Rix's Creek Mine

YEM 2024 Annual Review

For period 1 April 2023 - 31 March 2024.

THE Bloomfield GROUP

WE CARE. WE DELIVER.

Clean Water Dam No.2 Rix's Creek South Operation.

Table 1. Annual Review title block

Name of Operation	**Rix's Creek Mine**
Name of operator	**Bloomfield Collieries Pty Ltd**
Development consent / project approval # **Rixs Creek North** **Rixs Creek South**	 **PA 08_0102** **SSD6300 & DA49/94**
Name of holder of development consent / project approvals	**Bloomfield Collieries Pty Ltd**
Mining Lease #	**CL357, ML1630, ML1648, ML1649, ML1650, ML1651,CL352, ML1432, ML1725 & ML 1803**
	Bloomfield Collieries Pty Ltd
Water License #	**WAL41500, WAL41555, WAL40777, 20BL170864**
Name of holder of water license	**Bloomfield Collieries Pty Ltd**
Annual Review start date	**1/4/2023**
Annual Review end date	**31/03/2024**
I, Chris Quinn, certify that this audit report is a true and accurate record of the compliance status of Rix's Creek Mine for the period 1/4/2023 – 31/03/2024 and that I am authorised to make this statement on behalf of Bloomfield Collieries Pty Ltd.	
Name of authorised reporting officer	**Chris Quinn**
Title of authorised reporting officer	**Environmental Superintendent**
Signature of authorised reporting officer	
Date	**28/6/2024**

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List of Abbreviations

AHD	Australian Height Datum
AR	Annual Review
BCL	Bloomfield Collieries Pty Limited
BCT	Biodiversity Conservation Trust
BOA's	Biodiversity Offset Areas
BSA	Biodiversity Stewardship Agreement
AMA	Ancillary Mining Area
bcm	Bank cubic metre
CHPP	Coal Handling and Preparation Plant
CCC	Community Consultative Committee
CL	Coal Lease
DA	Development Application
dBL	Noise decibels (linear)
dBA	Noise decibels (A-weighted)
DDG	Depositional Dust Gauge
DPE	Department of Planning and Environment (Now DPHI)
DPIE	Department of Planning, Industry and Environment (Now DPHI)
DPHI	Department of Planning Housing and Infrastructure
EA	Environmental Assessment
EC	Electrical Conductivity
EIS	Environmental Impact Statement
EL	Exploration Licence
EMP	Environmental Management Plan
EMS	Enviromental Management System
EPA	Environment Protection Authority
EPL	Environment Protection Licence
GCP	Ground Core Piezometer
GDE	Ground Dependent Ecosystems
GHG	Greenhouse Gas
g/m^2/mth	Grams per square metre per month
GRAWSS	Greater Ravensworth Area Water Sharing Scheme
HVAS	High Volume Air Sampler
HRSTS	Hunter River Salinity Trading Scheme
IBC	Intermediate Bulk Container
IEA	Independent Environmental Audit
ISO	International Standard
l/s	Litres per second
LHPA	Livestock Health and Pest Association
LGA	Local Government Area
MBGL	Meters Below Ground Level
MCM	Monthly Communication Meetings
MEG	Mining, Exploration and Geoscience.
MIC	Maximum Instantaneous Charge
mm/s	Millimetres per second
MOD	Modification
MOP	Mining Operations Plan
MI	Megalitre
ML	Mining Lease
Mt	Million tonnes
MU's	Management Units
NAG	Noise Assessment Group
NRAR	Natural Resources Access Regulator
OC	Open Cut
OLC	Over Land Conveyor
PA	Project Approval
PIRMP	Pollution Incident Response Management Plan
PM_{10}	Particulate matter (dust) with a diameter of less than 10 microns
PPM	Parts Per Million
PPV	Peak Particle Velocity
RCS	Rix's Creek South
RCN	Rixs Creek North
RCM	Rix's Creek Mine
RMP	Rehabilitation Management Plan
ROM	Run-of-mine
RR	Resources Regulator
SEPP	State Environmental Planning Policy

SSD	State Significant Development
STP	Sewerage Treatment Plant
TBT	Toolbox Talk
TBG	The Bloomfield Group
TEOM	Tapered Element Oscillating Microbalance
TPH	Total Petroleum Hydrocarbons
TSP	Total Suspended Particulates
VWP	Vibrating Wire Piezometer
WMP	Water Management Plan
WSP	Water Sharing Plan
µS/cm	Micro Siemens per centimetre
$\mu g/m^3$	Micrograms per cubic metre
YEM	Year ending March

SECTION 1 STATEMENT OF COMPLIANCE

Table 2. Summary Statement of Compliance for Major Approvals

Were all conditions of the relevant approval(s) complied with?	
SSD 6300 Mod 1	NO
DC # DA 49/94 Mod 10	NO
PA 08_0102 Mod 9	NO
EPL3391	NO
ML # 1432, CL352, ML1803	NO
ML # CL 357, ML 1630, ML 1648-1651, ML 1725	NO

The non-compliances identified with PA 08_0102, SSD6300, DA49/94, EPL 3391 and associated mining leases are detailed in **Table 2** below**.**

Table 3. Summary of Non Compliances with Rix's Creek North PA 08_0102, Rix's Creek South SSD6300, DA49/94 and EPL3391

Condition	Non-Compliance	Risk Level	Addressed in YEM23 AR / comments
EPL 3391 Condition L4.3, SSD6300 B7	One exceedance of the airblast overpressure limit was recorded during the reporting period.	**low**	Refer to Section 11.
EPL 3391 Condition O4.2	The effluent discharge utilisation area perimeters are fenced and signposted. However, signage in place does not align with the requirements of this condition and is not considered adequate to ensure exclusion of persons from these areas	**low**	Replaced signage in place at the effluent discharge utilisation areas with signage that states "Effluent Re-Use Area Keep Out".
PA 08_0102 Schedule 3, Condition 37.	Finalise long-term security of offset areas or seek further extension from the Secretary to the date required to secure the biodiversity areas listed in PA 08_0102 Schedule 3, Condition 37.	**low**	Considerable progress has been made to date, consultation with the NSW Biodiversity Conservation Trust (BCT) regarding the Conservation Agreements remain ongoing. Rix's Creek Mine will seek an extension of time from DPHI and will continue to progress with the final submission of the Conservation Ageements to finalise long-term security of offsets.
ML # CL 357, ML 1630, ML 1648-1651, ML 1725 ML # 1432, CL352, ML1803	On the 22/12/2023 Resources Regulator issued Rix's Creek Mine an official caution for late submission of the Rehabilitation Cost Estimate (RCE) for 2023 reporting period.	**Low**	Rix's Creek Mine has put in place systems to ensure that the RCE is submitted with future Forward Programs and Annual Rehabilitation Reports

Condition	Non-Compliance	Risk Level	Addressed in YEM23 AR / comments
\SSD 6300 Schedule 2, Condition B67	A Bushfire Management Plan has been prepared for the development in consultation with the RFS. However, the management plan does not satisfy all requirements of this condition. Specifically, the plan does not include a schedule of proposed bushfire mitigation works.	**Administrative**	Update the Bushfire Management Plan to include a schedule for undertaking proposed bushfire mitigation work including monitoring and maintenance. Review underway.
EPL 3391 Condition R5.6	A Heavy Plant-Tyre Disposal Report has been provided with the 2022/2023 Annual Return. However, the report does not provide the total tonnage of tyres disposed in the annual return year.	**Administrative**	Ensure the total tonnage of tyres disposed is included in the Heavy Plant-Tyre Disposal Report provided for 2023/2024 Annual Return – EPA 3391 Annual Return submitted with heavy tyre disposal report including tonnage of tyres.
SSD 6300 Schedule 2, Condition B19	Road Closure Management Plan does not provide measures to minimise the duration of road closures and to avoid peak traffic periods.	**Administrative**	R2 – Update the Road Closure Plan to include provisions for minimising the duration of closures and for avoiding peak traffic periods as far as reasonable
SSD 6300 Schedule 2, Condition B58	The Aboriginal Cultural Heritage Management Plan was generally implemented during the audit period, apart from the delivery of Aboriginal Heritage awareness training which did not meet the requirements of the plan.	**Adminstrative**	Update the worker induction package or develop to address training requirements

Compliance status key for Table 3

Risk level	Colour code	Description
High	Non-compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-compliant	Non-compliance with: • potential for serious environmental consequences, but is unlikely to occur; or • potential for moderate environmental consequences, but is likely to occur
Low	Non-compliant	Non-compliance with: • potential for moderate environmental consequences, but is unlikely to occur; or • potential for low environmental consequences, but is likely to occur
Administrative non-compliance	Non-compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions)

SECTION 2 INTRODUCTION

This Annual Review is compiled pursuant to Schedule 2 Condition E9 of SSD6300, Schedule 5, Condition 10 of PA08_0102 and Schedule 2, Condition 19 of DA 49/94 for the period Year Ending March 2024 (YEM2024) (From 1 April 2023 to 31 March 2024). This Annual Review has been prepared in accordance with the Post Approval Requirements for State Significant Developments – Annual Review Guideline (DPE 2015).

