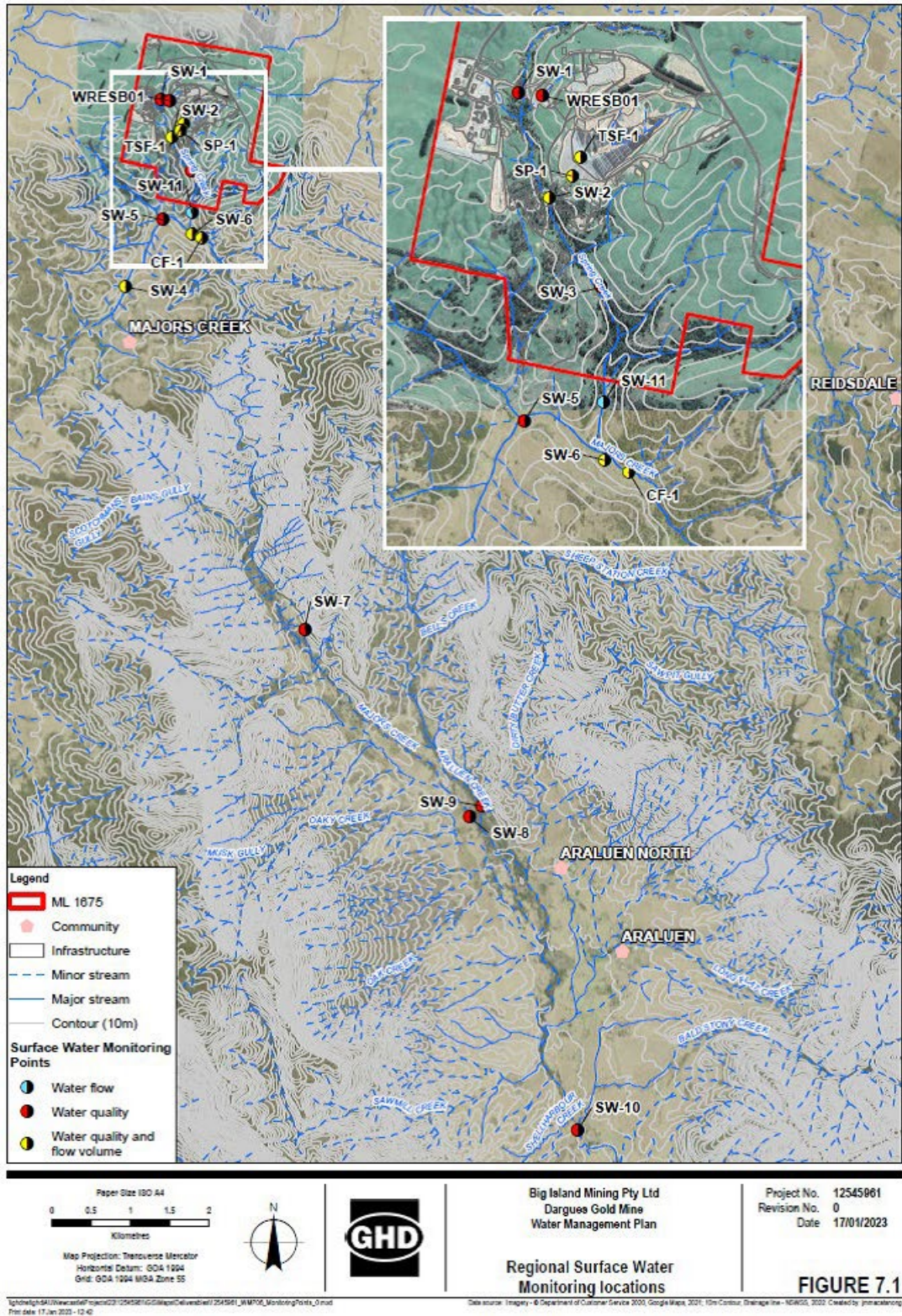
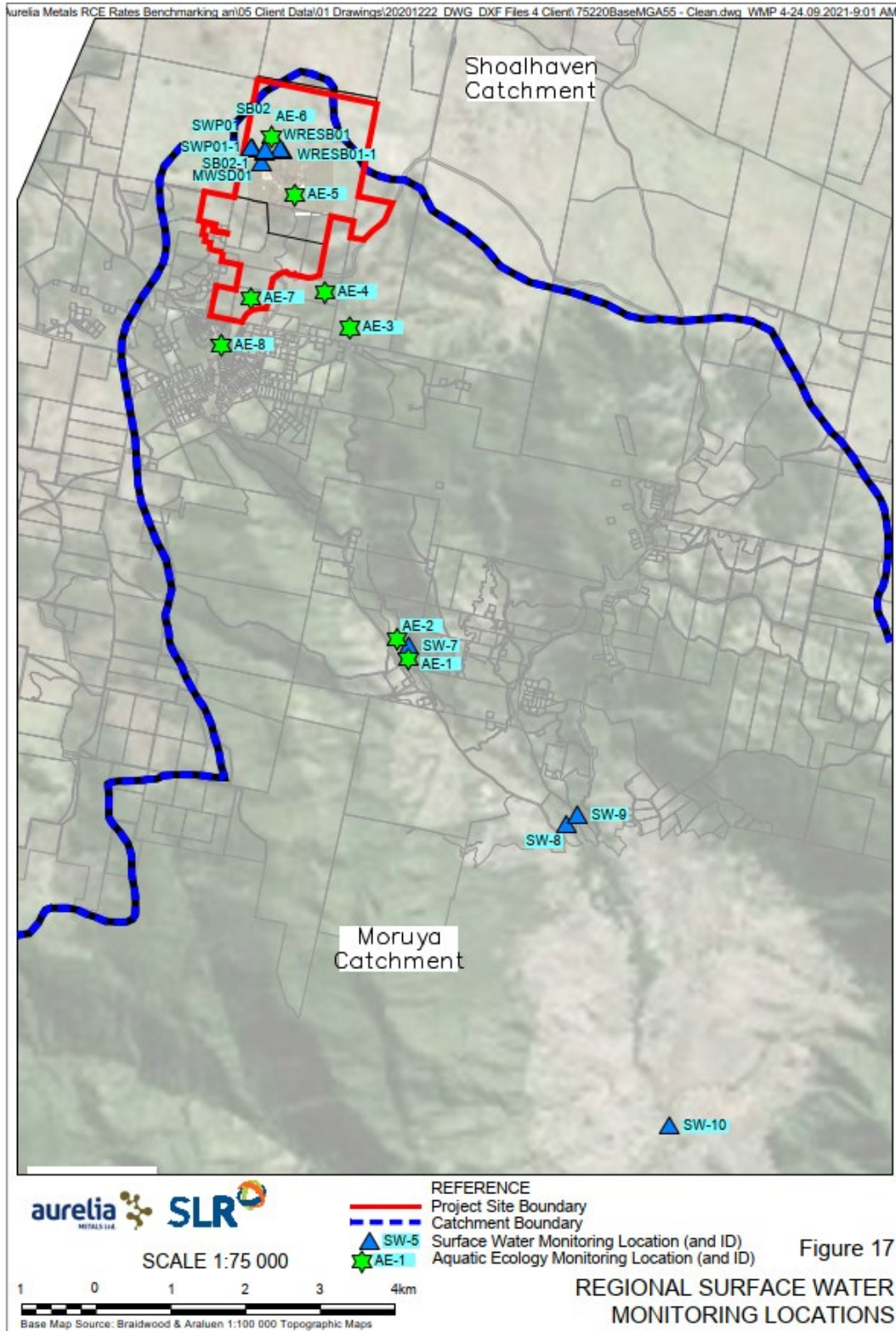


Figure 12 Regional Surface Water Monitoring Locations



7.3.1 Environmental Monitoring Results

Water Quality

Summarised results for pH, Total Suspended Solids (TSS) and Electrical Conductivity (EC) are outlined below for the EPA NSW licenced monitoring locations of SW-1 to SW-7.

Table 34 Surface Water Quality Results

Parameter	pH value		Total suspended solids (TSS)	Electrical Conductivity (EC)
Unit	pH		mg/L	µS/cm
Trigger Value	6.5-8.5		>50	>450
SW-1 (EPA ID 53)	Min	6.8	8	118
	Max	8.1	1150	867
	Mean	7.5	208	458
SW-2 (EPA ID 54)	Min	7.5	3	376
	Max	8.2	191	1080
	Mean	7.9	37.6	739
SW-3 (EPA ID 55)	Min	7.5	4	370
	Max	8.2	90	1100
	Mean	8	37.5	732
SW-4 (EPA ID 56)	Min	7.4	4	184
	Max	8.1	24	283
	Mean	7.7	120	203
SW-5 (EPA ID 57)	Min	7.4	2	123
	Max	7.9	56	396
	Mean	7.7	13	277
SW-6 (EPA ID 58)	Min	7.3	2	89
	Max	8	21	544
	Mean	7.7	7	347
SW-7 (EPA ID 59)	Min	7.7	<2	366
	Max	8.1	22	608
	Mean	8.1	7	469

Note – values above parameter trigger levels are indicated in bold

Surface water pH levels across all sites were neutral to slightly alkaline, ranging from 6.8 to 8.2, with an average pH of 7.7 which is similar to previous years. TSS results ranged from 2 mg/L to 1150 mg/L, with an average of 100.3 mg/L which is greater than the 26.6mg/L average for 2021/ 22 reporting period. This was due to an elevated reading taken from SW-1 and most likely a result of turbid water being sampled. EC results ranged from 89 µS/cm to 1100 µS/cm, with an average of 463 µS/cm which is greater than the average of 314 µS/cm reported in 2021/ 22, and similar to TSS, where isolated elevated readings were taken from SW-2 and SW-3.