Rix's Creek Mine is wholly owned by Bloomfield Collieries Pty Limited (BCL) an Australian owned company.

Rix's Creek (South) Mine (RCS) commenced operations in July 1990 following the granting of Development Consent DA 86/2889 and Coal Lease No. 352 on 20 October 1989. This followed the submission of Coal Lease Application No. 185, an Environmental Impact Statement (EIS) and a public inquiry into the development application. Subsequently DA 49/94 was approved on the 19 October 1995 for a period of 21 years from the date of issue of a mining lease in satisfaction of Mining Lease Application No. 17. Mining Lease 1432 was subsequently issued on 24 June 1998.

In 2015, BCL submitted a development application to extend Mining Operations within the area for a further 21 years. This project was named the Rix's Creek (South) Continuation of Mining Project State Significant Development 6300 (SSD6300). BCL sought extension to the Project Approval (DA 49/94 MOD 10) duration for nine (9) months to allow continued coal extraction while the Continuation Project assessment was undergoing due process.

The Rix's Creek South Continuation of Mining Project SSD 6300 was commenced on 24 February 2020.

In December 2015, HV Coking Coal Pty Limited (Glencore) completed the purchase of 100% of the Integra Mining Operations Complex. BCL subsequently purchased, from Glencore, the previous Integra Open Cut Operations, Coal Handling Preparation Plant, Train Loading Infrastructure and the Rail Loop. Under the "Operating, Infrastructure Access and Services Agreement", entered into by Glencore and BCL, all current mining operations covered by the 2010 Integra Complex Consent, Project 08_0101 Integra Underground Project and Project 08_0102 Integra Open Cut Project, can continue. BCL operate the Open Cut Operations as Rix's Creek North Mine (RCN). This governs open cut mining in the Camberwell Pit and Falbrook Pit areas. Delivery of Run of Mine (ROM) coal from the Integra Underground Mine, Coal Preparation and Train Loading Operations are all operated and managed by BCL.