Readings outside trigger levels were investigated in accordance with the Water Management Plan TARP and found to remain consistent with historical monitoring and elevated levels were primarily a result of seasonal or localised natural influences following rainfall events. All readings

returned to baseline levels soon after these rainfall events and no subsequent environmental harm was observed. No trend or significant water quality changes because of the mining operations were detected.

7.3.1 Performance issues and improvements

The reporting period presented some challenges due to accessibility, (due to rainfall events), which impacted occasional monitoring.

In October 2022, DGM self-reported to the DPE its harvestable rights capacity, due to potentially exceeding its entitlement under the *Water Management Act 2000*. As part of its investigation, BIM commissioned a review of water use and security at the DGM, including harvestable rights. This review was self-instigated and not triggered by any external factors, regulatory investigation, or community complaint. The subsequently findings were submitted to the DPE for their consideration, who in response, (and due to recent legislative changes) decided not to investigate the matter further as there was no evidence DGM was operating outside of their entitlement.

7.3.2 Compensatory Flow

During the reporting period, no compensatory flow was discharged to Majors Creek or was required.

8. Rehabilitation During the Reporting Period

8.1 Rehabilitation Reforms

The NSW Resources Regulator recently released a new set of compliance and reporting requirements for rehabilitation (known as the Rehab reforms) through the development of a new regulation under the Mining Act 1992. The Mining Amendment (Standard Conditions of Mining Leases – Rehabilitation) Regulation 2021 and the Form and Way documents set out the mandatory requirements under the new conditions. The Rehab Reforms set clear, achievable requirements. During the reporting period BIM prepared the documentation and plans required to comply with the Rehab reforms. The Rehabilitation Management Plan was prepared as part of this reform process replacing the previous Mining Operations Plan which expired, July 1 2022. The Rehabilitation management plan together with the Forward program are available on the BIM website [Rehabilitation Management \(aureliametals.com.au\)](http://aureliametals.com.au).

8.2 Planned Rehabilitation Activities

There are rehabilitation activities planned for the next reporting period. DGM's mine footprint is now at its maximum extent and being fully utilised. Over the last reporting period, DGM completed rehabilitation of some legacy exploration drill sites, and is planning to complete rehabilitation of further exploration drill sites.

8.3 Rehabilitation Trials and Research

During the reporting period no rehabilitation trials or research were conducted within the Mining Lease Area.

During the last report period, the below treatment plans were developed and in the process of being implemented:

- Develop a rehabilitation procedure;
- Develop a quality assurance signoff process for each stage of rehabilitation;
- Prepare a soils and material balance;
- Develop a historical mining register for all mining impacts; and
- Develop a historical mining register for impacts on the lease.

8.4 Rehabilitation schedule

Dargues Gold Mine will undertake rehabilitation as soon as reasonably practical once areas of disturbance are made available for rehabilitation activities. This will be dependent on factors such as availability of land for rehabilitation, current and future use of infrastructure and disturbance areas. Rehabilitation works for the forecast period is limited to minor rehabilitation works of exploration disturbance areas and field tracks. Table 35 outlines the three yearly forecast cumulative disturbance and rehabilitation progression. Table 36 provides a breakdown of the areas to be treated over the course of 2023/ 24.

Table 35 Three-yearly forecast cumulative disturbance and rehabilitation progression

Forecast	Unit	Year 1	Year 2	Year 3
Total surface disturbance footprint	ha	68.25	68.25	68.25
Total active disturbance	ha	68.25	68.25	68.25
Land prepared for rehabilitation	ha	1.08	0.18	0.18

Forecast	Unit	Year 1	Year 2	Year 3
Area proposed for active rehabilitation	ha	0.18	1.08	0.18
Total new active disturbance area	ha	0	0	0

Table 36 Area Treated

	Area Treated (ha)		Comment/Control Strategies/Treatment Details
	Report Period	Next Period	
Additional Erosion Control Works	0	0	All erosion controls for operation of the site are now in place.
Re-Covering	0	0	No further re-covering work is planned for the next reporting period.
Treatment/Management	200	200	Grazing by cattle to control grass and potential fire risk.
Re-Seeding/Replanting	0	0	No re-seeding or planting is planned for the next reporting period.
Adversely Affected by Weeds	40	40	The area treated and planned to be treated is subject to maintenance spraying for weeds including Broome and Blackberry.
Feral Animal Control	27	0	27 feral sheep were mustered and removed from site in May 2023. DGM is looking to engage a contractor to implement a feral animal control program in the next reporting period.

9. Community Relations

9.1 Complaints

BIM operates a 24-hour, 7 day a week, information line (1800 732 002) and email address (dgm.community@aureliametals.com.au) which may be used by the public or other stakeholders to make enquires in relation to DGM or to lodge a complaint.

BIM has implemented a complaint handling and response management system, with the principal aim being, to respond promptly and comprehensively to each complaint received by BIM.