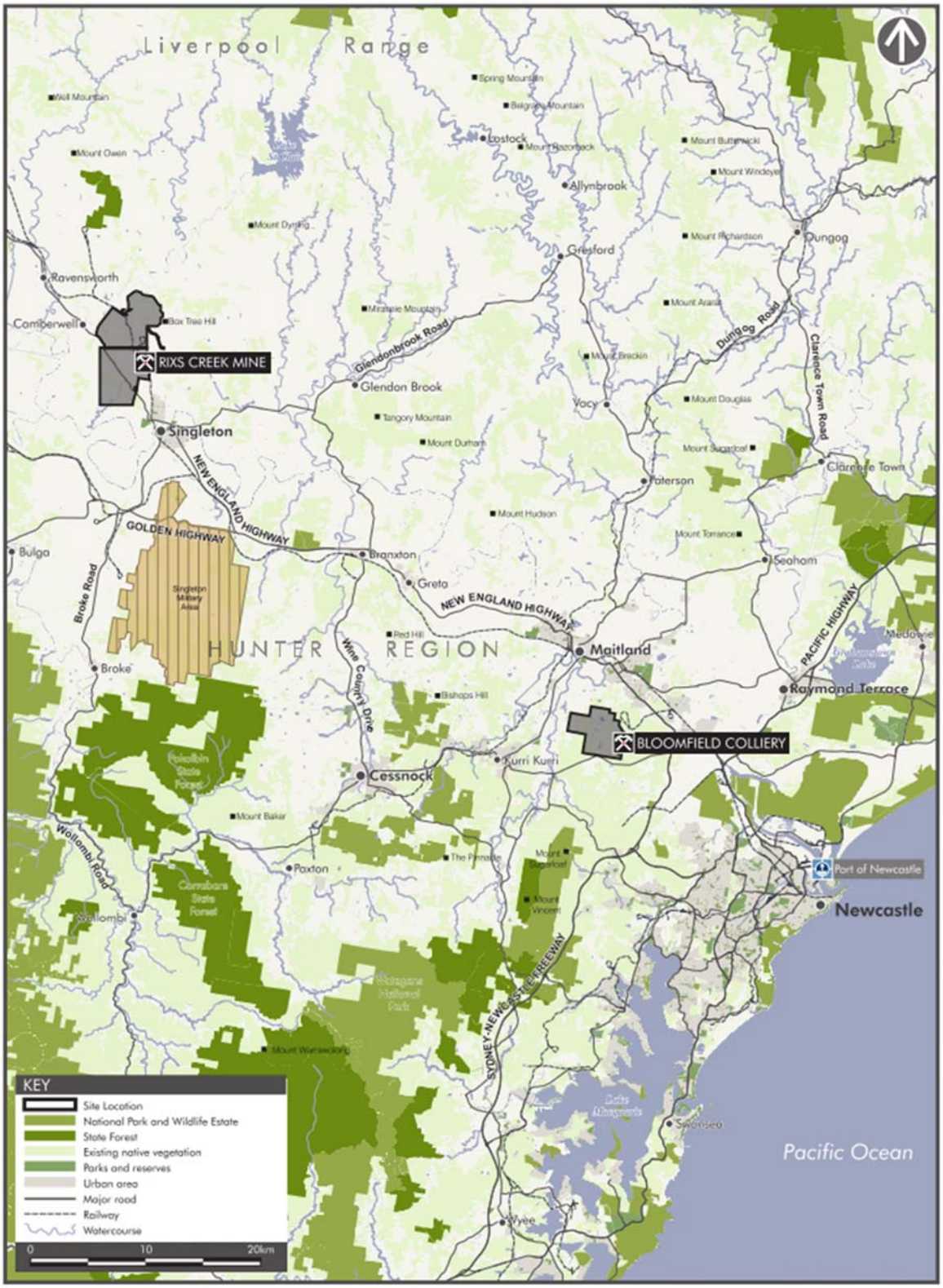


Figure 1. Regional Context Plan

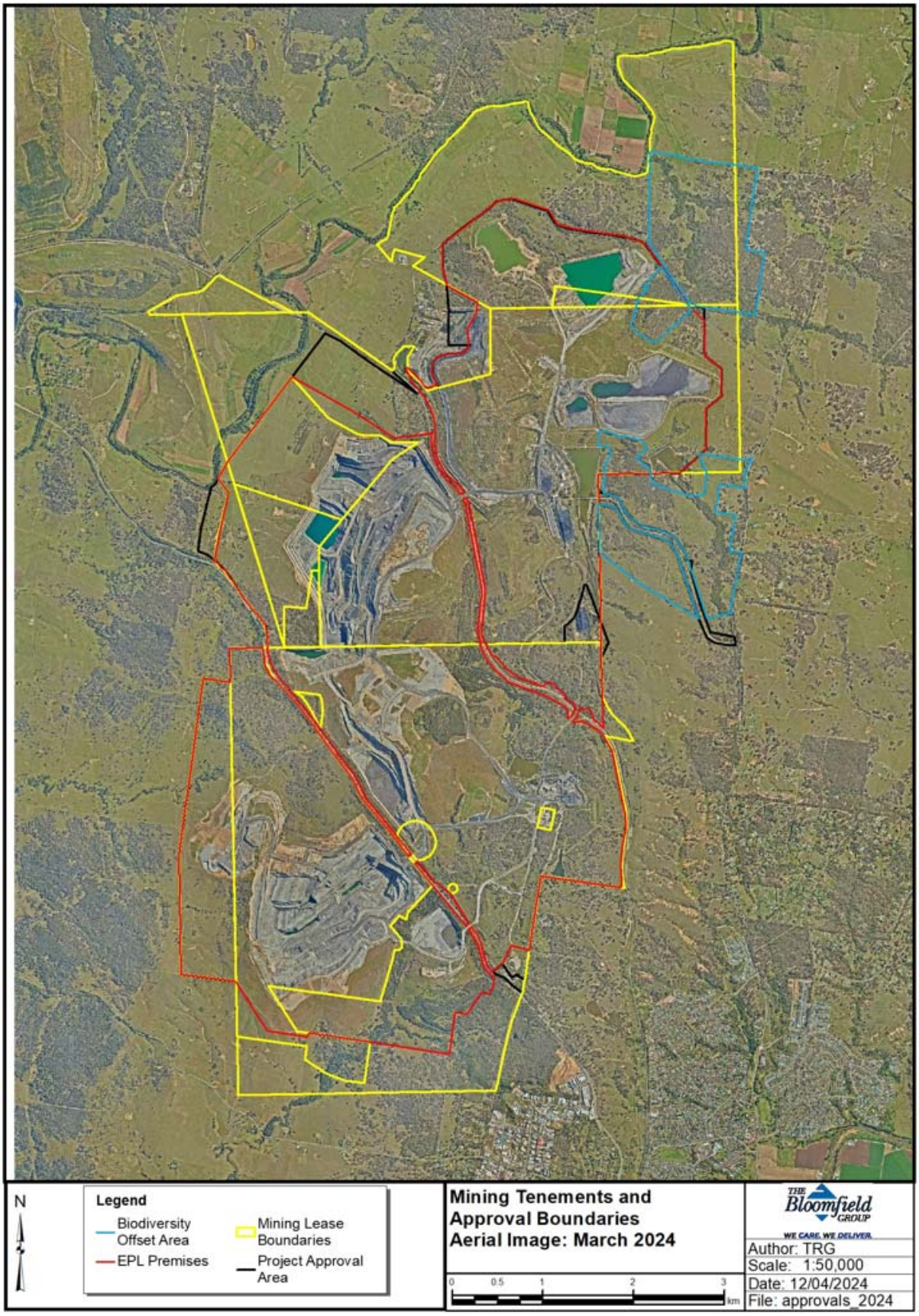


Figure 2. YEM 2024 Mining Tenements and Approval Boundaries

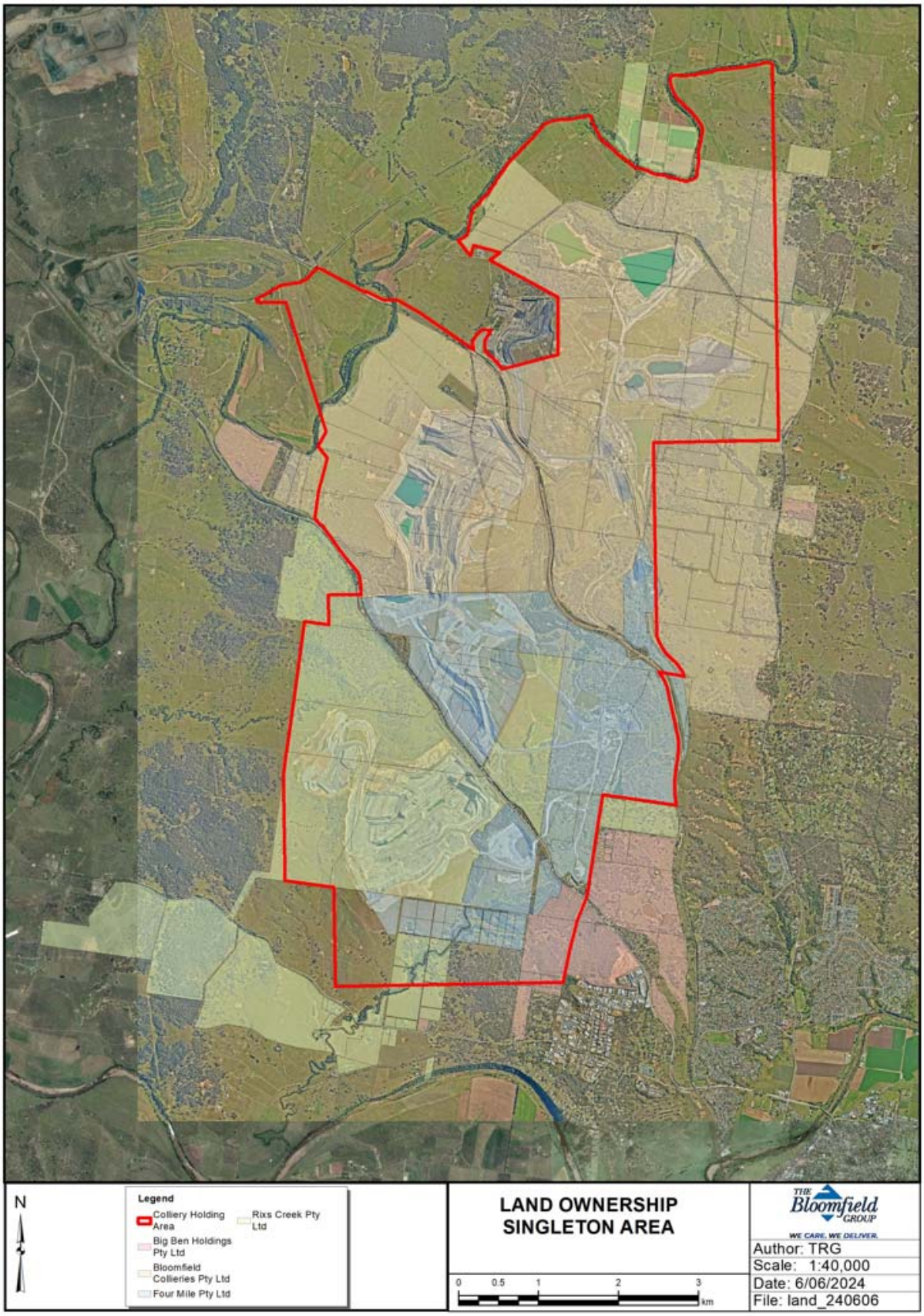


Figure 3. Land Ownership YEM 2024

2.2 Mine Contacts

Rix's Creek Pty Limited

Site:-	Rix's Creek Lane Singleton NSW 2330	Postal Address:-	P O Box 4 EAST MAITLAND NSW 2323.
Telephone:-	02 65788800		
Fax:-	02 65711066		

Rix's Creek Community & Blasting Hotline:-
02 49302665 (24hr)
info@bloomcoll.com.au

The Bloomfield Group Chief Operations Officer:- Luke Murray
Responsible for overseeing all Bloomfield Group operations.
E-mail:- lmurray@bloomcoll.com.au

Rix's Creek Mine Operations Manager:- Brendon Clements
Responsible for overseeing all Rix's Creek Mine operations.
E-mail:- bclements@bloomcoll.com.au

Rix's Creek Technical Services Manager:- Tim Gentle
Responsible for survey and mine planning.
E-mail:- tgentle@bloomcoll.com.au

The Bloomfield Group Environment Manager :- Chris Knight
Responsible for consulting with regulatory authorities as required, provide measures for continual improvement to procedures and ensuring all personnel are trained and competent in relation to environmental aspects of TBG.
E-mail:- cknight@bloomcoll.com.au

Rix's Creek Environment Superintendent :- Chris Quinn
Responsible for consulting with regulatory authorities as required, provide measures for continual improvement to site procedures and ensuring site personnel are trained and competent in relation to environmental aspects of Rix's Creek Mine.
E-mail:- cquinn@bloomcoll.com.au

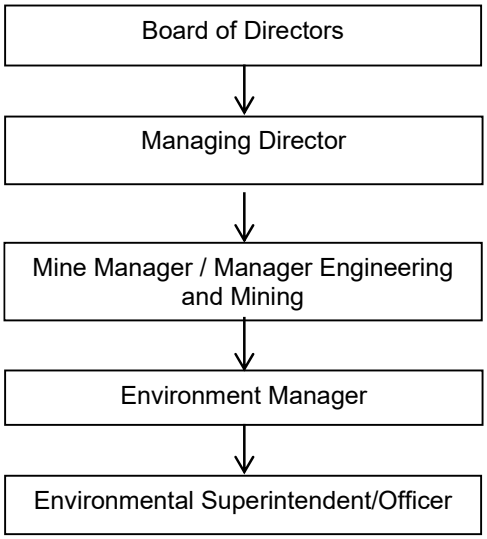
Rix's Creek Environment Officer:- David Holmes
Responsible for assisting monitoring and reporting on the environmental performance of the operation.
E-mail:- dholmes@bloomcoll.com.au

Rix's Creek Environment Graduate Officer:- Julius Harris-Payne
Responsible for assisting monitoring and reporting on the environmental performance of the operation.
E-mail:- jharrispayne@bloomcoll.com.au

Bloomfield / Rix's Creek Website:- www.bloomcoll.com.au

2.3 Organisational Chart (Environment)

As per *Rix's Creek Mine Management Structure Register* document:



2.4 Employment Demography

Rix's Creek currently has 352 employees comprising of staff and operators. This is an increase from the 303 employees reported in the YEM 2023 Annual Review. The areas which include the largest number of employees are Singleton Council (28%), Maitland City Council (25%) and Cessnock City Council (19%). Rix's Creek mine endeavour to employ local personnel and local contractors are preferentially engaged as required.

Table 4. Demographic Breakdown at Rix's YEM 2024

Residential Council	TOTAL	%
Singleton Council	**98**	**28%**
Maitland City Council	**89**	**25%**
Cessnock City Council	**66**	**19%**
Lake Macquarie City Council	**29**	**8%**
Newcastle City Council	**22**	**6%**
Muswellbrook Shire Council	**15**	**4%**
Port Stephens Council	**14**	**4%**
Dungog Shire Council	**9**	**3%**
Upper Hunter Shire Council	**5**	**1%**
Central Coast Council	**3**	**1%**
Mid Coast	**2**	**1%**
	352	**100%**

SECTION 3 – APPROVALS

Current approvals, tenements and MOP for RCM are summarised in Table 5.

Table 5. RCM approvals, tenements and MOP

Approval Number	Description	Issue Date	Expiry Date
Approvals			
NSW Department of Planning, Industry and Environment			
PA No. 08_0102	Development Consent for the construction and operation of surface coal mine extensions.	26 November 2010	31 December 2035 – Mod 9)
Modification 1	Modification to acquisition and mitigation properties, increase Falbrook Pit dump height, North crib huts, Implementation date for OLC extension, BOA extension	18 March 2012	31 December 2035 – Mod 9).
Modification 3	Eliminate OLC, modify Falbrook Pit Operating hours (7a-10p x 7d), additional mitigation property, amend noise criteria at property 112, Further extension to BOA (2 years)	5 October 2012	31 December 2035 – Mod 9).
Modification 2	OLC extension (6months), BOA extension (6 months)	1 February 2013	31 December 2035 – Mod 9).
Modification 4	Application submitted April 2014 to revise BOA strategy	24 February 2016.	31 December 2035 – Mod 9).
Modification 5	Transport and Processing of ROM coal from either Open Cut at either CHPP.	26 February 2016	31 December 2035 – Mod 9).
Modification 6	Application submitted Feb 2016 to separate consolidated approval into individual Underground and Open Cut approvals- and extend timeframe for open cut mining operations till 2035.	23 August 2016.	31 December 2035
Modification 7	The exploration drilling activities as described in EA (Mod 7)	1 September 2017	31 December 2035
Modification 8	Previous mined area outside approved open cut limit.	3 April 2019	31 December 2035
Modification 9	Increase in dump height, increase no of blasts per day and allow for exploration within the Approved Project Area	February 2021	31 December 2035

Approval Number	Description	Issue Date	Expiry Date
DA No. 49/94	Development Consent for the construction and operation of surface coal mine extensions.	19 October 1995	24 February 2022
DA No. 49/94 MOD 1	Consent modification to amend monitoring requirements	11 February 1999	24 February 2022
DA No. 49/94 MOD 2	Consent modification for Rix's Creek Mine to receive ROM coal from Glennies Creek Underground Mine and to process the coal for transport by rail (2003)	30 June 2006	24 February 2022
DA No. 49/94 MOD 3	Consent modification for Rix's Creek Mine to receive, process and transport bulk coal samples from the Bickham Exploration Project (2004);	15 June 2004	24 February 2022
DA No. 49/94 MOD 4	Consent modification for Rix's Creek Mine. To allow a tunnel under the New England Highway (2009);	27 August 2009	24 February 2022
DA No. 49/94 MOD 5	Consent modification for Rix's Creek Mine to enable the construction and operation of a rail loop, associated clean coal stockpile and rail loading facility (2013)	25 November 2013	24 February 2022
DA No. 49/94 MOD 6	Consent modification for Rix's Creek Mine to increase the total volume of material that can be moved annually to 16.1 million bcm (2014);	2 December 2014	24 February 2022
DA No. 49/94 MOD 7	Consent modification for Rix's Creek Mine for ROM coal from Rix's Creek North (former Integra Mine site) to be processed at RCS Coal Handling and Preparation Plant (CHPP) (2016);	26 February 2016	24 February 2022
DA No. 49/94 MOD 8	Consent modification for Rix's Creek Mine Satellite ROM Pads.	20 December 2016	24 February 2022
DA No. 49/94 MOD 9.	Consent modification for Rix's Creek Mine. (Dried tailings refuse to be emplaced in overburden dumps at Rix's Creek North (up to 500,000 m3) and overburden from Rix's Creek South to be placed at Rix's Creek North (up to 5,000,000 m3).	01 September 2017	24 February 2022
DA No. 49/94	Consent Order- 2017/211784- NSW Land and Environment Court.	12 July 2017	24 February 2022

Approval Number	Description	Issue Date	Expiry Date
DA 49/94 MOD 10	Consent Modification for Rix's Creek Mine Extension of approval for coal extraction until 24 March 2020.	12 June 2019	24 February 2022
SSD 6300	Rix's Creek Continuation of Mining Project	12 October 2019	12 October 2040
SSD 6300 MOD 1	Administrative Changes, receipt of coalaceous material and allow exploration within the Approved Project Area		12 October 2040
Singleton Shire Council			
DC	Hydrocarbon Storage Shed	7 December 2005	-
DC	Control Room	12 September 2005	-
Approval to Demolish Existing Dwelling and Shed	Dwelling and shed located at Lot 93 DP 752442 Middle Falbrook Road	13 April 2005	-
DC 719/2003	For Glennies Creek to Ashton Water Pipeline	13 February 2004	-
DC 90/2001 (Mod)	Alteration / additions to transportable office building	13 June 2001	-
DC 90/2001	For new offices and bathhouse	5 April 2001	-
BA 2/99	Bathroom / office complex	26 March 1999	-
DA 51/90	Stockpile and Rail Loading Facility	18 October 1990	-
7666/2019	Middle Falbrook Road Closure Permit	22 May 2019	-
18/00657	Consent for Permanent Road Closure- Disused Section of Middle Falbrook Road	18 September 2019	-
8167/2019	Stony Creek Road Use (Closure for Blasting).	30 May 2019	-

Approval Number	Description	Issue Date	Expiry Date
5586/2019	New England Highway Road Closure Permit	2 April 2019	-
Tenements			
CL352	Coal Lease	13 September 2011	Renewed until 20 October 2031
ML1432	Mining Lease	24 June 1998	Under renewal
CL357	Coal Lease	27 March 1990	27 March 2032
ML1630	Mining Lease	16 March 2009	16 March 2030
ML1648	Mining Lease	4 January 2011	4 January 2032
ML 1649	Mining Lease	4 January 2011	4 January 2032
ML1650	Mining Lease	4 January 2011	4 January 2032
ML1651	Mining Lease	4 January 2011	4 January 2032
ML 1725	Mining Lease	6 March 2018	11 November 2033
ML 1803	Mining Lease	5 May 2020	5 May 2041
Roads and Maritime			
New England Highway – Road Occupancy Licence.		Licence No 2266758	Renewed until 30 June 2025.
Rehabilitation Management Plan			
Rehabilitation Management Plan		8/04/2024	Not Applicable

Issued By	Number	Grant date	Expiry, renewal or anniversary date	Comment
Environment Protection Licence				
NSW Environment Protection Authority.	EPL 3391	21 August 2000	03 April (Annually)	Coal Works >2Mt – 5Mt annual handling capacity Mining for Coal >3.5Mt - 5Mt Annually
Dangerous Goods Notification				
SafeWork NSW	NDG 028098 (RCN)	14/4/2019		Notification of Dangerous Goods on Premises (ammonium nitrate, emulsions and combustible liquids).
SafeWork NSW	NDG 032405 (RCS)	14/4/2019		Notification of Dangerous Goods on Premises (ammonium nitrate, emulsions and combustible liquids).
Water Licences				
Natural Resource Access Regulator	**Number**		**Category**	**Volume**	**Purpose**
	WAL41500		Mining	100 (ML/yr)	Open Cut (dewatering groundwater) Hard Rock
	WAL 41555		Mining	100(ML/yr)	Open Cut (dewatering groundwater) Hard Rock
	WAL 40777		Mining	305 (ML/yr)	Open Cut (dewatering groundwater) Hard Rock

Issued By	Number	Grant date	Expiry, renewal or anniversary date		Comment
	20BL170864		Mining	100(ML/yr)	1 x Bore (dewatering groundwater

Issued By	Number	Grant Date	Expiry, Renewal or Anniversary Date	Comment
NSW Environment Protection Authority. Radiation Management Licence No: **5079169**	Radiation Regulated Material ID 8661	-	14 April 2025	Old No: RR10119
	Radiation Regulated Material ID 8663	-	14 April 2025	Old No: RR10120
	Radiation Regulated Material ID 8664	-	14 April 2025	Old No: RR10121
	Radiation Regulated Material ID 9121	-	14 April 2025	Old No: RR7561

SECTION 4 – OPERATIONS SUMMARY

Rix's Creek Mine operates 24 hours per day, 7 days per week at Rix's Creek South and Rix's Creek North Mining Areas with reduced operations on weekends. No mining was undertaken within the Falbrook Pit within the reporting period.