During the reporting period, a total of 43 complaints were received by the mine. **Table 37** shows most complaints were related to noise (98%), with traffic making up the remaining complaints. The number of complaints reported represents a significant decrease compared to the previous reporting periods where 116 complaints were received.

Table 37 Nature of Complaints Received during Reporting Period

Pollution Complaint Category	Complaints
Air	0
Water	0
Noise	41
Waste	0
Traffic	0
Other	2
Total complaints recorded by the licensee during the reporting period	43

9.2 Community Consultative Committee

Four meetings of the Dargues' Community Consultative Committee (CCC) were held during the reporting period, namely:

- 19 September 2022
- 7 December 2022
- 8 March 2023
- 5 June 2023

Minutes from each of the DRCCC meetings are presented on the Aurelia website (<https://aureliametals.com/dargues-mines-compliance-and-regulatory-information/>).

9.3 Community Meetings

Three community information meetings were held during the reporting period. They were held on 21 June 2023, 28 June 2023, and 10 July 2023 to discuss DGM's life-of-mine. The primary objective of the meetings was to keep interested members of the community informed of DGM's operations and planned future activities.

9.4 Community Grants Program

During the reporting period, a Community Grants Program was implemented by BIM. The Community Grants Program aims to assist community groups to undertake a wide range of activities that contribute to the social, educational, recreational, environmental and community development aspects of the local communities. Grants of up to \$3,000 are available to eligible applicants. The aim of these grants is to

support organisations that provide specific sustainable outcomes which have long lasting benefit(s) to the wider community.

During the reporting period, Grants were awarded to the following organisations:

- Braidwood Girl Guides;
- Braidwood Preschool;
- Major Creek Recreation Reserve Trust;
- Braidwood Swim Club;
- Braidwood Men’s Shed;
- 1st Braidwood Scout Group;
- Krawarree Rural Fire Brigade; and
- Braidwood Servicemen Club.

9.5 Other Community Support

DGM also provided the following community support:

- Braidwood and District Education Fund Scholarship;
- Braidwood “Airing of the Quilts Festival” sponsorship;
- Braidwood and District Lions Young Writer Festival sponsorship;
- Volunteer support for Majors Creek Festival;
- Rental assistance for Doctor (Braidwood medical centre);
- Dargues Gold Mine School Environmental Program; and
- Partnership with WIRES & other environmental groups to deliver additional environmental education awareness material in the community.

9.6 Other Community Consultation

Local community members continue to be consulted through Dargues’ Facebook and LinkedIn profile.

Further, Aurelia operates and regularly reviews its company website. This platform provides public viewing regarding the Company’s operational, environmental and cash flow reports, environmental monitoring data, management plans and independent audits.

10. Independent Audit

An Independent Environment Audit (IEA) was not conducted or required during the reporting period. The next audit is due in the FY24 reporting period, with an expected completion in September 2023. This audit will be in accordance with Schedule 5, Condition 8 of the Project Approval.

The IEA will assess the environmental performance of the site against the conditions of the Project Approval, EPL, ML and EPBC approvals, as well as the adequacy of management strategies and plans that are currently in place.

Consultation with stakeholder agencies will be undertaken as part of the IEA with responses expected from DPE, DPE Water, NSW Resources Regulator, Dargues Gold Mine CCC and Queanbeyan-Palerang Council.

11. Incidents and Non-Compliances During the Reporting Period

A full summary of incidents and non-compliances have been provided in **Table 38** below.

BIM has communicated with the community via Facebook, CCC meetings, the Community Information sessions, including via Aurelia's Website.

(<https://aureliametals.com/dargues-mines-compliance-and-regulatory-information/>).

Table 38 Summary of Incidents and Non-Compliances during the Annual Review Period

Relevant Approval	Condition #	Condition Description	Comment	Relevant Section of Annual Review
PA10_0054 MOD5	Schedule 3, Condition 41(b)	The Applicant must ensure that: <i>the dispatch of concentrate from the site is limited to between the hours of 7am to 10pm Monday to Saturday and 8am to 10pm Sundays and Public Holidays.</i>	2 x Concentrate trucks departed site on the evening of 30 June 2022, (2207hrs) and 1 August 2022, (2234hrs) respectively.	Section 4.7
PA 10_0054 MOD5	Schedule 3, Condition 41(c)	The Proponent shall ensure that: <i>all heavy vehicle movements to or from the site are prohibited between the hours of 7am – 8:30am and 3pm – 5pm on school days</i>	A Boral cement truck was remotely “buzzed” out (via the boom gates) off-site the afternoon of the 28 April at approximately 1544hrs.	Section 4.7
PA 10_0054 MOD5	Schedule 3, Condition 41(c)	The Proponent shall ensure that: <i>all heavy vehicle movements to or from the site are prohibited between the hours of 7am – 8:30am and 3pm – 5pm on school days</i>	A Boral cement truck was swiped out, (via the boom gates) by another contractor, at approximately 1525hrs on the 26 June 2023, who was entering the site.	Section 4.7
EPL 20095	Condition M2.2	Air Monitoring requirements shall be undertaken monthly.	Dust sampling occurred continuously at DD! Between 30/07/2022 and 30/08/2022. The sample vessel was removed on 30/08/2022 in recommended freight packaging. On 09/09/2022 ALS notified site’s Environmental Technician that the vessel had been damaged during transit and its contents lost, thus rendering the sample unsuitable for analysis.	Section 6.6.2

12. Activities To Be Completed During the Next Reporting Period

During the next reporting period, BIM will be in progressing to operational reduction to eventual cease of production scheduled to occur in September/ October 2023. Consequently, DGM will be developing and implementing its rehabilitation and mine closure commitments.

Activities proposed for the next reporting period include:

- Development of DGM's Mine Closure Plan;
- Tailing Storage Dam capping design and erosivity modelling;
- Growth medium testing to support rehabilitation objectives; and
- Implementation of treatment plans to support rehabilitation management.

13. References

Big Island Mining Pty Ltd (BIML) (2021) *Pollution Incident Response Plan (PIRMP)*

Diversified Minerals Pty Ltd (DMPL) (2020) *Noise Management Plan (NMP)*

Diversified Minerals Pty Ltd (DMPL) (2020) *Water Management Plan (WMP)*

Scatsabout (2022) *Terrestrial Flora and Fauna Monitoring Surveys*

University of Canberra (2022) *Aquatic Ecological Monitoring (Spring)*

University of Canberra (2023) *Aquatic Ecological Monitoring (Autumn)*

R.W. Corkery & Co. Pty Limited (Corkery) (2010) *Environmental Assessment (EA)*

DGM (2022) *Rehabilitation Management Plan (RMP)*

DGM (2022) *Aboriginal Heritage Management Plan (AHMP)*

DGM (2022) *Air Quality and Greenhouse Gas Management Plan*

R.W. Corkery & Co. Pty Limited (Corkery) (2019b) *Biodiversity Management Plan (BMP)*