Table 6. Rix's Creek North PA08_0102 Production Summary YEM 24

Material	Approved limit	Previous Reporting Period	This Reporting Period	Next Reporting Period
Waste Rock / Overburden	N/A	5,488,681 BCM	5,023,386 BCM	5,451,816 BCM
ROM Coal / Ore	4.5 Million Tonne per annum (Western Mining area ONLY)	1,764,544t**	1,238,825t **	***
Coarse reject / Fine reject (Tailings)	N/A	797,731t *	375,855t *	***

** RCN CHPP washed Integra UG Coal only. Coarse reject and tailings generated from processing Integra Underground Coal. RCN Open Cut Coal processed at RCS CHPP.*
*** RCN Open Cut Coal tonnage processed at RCS CHPP.*
**** No forecasts from Interga UG for YEM25.*

Table 7. Rix's Creek South SSD6300 Production Summary YEM 24

Material	Approved limit	Previous Reporting Period	This Reporting Period YEM 23	Next Reporting Period
Waste Rock / Overburden	N/A	10,326,120 BCM	11,046,195 BCM	10,175,539 BCM
ROM Coal / Ore extracted	3.6 Million Tonnes per annum (RCS continued operations)	2,955,708t	2,948,672t	2,925,780t
Coarse reject / Fine reject (Tailings)	N/A	1,807,446t *	2,643,200t *	2,416,134t *
ROM Coal processed on site	4.5 Million Tonnes per annum	3,936,297t	4,215,952t**	4,253,743t
Saleable product	N/A	1,772,800t	1,572,752t	1,731,701t

**Combined coarse reject and tailings from RCS CHPP which processes both RCN and RCS ROM Coal.*
*** ROM Coal processed over a 12 month period. 12 month Approval limit is 5.625Mt.*

During YEM 2024, the Rix's Creek North CHPP washed Glencore's Integra Underground ROM Coal, with fine tailings from the coal washing process being deposited in Rix's Creek North prescribed emplacement facility Tailings Dam 2. Course reject from the processing of Integra UG's coal was disposed within the Rix's Creek North open cut area.

Coal that was extracted from the Rix's Creek North and Rix's Creek South open cut areas was processed at the Rix's Creek South CHPP. Solid bowl centrifuges (SBCs) were primarily used to process tailings which was co-disposed in Rix's Creek South open cut area. Tailings not treated via the SBC's was transferred via pipeline to the RCS Emplacement Area 4, which is referred to as MB19. Return water is decanted from the emplacement area and pumped back to the containment water system that feeds the coal preparation plants. This maximises the recycling of mine water across site. Course reject was disposed in the RCS open cut area.

The solid-bowl centrifuge system located at the RCS CHPP enables a lower amount of tailing's to be transported by pipeline as the water removed during the tailing's 'drying' process allows for co-disposal of the 'dried' tailing's within the open cut emplacement area in a similar fashion to overburden. Early testing of dump areas has shown minimal surface slumping / cracking when this dried tailing's material is capped with sufficient overburden material from the mining process.

Rix's Creek South SSD6300 operated below the 3.6 Million ROM Tonne per annum limit. At Rix's Creek North PA (08_0102) ROM coal production was significantly less than the maximum allowable limit of 6.0 Million Tonnes per annum. (4.5Mt from the Western Mining Area (Camberwell) & 1.5Mt from Northern Mining Area (Falbrook)).

Table 8. Rix's Creek North Production History

YEAR	ROM COAL PRODUCTION (tonnes)	OVERBURDEN REMOVAL (bank cubic metres)	APPROVAL LIMIT ROM Coal (Tonnes) (Western Mining Area ONLY)
2016	915,011	4,825,050	4,500,000*
2017	1,804,652	11,564,760	4,500,000*
2018	2,979,572	10,402,073	4,500,000*
2019	1,213,920	7,352,886	4,500,000*
2020	1,332,678t	5,032,788	4,500,000*
2021	1,180,607t	4,171,424	4,500,000*
YEM 2023	1,764,544t	5,488,681	4,500,000*
YEM 2024	1,510,792t	5,023,386	4,500,000*

* Project Approval 08_0102 Sch 2, Con.7.

Table 9. Rix's Creek South Production History

YEAR	ROM-of-MINE COAL PRODUCTION (tonnes)	OVERBURDEN REMOVAL (bank cubic metres)	Total Movement of Material on site (bank cubic metres)	APPROVAL LIMIT
1997	1,700,000	7,198,000	8,898,000	15,000,000 BCM
1998	1,800,000	7,052,000	8,852,000	15,000,000 BCM
1999	1,888,900	7,635,000	9,523,900	15,000,000 BCM
2000	2,288,900	7,635,000	9,923,900	15,000,000 BCM
2001	1,679,400	7,460,000	9,139,400	15,000,000 BCM
2002	1,754,001	7,787,685	9,541,686	15,000,000 BCM
2003	1,943,095	8,768,068	10,711,163	15,000,000 BCM
2004	1,931,383	8,511,771	10,443,154	15,000,000 BCM
2005	1,628,753	9,567,000	11,195,753	15,000,000 BCM
2006	2,015,042	11,547,989	13,563,031	15,000,000 BCM
2007	2,096,320	11,150,416	13,246,736	15,000,000 BCM
2008	2,096,697	11,020,152	13,116,849	15,000,000 BCM
2009	2,338,424	10,698,123	13,036,547	15,000,000 BCM
2010	2,367,229	10,267,881	12,635,110	15,000,000 BCM
2011	2,212,703	10,589,386	12,802,089	15,000,000 BCM
2012	2,689,935	10,341,895	13,031,830	15,000,000 BCM
2013	2,747,880	11,502,321	14,250,201	15,000,000 BCM
2014	2,760,693	13,234,085	15,994,778	16,100,000 BCM*

2015	2,847,899	13,364,730	15,073,469	16,100,000 BCM
2016	2,662,223	13,534,982	15,132,316	16,100,000 BCM
2017	2,013,486	9,266,678	10,609,002	16,100,000 BCM
2018	1,694,275	8,343,078	10,037,353	16,100,000 BCM
2019	2,332,364t	7,621,847	9,954,211	16,100,000 BCM
2020	3,107,814**			3,600,000 ROM Tonnes extracted
2021	2,955,708t**			3,600,000 ROM Tonnes extracted
YEM 2023	3,382,350t***			3,600,000 ROM Tonnes extracted
YEM 2024	2,948,672t**			3,600,000 ROM Tonnes extracted

*Development Consent 49/94 - Mod 6 approval granted November 2014.

** SSD 6300 consent - Approval limit now ROM Coal Extracted from pit

*** date from 1 January 2022 – 30 March 2023 reported for 15 month period.

Table 10. Rix's Creek North Coal Transport PA 08_0102

YEAR	Product Coal railed from RCN Rail Loop (tonnes)	Coal Transport limit (Tonnes)
2021	2,228,498*	7,300,000
YEM 2023	1,624,535*	7,300,000
YEM 2024	1,355,556*	7,300,000

*Product Coal from Integra Undeground PA 08_0101.

Table 11. Rix's Creek North Train Movements for YEM23

RCN Train Movements			
Annual Average	**YEM 2023**	**YEM 2024**	**PA_08_0102**
Average trains/day over calendar year	**1.42**	**1.92**	**3**
Annual Maximum			
Maximum trains/day	**4**	**4**	**7**
Total days loading			
Days/year loading occurred	**177**	**122**	

4.1 Exploration

No exploration undertaken during YEM 2024.

4.2 Land Preparation

During the reporting period Rix's Creek Mine progressed with the disturbance of the Western out of Pit dump area (WOOPD) and WH11 near the high-wall. 56.5ha of land was disturbed as per the land disturbance procedure. The Dulwich pre-strip block in Camberwell Pit and Western out of pit dump (WOOPD) was progressed in YEM24. A small section of the WS13 block was disturbed during the reporting period.

The Bloomfield Group have an integrated Permit to Disturb system which was utilised prior to clearing any land within the apporoved disturbance areas . As per the permit to disturb process, a flora and fauna survey is conducted of the area prior to any clearing taking place.

4.3 Construction

In YEM 2024 a prefabricated female bathhouse and toilet block was installed at Rix's Creek South, to increase the amenities available to employees. The Rix's Creek North administration building internal renovation commenced during the reporting period to increase office space at RCN. This renovation will be completed in YEM25 reporting period. During YEM24 Rix's Creek Mine replaced 7 of the previoius 10 evaporation fans at Rix's Creek North. These fans are used to reduce excess water and were commissioned during the reporting period. Further refinement of the fans is expected in YEM25.

4.4 Mining

The majority of RCM operations were conducted in Rix's Creek South, where four excavators were working. The Liebherr R9800 (EX456), Hitachi 5500 (EX454) and two Hitachi 3600 excavators (EX450 & EX451) all conducted operations in the West Pit with most work completed to the southern and western side of the West Pit.