DGM (2022) *Blast Management Plan (BMP)*

DGM (2022) *Bushfire Management Plan (BMP)*

DGM (2022) *Traffic Management Plan (BMP)*

DGM (2023) *Waste Management Plan (BMP)*

Appendix A – Water Quality Monitoring Results

Table A1 - Groundwater Quality Monitoring

Monitoring Location	Parameter	pH value	EC	Dissolved Oxygen	RED OX	Carbonate Alkalinity as CaCO3	T. Alkalinity as CaCO3	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium	Nitrate as N	Total Oxidized Nit. as N	Total Phosphorus as P	Aluminium	Arsenic	Cadmium	Chromium	Copper	Iron	Lead	Mercury	Nickel	Zinc
	Unit	pH	uS/cm	%	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	Trigger Value	6.5-8.5	>1300	3.21		>0.1	>200	>300	>110	>110	>50	>60	>1.8	>3.2	>3.2			>0.002	>0.0005	>0.001	>0.0007		>0.0012	>0.0002	>0.003	>0.057
DRWB06	Min	6.69	319	2.32	206	>0.1	67	9.5	60.3	33.7	9.34	11.9	0.5	<0.05	0.24	0.02	<0.02	<0.001	<0.0005	<0.01	0.001	<0.01	<0.0002	<0.0001	<0.0010	<0.005
	Max	7.13	380	3.38	503	>0.1	140	12.2	83	44.6	12.4	15.5	0.6	0.095	0.66	0.09	0.01	<0.001	<0.0005	<0.01	0.01	2.33	<0.0002	<0.0001	<0.0010	0.022
	Avg	6.88	344.8	5.9	348.2	>0.1	99	10.36	73.6	38.7	11.07	14.26	0.5	0.14	0.41	0.062	0.01	<0.001	<0.0005	<0.01	0.0051	1.17	<0.0002	<0.0001	<0.0010	0.046
DRWB07	Min	7.06	309	0.07	226	>0.1	104	17.4	7.8	24.5	9.06	20.9	1.025	0.58	0.31	0.06	<0.02	<0.001	<0.00005	<0.00005	<0.001	<0.01	<0.0002	<0.0001	<0.0010	<0.005
	Max	7.11	327	4.67	461	>0.1	141	28.9	16.5	30.7	12.5	24.7	1.1	1.28	0.64	0.14	0.02	<0.001	<0.00005	<0.00005	0.001	2.33	<0.0002	<0.0001	<0.0010	0.046
	Avg	7	319.5	2.44	324.25	>0.1	122.1	23.85	10.85	28	10.91	22.67	1	0.85	0.48	0.102	0.02	<0.001	<0.00005	<0.00005	0.001	1.17	<0.0002	<0.0001	<0.0010	0.022
DRWB08	Min	6.65	208.4	0.04	246	>0.1	44	12.3	5.2	15	3.9	10.4	0.7	<0.05	0.07	0.02	<0.02	<0.001	<0.00005	<0.01	<0.001	<0.01	<0.0002	<0.0001	0.0034	<0.005
	Max	6.86	231	4.8	337	>0.1	84	26.2	6.2	24.5	5.71	13.6	0.8	<0.05	0.18	0.58	0.01	<0.001	0.00007	<0.01	0.001	0.11	<0.0002	<0.0001	0.0069	0.0205
	Avg	6.71	161	3.31	291.2	>0.1	60.8	21.26	5.8	21.12	5.09	12.18	0.76	<0.05	0.132	0.172	0.01	<0.001	0.00007	<0.01	0.001	0.033	<0.0002	<0.0001	0.0048	0.039
DRWB09	Min	7.58	1260	4.66	232	>0.1	164	296	38.4	154	22.9	61.7	1.2	0.98	1.09	0.03	0.02	<0.001	<0.00005	<0.01	<0.001	<0.01	<0.0002	<0.0001	<0.0010	0.047
	Max	7.91	1450	6.13	290	>0.1	196	312	47.8	172	40.3	76.7	2	5.61	6.07	0.05	0.04	<0.001	0.00007	<0.01	<0.001	<0.01	<0.0002	<0.0001	0.0024	0.147
	Avg	7.74	1380	5.53	261	>0.1	181	304.3	41.9	161.3	33.9	68	1.7	4.06	4.31	0.04	0.033	<0.001	0.00007	<0.01	<0.001	<0.01	<0.0002	<0.0001	0.0024	0.083
DRWB10	Min	7.12	585	0.98	190	>0.1	176	74.3	26.6	73.8	12.4	28.7	1.3	<0.05	0.14	0.03	0.03	<0.001	<0.00005	<0.01	<0.001	0.01	<0.0002	<0.0001	<0.001	<0.005
	Max	7.56	912	3.76	329	>0.1	241	126	50.6	104.34	24.2	37.2	4.2	<0.05	2.35	0.37	0.11	0.001	<0.00005	<0.01	<0.001	2.06	<0.0002	0.0002	0.0022	0.02
	Avg	7.38	754	2.61	281	>0.1	219.4	85.08	37.34	131	18.4	33.24	2.72	<0.05	1.12	0.12	0.05	0.001	<0.00005	<0.01	<0.001	0.58	<0.0002	0.0001	0.00175	0.013
DRWB12	Min	7.52	507	0.2	207	>0.1	135	36.6	21.9	58.4	12	24.6	1.3	0.09	<0.05	<0.01	<0.02	<0.001	<0.00005	<0.01	<0.001	<0.01	<0.0002	<0.0001	<0.0010	<0.005
	Max	7.73	625	74.8	331	>0.1	171	65.6	61.1	76.2	16.1	44.8	1.5	0.57	0.59	0.19	0.03	<0.001	0.00011	<0.01	<0.001	0.39	<0.0002	<0.0001	0.0056	0.039
	Avg	7.65	562	10.62	262.2	>0.1	151.2	48.74	45	68.9	14.4	31.4	1.46	0.23	0.36	0.06	0.023	<0.001	0.00011	<0.01	<0.001	0.39	<0.0002	<0.0001	0.0056	0.021
DRWB13	Min	7.53	676	1.74	140	>0.1	189	89.9	16.4	88.3	19.3	23.8	1.7	<0.05	<0.05	<0.01	<0.02	<0.001	<0.00005	<0.01	<0.001	<0.01	<0.0002	<0.0001	<0.0010	<0.005
	Max	7.78	774	4.09	335	>0.1	225	96.5	27.2	94.6	21.7	33.2	1.9	0.05	<0.05	0.07	0.03	<0.001	<0.00005	<0.01	0.002	1.3	<0.0002	<0.0001	<0.0010	0.006
	Avg	7.63	731	2.43	256	>0.1	204	94.34	22.7	90.14	20.1	30	1.8	0.05	<0.05	0.03	0.03	<0.001	<0.00005	<0.01	0.002	0.83	<0.0002	<0.0001	<0.0010	0.006
Tailings Storage Facility Monitoring Bores																										
TSFMB02A	Min	6.82	776	5.06	198	<0.1	127	182	28	82.8	28.8	41.5	1.1	4.23	4.48	0.04	0.03	<0.001	<0.00005	<0.01	<0.001	<0.01	<0.0002	<0.0001	<0.0010	0.005
	Max	7.72	1350	8.21	350	<0.1	203	191	32.8	96.8	34.7	55.1	2	5.34	5.34	0.15	0.01	<0.001	<0.00005	<0.01	<0.001	0.01	<0.0002	<0.0001	<0.0010	0.015
	Avg	7.25	1010	6.36	273	<0.1	140	187	31.4	89.6	31.5	50.1	1.4	4.67	4.87	0.065	0.02	<0.001	<0.00005	<0.01	<0.001	0.01	<0.0002	<0.0001	<0.0010	0.011
TSFMB02B	Min	7.64	677	1.16	142	<0.1	38	111	19.4	19.4	<0.10	142	2.7	2.76	2.84	<0.01	<0.01	<0.001	<0.00005	<0.01	<0.001	<0.01	<0.0002	<0.0001	<0.0010	<0.005
	Max	11.6	1270	7.66	481	26.5	525	201	36.3	36.3	21.9	481	7.6	3.35	3.5	0.32	0.06	<0.001	<0.00005	0.01	<0.001	<0.01	<0.0002	<0.0001	<0.0010	0.049
	Avg	8.25	866.5	5.13	245.5	10.35	70.25	174.5	34.1	34.1	18.28	245	3.17	3.05	3.2	0.0335	0.02	<0.001	<0.00005	0.01	<0.001	<0.01	<0.0002	<0.0001	<0.0010	0.015
TSFMB03A	Min	12.2	3600	2.33	12.7	<0.1	164	106	3.2	574	<0.10	47.6	12.2	3.98	5.07	0.01	0.33	<0.001	<0.00005	<0.01	<0.001	0.02	<0.0002	<0.0001	0.009	<0.005
	Max	12.7	8790	5.6	210	316	1790	126	10.9	690	<0.10	64.6	15.9	8.5	10.1	0.08	0.48	<0.003	0.00006	0.02	0.005	0.06	0.0009	<0.0003	0.011	0.032
	Avg	12.52	5730	3.41	57	109	1386	121	5	674.5	<0.10	55.2	13.5	5.86	7.24	0.033	0.38	<0.002	0.00006	0.02	0.002	0.04	0.0005	<0.0002	0.01	0.016
TSFMB03B	Min	6.79	1210	0.34	152	<0.1	164	141	114	143	44.7	47.9	1.2	3.98	14.9	0.02	0.02	<0.001	<0.00005	<0.01	<0.001	<0.01	<0.0002	<0.0001	<0.0010	<0.005
	Max	8.69	2300	5.37	369	42	1790	229	420	208	67.8	61.4	1.7	8.5	32.1	0.17	0.04	<0.001	<0.00005	<0.01	0.012	<0.01	0.0007	<0.0001	<0.0010	0.032
	Avg	7.49	1520	3.10	208	28.25	1386	202	202	163	53.2	56.8	1.43	5.86	20.3	0.042	0.03	<0.001	<0.00005	<0.01	0.005	<0.01	0.0007	<0.0001	<0.0010	0.016
TSFMB04B	Min	7.4	1150	4.98	216	<0.1	156	179	67.1	152	19.1	88.2	4.2	1.76	2.26	0.02	0.02	<0.001	0.00005	<0.01	0.002	<0.01	<0.0002	<0.0001	<0.0010	0.016
	Max	8.2	2400	7.65	387	<0.1	209	272	396	254	26	113	6.3	6.44	6.5	0.32	0.05	<0.001	<0.00005	<0.01	0.004	0.02	<0.0002	<0.0001	0.0012	0.058
	Avg	7.3	1621	5.6	243	<0.1	183	246	194.5	188	22.3	102	5.3	4.1	4.31	0.11	0.034	<0.001	<0.00005	<0.01	0.003	0.02	<0.0002	<0.0001	0.0011	0.028
TSFMB05B	Min	7.42	709	2.02	137	<0.1	20	154	30.8	35.7	8.37	62.7	3.8	0.09	1.07	<0.01	<0.01	<0.001	<0.00005	<0.01	<0.001	<0.01	<0.0002	<0.0001	<0.0010	<0.005