Operations also took place in Rix's Creek North in the Camberwell Pit. The CAT 6060 (EX455) and another Hitachi 3600 (EX452) both had their operations spanning from the northern extents to the southern extents of the Camberwell Pit.

No mining occurred in the Falbrook Pit at RCN which remains in care and maintenance. Falbrook Pit is used as a water storage void.

There has been no major change to mining methods on site during the reporting period. Overburden and inter-burden were removed utilising the Liebherr R9800 excavator, Cat 6060 (EX6060) Hitachi EX5500 excavator, Hitachi EX3600 excavators, and large front end loaders (Caterpillar 994 & 992). These machines load 220 tonne (Caterpillar 793) and 180 tonne (Caterpillar 789) rear dump trucks. Associated with this machinery is the normal suite of ancillary equipment (bulldozers, graders, water carts and drills) used in the overburden and coal removal process.

During YEM 2024 the main operational areas included mining of the Rix's Creek North Camberwell Pit and Rix's Creek West Pit which continued to progress in a north-west direction aligned with the current forward program and staged plans within the development consent.

Table 12 is a list and number of the major pieces of equipment utilised on site for the mining operation.

Table 12. Equipment List YEM 2024

Equipment List YEM 2024	
Caterpillar 789 Truck	21
Caterpillar 793 Truck	23
Caterpillar 994 Front-End Loader	4
Caterpillar 992 Front-End Loader	3
Caterpillar 950 Front-End Loader	1
Caterpillar 962H Front-End loader	1
Caterpillar IT12 Front-End Loader	1
Liebherr R9800 Excavator	1
Hitachi EX5500 Excavator	1
Hitachi EX3600 Excavator	3
Caterpillar 6060 Excavator	1
Caterpillar D 11 Bulldozer	8
Caterpillar D 10 Bulldozer	8
Caterpillar Tiger 854 Bulldozer	1
Caterpillar 16M Grader	1
Caterpillar 24H Grader	2
Caterpillar 24 Grader	2
Redrill SK75	1
Sandvik Drill D75K	1
Sandvik Drill D50-i	2
Caterpillar MD6250 Drill	1
Volvo Stemming Truck	2
Volvo Lube Truck	2
Caterpillar 773B Service Truck	1
Caterpillar 785 Water Cart (114,000 l)	3
Caterpillar 777 Water Cart (80,000 l)	3
Isuzu Water Cart (13,000 l)	2

4.5 Waste Management

The following waste streams were serviced during the reporting period:

Waste Water: Grey water generated onsite consisting of domestic waste water from the bath house facility's, associated amenity areas and administration areas pass through septic systems approved by the local authorities. RCS: OSSM Approval No: 15.2022.73.1 and RCN: OSSM Approval No 1379/1999.

These septic facilities comprise primary and secondary treatment process with solid waste processed by anaerobic bacteria. Effluent passes to a maturation pond prior to disposal by evaporation and land irrigation. The septic systems are regularly inspected by a specialist water treatment contractor. The septic tanks are vacuum cleaned out to remove sludge build up on a quarterly schedule or as required by a suitably qualified waste contractor and the resulting waste is removed from site. At the RCS Sewage Treatment Plant, an in-line chlorination dosing system was installed to reduce faecal coliform within the effluent pond in 2021. During 2022 two new septic tanks were installed in preparations for the female bathhouse whch was installed in YEM 2024 at RCS.

Waste Oil: Waste oil from mining equipment as a result of scheduled maintenance operations and breakdown repairs is collected in storage tanks and removed for recycling by a licenced waste oil contractor. Most mining machinery is greased automatically by an on board system. The system is refilled from a bulk bin on the mobile service cart. Alternatively, this is carried out in the main workshop. Any oil contaminated water is contained within bunded storage areas, passed through specialised oil separation systems before being collected by the licenced waste oil contractor.

Waste Metal Recycling: Scrap metal is collected for recycling on a regular basis and as required. The metal recycler sorts material into hard and soft metal for further economic benefit to the company. A tidy up initiative which began in 2021 was continued in YEM 2023 and YEM 2024, which saw more scrap metal be recycled to improve the cleanliness of areas around RCM, which included the dismantling and scrapping of retired heavy equipment.

Liquid Waste: Due to the modification of the RCS Septic tanks there was an increase in liquid waste removal in YEM 2023 compared to the previous reporting period. During YEM 2024 the liquid waste removal has returned back to similar levels as seen in 2022.

Copper Bin: Scrap copper , mostly from electrical wiring, is recycled by a metal contractor and collected on a regular basis. Most wiring remains with the protective layer attached but where economical a contractor strips assorted wire on-site for further economic benefit to the company. A copper waste bin is located in the RCS electrical workshop and RCN CHPP and electrical workshop to further minimise waste.

General Waste: General waste garbage is placed in large bins and taken off site by a licenced waste contractor for disposal.

Paper/Cardboard Recycling: Paper and cardboard is placed in large bins and taken off site by licenced contractor for further recycling. Small paper/recycling bins are placed within the main offices, workshops and CHPP's to enhance recycling.

Batteries: Small general use batteries (AA, AAA, C, D, etc.) recycling was introduced during 2015 to site. Sealed battery tubs are located within the offices, electrical workshop and RCN workshop for further recycling off site by the waste contractor. Large batteries are also stored on bunded pallets, or within designated battery bays and taken off site by a licenced waste contractor.

Oil Filter Bin: Used oil filters from heavy vehicles are placed in large lidded bins located at both the South and North workshops. These are taken off site by a licenced contractor for cleaning and recycling at the waste contractor's facility

Hydraulic Hose Bins: Two hydraulic hose bins are located at each of the RCS and RCN workshops and regularly serviced by a licenced waste contractor.

Oily Rag Bins: There are designated oily rag bins located in and around the RCS and RCN

mechanical workshops and they are regularly serviced as required by a licenced waste contractor.

Used printer cartridges: Taken off site by contractor for recycling at the waste contractor's facility as required.

Poly Pipe recycling: Poly pipe was stored on site and reused as required in YEM 2024.

Electronic Waste: E waste is segregated and transported offsite to a local recycler by the primary waste contractor. E-waste can include, printer cartridges, old computers and outdated electronic components from operational machinery.

Co-mingled waste: The introduction of the yellow lid bins and skips around site for plastic bottles, cartons, paper and glass has seen staff separating these items from general waste and other streams, to be recycled independently.

Table 13. Waste Volumes YEM 2024

Description	YEM 2023 Total	YEM 2024 Total
Liquid Waste (L)	**116,200**	**15,000**
Metal Recycling (t)	**220**	**326.9**
Batteries recycling (kg)	**11,750**	**18,028**
Copper (kg)	**802**	**2,507**
Oily Water (t)	**4,110**	**N/A**
Waste Oil (L)	**470,380**	**416.900**
Contaminated Grease	**N/A**	**2,110**
Paper and Cardboard (kg)	**18,650**	**25,130**
Timber Recycling(kg)	**40,700**	**42,620**
General Waste (kg)	**193,900**	**202,155**
Co-mingled (kg)	**N/A**	**890**
Oily Rags (kg)	**1,491**	**635**
Hydraulic hoses (kg)	**12,410**	**16,660**
Oil Filters	**24,573**	**24,834**

In YEM 2023 the implementation of a colour coded bin system was rolled out with the introduction of our new waste management contractor, to ensure that workers and contractors segregate waste more effectively. A training program was implemented throughout the workforce to improve waste segregation. Co-mingled recycling was also introduced onto site via our contracted waste provider and this initiative has seen segregation and reduction of general waste quantities.

4.6 Product Stockpiles

Raw coal is transported from the active mining areas in 180 and 220 tonne rear dump trucks (Caterpillar 789 and 793) to the 30,000 tonne capacity run of mine (ROM) stockpile at the coal preparation plant or the two satellite ROM stockpiles prior to washing. Product coal (clean coal) is conveyed to a 1,000 tonne bin and then transported via internal roads using registered semi trailers to the rail loading facilities. Each semi-trailer holds approximately 48 tonnes of clean coal.

At Rix's Creek North, Caterpillar 789 and 793 haul trucks transport coal from the Integra Underground ROM stockpile, along the RL100 haul road to the RCN CHPP. Haul trucks either place the ROM coal directly into the coal hopper for processing or stockpile the ROM coal at the RCN stockpile.