Table A2 - Surface Water Quality Monitoring

Monitoring Location	Parameter	pH Value	Oil & Grease	TSS	EC	Redox	Carbonate Alkalinity as CaCO3	Total Alkalinity as CaCO3	Iron	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium	Nitrate as N	Total Oxidised Nit. as N	Total Phosphorus as P	Aluminium	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel
	Unit	pH	ug/ L	mg/ L	uS/ cm	mV	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L	mg/ L
	Trigger Value	6.5 - 8.5	>1000	>50	>450		>1.0	>85		>75	>25	>35	>15	>25	>2.5	>0.65		>0.20		>0.013	>0.0016	>0.01	>0.0099	>0.063	>0.0006	>0.078
SW-1 (53)	Min	6.85	<1,000	8	118	184	<0.1	40	0.08	9.5	9.2	9.11	2.62	8.2	0.6	0.1	1.22	0.02	<0.02	<0.001	<0.00005	<0.01	<0.001	<0.0002	<0.0001	<0.0010
	Max	8.11	<1,000	1150	867	546	<0.1	168	3.67	52.1	82.4	46	11.6	76.7	16.2	2.38	11.2	1.06	1.08	0.001	0.00007	<0.01	0.003	0.0006	<0.0001	<0.0010
	Mean	7.55	<1,000	208	457.5	300	<0.1	112.1	0.82	33	38	32.5	9.1	36.5	5.73	0.8	3.06	0.24	0.3	0.001	0.000063	<0.01	0.0017	0.00055	<0.0001	<0.0010
SW-2 (54)	Min	7.48	<1,000	<2	376	193	<0.1	41	0.04	12.3	27.6	50	5.05	17.8	1	2.52	4.3	<0.01	<0.02	<0.001	<0.00005	<0.01	<0.001	<0.0002	<0.0001	<0.0010
	Max	8.28	<1,000	85	1080	520	1.8	222	0.45	87.4	232	125	20.8	58.9	11.4	27.1	27.9	0.12	0.39	<0.001	<0.00005	<0.01	0.003	0.0004	<0.0001	<0.0010
	Mean	8	<1,000	24.5	738.6	305	1.8	114	0.19	57	90	75.5	15.1	40.6	4.34	10.6	10.92	0.042	0.01	<0.001	<0.00005	<0.01	0.002	0.00035	<0.0001	<0.0010
SW-3 (55)	Min	7.53	<1,000	4	370	184	<0.1	44	0.04	12.1	29.5	53.4	5.34	17.2	1.1	2.1	2.27	<0.01	<0.02	<0.001	<0.00005	<0.01	<0.001	<0.0002	<0.0001	<0.0010
	Max	8.29	<1,000	90	110	442	3.7	220	0.47	90.6	211	124	18.5	64.1	10.7	25.4	26.3	0.12	0.38	<0.001	<0.00005	<0.01	0.003	0.0003	<0.0001	<0.0010
	Mean	8	<1,000	37.5	732.1	303.1	2.4	113	0.15	58	87.5	75.6	15	38.9	4.1	9.6	9.89	0.045	0.09	<0.001	<0.00005	<0.01	0.002	0.00035	<0.0001	<0.0010
SW-4 (56)	Min	7.37	<1,000	4	184	179	<0.1	40	0.36	10.8	3.8	8.1	3.16	11.4	0.4	<0.05	0.28	<0.01	<0.02	<0.001	<0.00005	<0.01	<0.001	<0.0002	<0.0001	<0.0010
	Max	8.07	<1,000	120	283	497	<0.1	81	1.34	24	16.4	16.1	7.2	23	7.1	2.84	4.51	0.08	0.78	0.001	<0.00005	<0.01	0.002	0.0007	<0.0001	<0.0010
	Mean	7.74	<1,000	24	203.2	303.1	<0.1	61	0.725	17.4	6.5	12	5.4	18.1	2	0.7	1.14	0.034	0.248	0.001	<0.00005	<0.01	0.002	0.0005	<0.0001	<0.0010
SW-5 (57)	Min	7.36	<1,000	2	123	197	<0.1	28	0.36	14	<0.4	6.73	2.44	10.6	0.9	0.1	0.33	0.01	<0.02	<0.001	<0.00005	<0.01	<0.001	<0.0002	<0.0001	<0.0010
	Max	7.95	<1,000	56	396	516	<0.1	118	1.62	28.3	21.3	22.1	8.8	42	4.8	9.27	10.7	0.07	1.02	0.001	0.00006	<0.01	0.002	0.0008	<0.0001	<0.0010
	Mean	7.7	<1,000	13.4	277.3	317.4	<0.1	76	0.74	22	12.2	17.1	6.8	25	4.3	1.54	2.14	0.03	0.20	0.001	0.00006	<0.01	0.0012	0.0004	<0.0001	<0.0010
SW-6 (58)	Min	7.34	<1,000	2	89	207	<0.1	25	0.3	9.2	<0.4	4.77	2.14	7.4	1.7	0.46	0.78	<0.01	<0.02	<0.001	<0.00005	<0.01	<0.001	<0.0002	<0.0001	<0.0010
	Max	8.04	<1,000	21	544	511	<0.1	97	1.23	40.6	27.2	39.5	10.8	25.24	7.3	5.59	5.89	0.04	1.2	<0.001	0.00005	<0.01	0.002	0.0008	<0.0001	<0.0010
	Mean	7.73	<1,000	7.3	347.9	318	<0.1	73	0.61	28.3	20.2	27.35	8.72	30.9	3.31	1.87	2.42	0.021	0.189	<0.001	0.00005	<0.01	0.001	0.00055	<0.0001	<0.0010
SW-7 (59)	Min	7.71	<1,000	<2	366		<0.1	79	0.05	35.4	24.7	29.9	9.22	19.7	1.9	0.26	0.46	<0.01	<0.02	<0.001	<0.00005	<0.01	<0.001	<0.0002	<0.0001	<0.0010
	Max	8.18	<1,000	22	608		<0.1	120	0.66	48	36.7	44.8	15.3	31.7	5.6	4.09	4.22	0.04	0.17	<0.001	<0.00005	<0.01	0.001	<0.0002	<0.0001	<0.0010
	Mean	8.06	<1,000	6.9	469		<0.1	100	0.17	39.5	30	38.6	13.2	25.2	2.8	1.1	1.36	0.02	0.04	<0.001	<0.00005	<0.01	0.001	<0.0002	<0.0001	<0.0010

Note: values above parameter trigger levels are indicated in bold