4.7 Hazardous Material Management

Under Schedule 11 of the Work Health and Safety Regulation notification of hazardous substances occurred during the reporting period. The listing of dangerous goods stored on site is listed below:-

Depot 1	Above ground tank for Class C1, UN 00C1 Diesel.	220,000 litres
Depot 2	Above ground tank for Class C1, UN 00C1 Diesel.	90,000 litres
Depot 3	Above ground tank for Class C1, UN 00C1 Diesel.	90,000 litres
Depot 5	Above ground tank for Class C1, UN 00C1 Diesel.	90,000 litres
Depot 6	Above ground tank for Class 3, UN 1989 Aldehydes, N.O.S.	15,000 litres
Depot 8	Above ground tank for Class C1, UN 00C1 Combustible liquids	60,000 litres
GAS1	Cylinder store for Class 2.1, UN1001 Acetylene, dissolved	1,000 litres
GAS2	Cylinder store for Class 2.2, UN1072 Oxygen, compressed	1,000 litres
GAS2	Cylinder store for Class 2.2, UN1006 Argon, compressed	1,000 litres
RCN1	Above ground tank for Class 5.1, Ammonium Nitrate	50,000 kg
TKN1	Above ground tank for Class 5.1, Ammonium Nitrate Emulsion	60,000 kg
TKN2	Above ground tank for Class 5.1, Ammonium Nitrate Emulsion	30,000 kg

A separate licence for the storage and handling of explosives on the site has also been made to WorkCover. License number:- XSTR100131 is granted until 5/7/2027 The listing of explosives stored on site is listed below:-

MAG1	Magazine Class 1.1B, UN 0360, Detonator Assemblies non-electric	10,000 units
MAG1	Magazine Class 1.4S, UN 0349, Articles, Explosives, N.O.S.	10,000 metres
MAG1	Magazine Class 1.4B, UN 0255, Detonators, Electric for blasting	10,000 units
MAG2	Magazine Class 1.1D, UN 0065, Cord, detonating, flexible	3,000 metres
MAG2	Magazine Class 1.1D, UN 0042, Boosters	3,000 kg
RCN1	Explosives Receptacle Class 5.1, Ammonium Nitrate (ANFO)	50,000 kg
TNK1	Above ground tank Class 5.1, UN 3375, ANFO Emulsion	80,000 litres
TNK2	Above ground tank Class 5.1, UN 3375, ANFO Emulsion	40,000 litres

Access to Safety Data Sheets is through the ChemAlert web site. The register is continually updated as new products are brought onsite.

Explosives are stored in explosive magazines located on site.

4.8 Other Infrastructure Management

There has been an ongoing maintenance program on infrastructure associated with the Rix's Creek mining operation. This has included maintenance of assorted buildings and substation sheds across site, with fencing completed in required areas. As part of this maintenance, regular brush cutting and weed spraying have also been employed to maintain these sites.

During the reporting period the Asset Management Team continued to review the suitability of culverts across Rix's Creek Mine. A maintenance plan has been implemented to repair culverts with repairs to commence in YEM25.

There has been an ongoing maintenance program replacing existing older lights with new modern LED lighting that shields and directs light more directly toward the ground rather than outwards. When fixed lighting is installed at Rix's Creek Mine, the external lighting is assessed to comply with *Australian Standard 4282: 2019 – Control of Obtrusive Effects of Outdoor Lighting.*

4.9 Bush Fire Management

A slashing program is undertaken as required to reduce fuel loads. Excessive grass and weeds are sprayed around site infrastructure to further reduce fuel loads. Rix's Creek and AusGrid also conducted spraying and mulching of power line easements across site throughout the year.

Proactive management was undertaken which included trimming trees that could potentially come in contact with overhead power lines and implementing an inspection program for tree trimming near the overhead power lines, CHPP's and other buildings to reduce the occurrence of grass fires.

Fuel reduction programs are undertaken on an as needed basis and done in conjunction with the local Rural Fire Service and local landholders. Areas of land owned within the lease and outside of the active mining area and rehabilitated areas will continually be grazed by TBG or leased to minimise fuel loads across site.

4.10 Preston Colliery Remediation Project

SSD 6300 Modification 1 approved the transfer by road of residual coalaceous material from Preston Colliery and Bloomfield Mine into Rix's Creek South for processing stockpiling and transportation. (Schedule 2 Condition A9).

During YEM 2024 remediation works were undertaken at the former Preston Colliery site at Curlewis NSW. Activities during the period included remediation of a number of areas identified by the Resources Regulator which involved removal and transport of the coalsceous material to Rix's Creek South.

A total of 4,682.03t of coalaceous material was transported to Rix's Creek between 19 June - 4 August 2023. This material was subsequently processed, stockpiled and transported during the YEM 2024 period.

The remediation works at the Preston Mine have now been completed and will be subject to relinquishment following approval of the completion of rehabilitation by the Resources Regulator.

SECTION 5 – ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEWS

5.1 Actions required from previous Annual Reviews

The Department of Planning Housing and Infrastructure responded to the Rix's Creek Mine 2023 Annual Review on 25/07/2023. The following comments were made with reference to reporting of incidents and non-compliances.

Additional Information as required by the DPIE from Annual Review 2023.	Sections Addressed in Annual Review 2023 and onwards.
With reference to the Annual Review Section 11 – Incidents and Non-Compliances, please refer to the Annual Review Guideline (October, 2015), Section 11 – incidents and non-compliances during the reporting period for best practice reporting style that should be adopted for future Annual Reviews	Refer to Section 11 for updated reporting section.

SECTION 6 ENVIRONMENTAL PERFORMANCE

An extensive environmental monitoring program is conducted throughout the site and surrounding areas to monitor the impacts of the operation. Environmental parameters monitored include local meteorology, air quality, water quality, blast vibration, blast over pressure and noise.

6.1 Meteorological

RCM operates a meteorological station on the site. The RCM meteorological station is located on the Western extent of RCS West Pit operations and has real-time capabilities for relevant personnel to access via computer or phone. In September 2019 a new weather station was installed with specification requirements associated with AS/NZS 3580.14:2014 (*Methods for sampling and analysis of ambient air - Meteorological monitoring for ambient air quality monitoring applications*). The RCM meteorological station record the following environmental parameters:-

- wind speed and direction;
- Sigma Theta;
- temperature (2m and 10m);
- relative humidity;
- solar radiation; and
- rainfall.

These parameters are recorded at 10-minute intervals and downloaded on a monthly basis. To complement this, Rix's Creek Mine is a member of the Upper Hunter Sounding Group Joint Venture (UHSGJV) which provides access to an atmospheric prediction model providing more accurate weather parameter predictions for the Rix's Creek operation. This information is used by management to access environmental conditions for blast scheduling, and determine when adverse conditions exist to cease dumping to exposed locations. This model also forecasts meteorological data for the following day so operational activities can be scheduled for the predicted conditions.

6.1.1 Rainfall

Total rainfall for the YEM 2024 period was 459.6mm over 118 days, which was 263.6mm below average for the period. The yearly average for Singleton is 723.2mm (BOM historical yearly average). The monthly rainfall data is provided in **Table 15** and **Figure 4** shows the results graphically. No month received above average rainfall for this period.

Table 14. Annual Rainfall

RIX'S CREEK ANNUAL RAINFALL YEM 2024													
Month	April	May	June	July	August	September	October	November	December	**January**	**February**	**March**	**TOTAL**
Total Rainfall	46.8	11.0	11.2	16.2	36.2	17.0	34.4	42.8	65.2	57.0	71.0	50.8	**459.6**
Average Rainfall	63.9	47.2	55.5	36.5	39.6	39.6	53.2	61.3	70.4	82.8	91.4	81.8	**723.2**
Wet days (>0.2 mm rainfall)	16	10	8	9	10	5	5	13	7	9	16	10	**118**

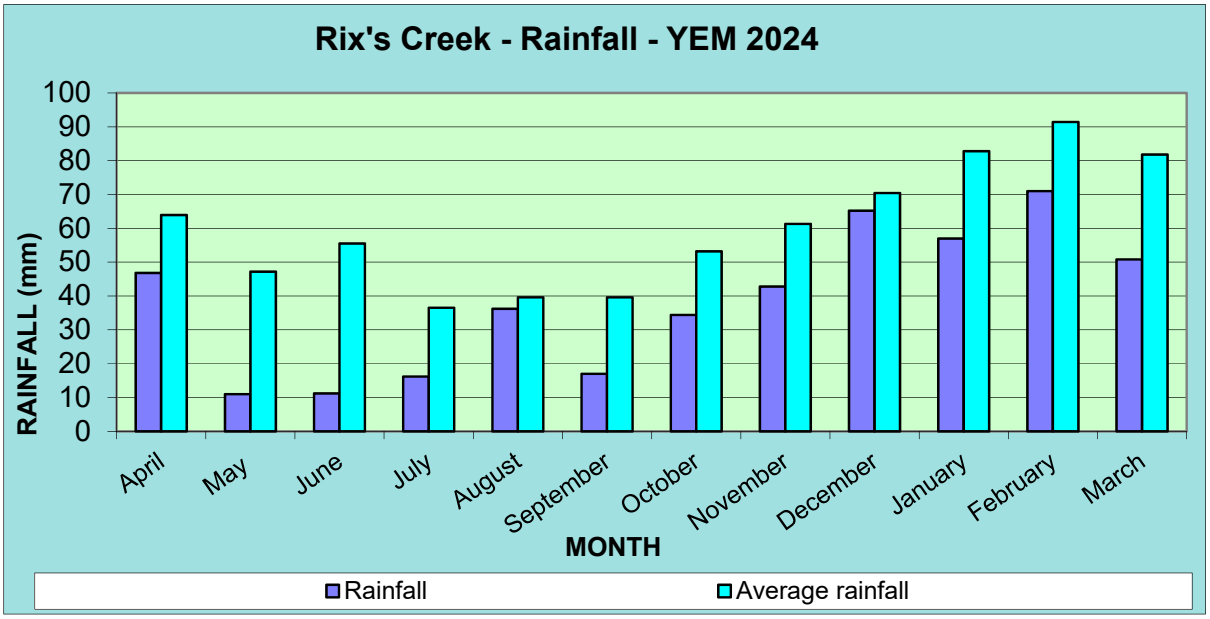


Figure 4. Annual Rainfall YEM 2024

6.1.2 Temperature

The maximum temperature of 42.8^{0}C occurred in December 2023 and the minimum temperature of 0.8^{0}C was recorded in June 2023. **Figure 5** shows the monthly average maximum and minimum temperatures for the site as well as the maximum and minimum recorded temperatures.

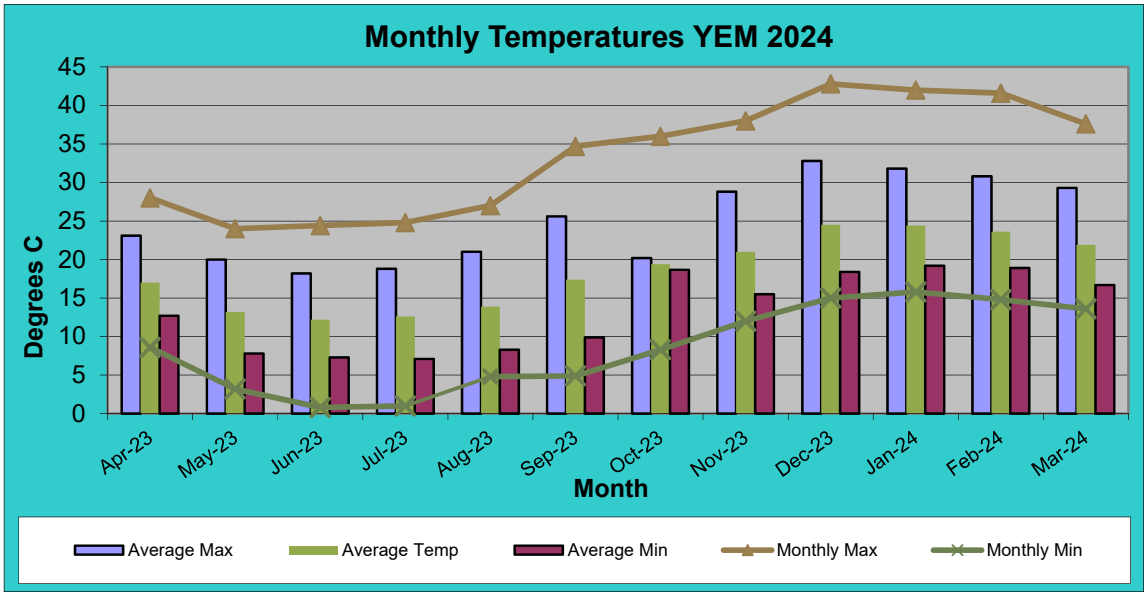
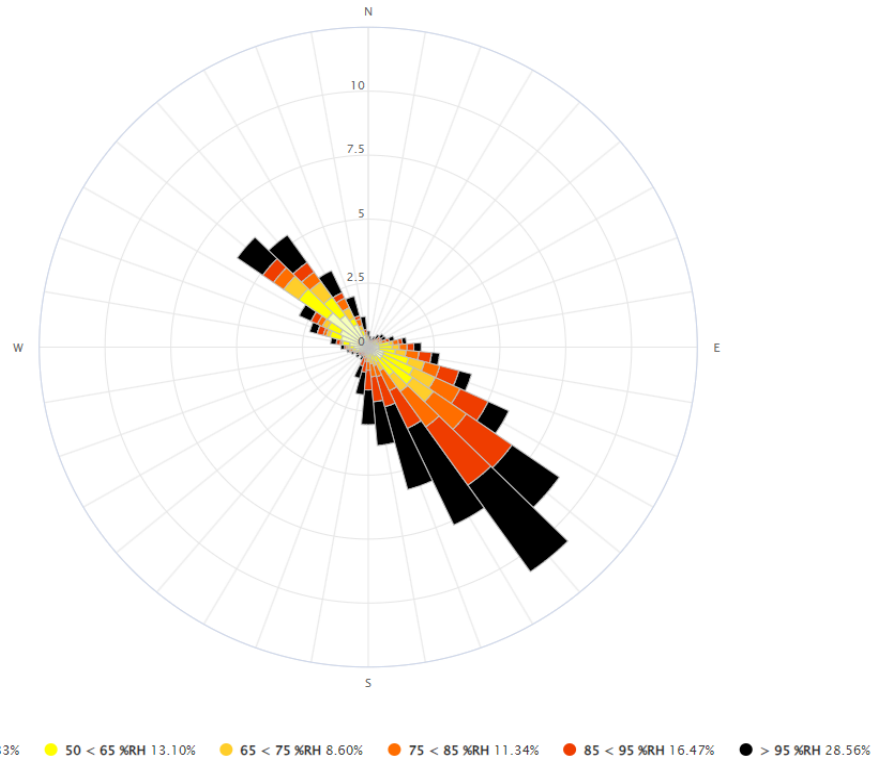


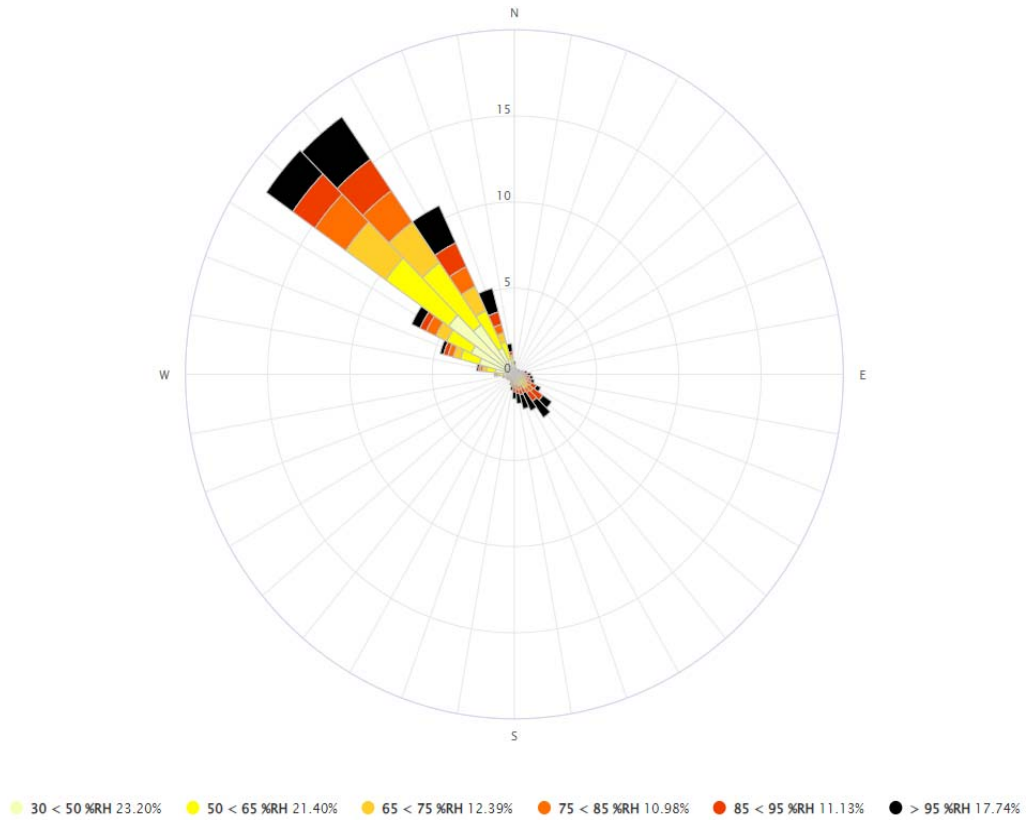
Figure 5. Average Monthly Maximum & Minimum Temperature YEM 2024

6.1.3 Wind Speed and Direction

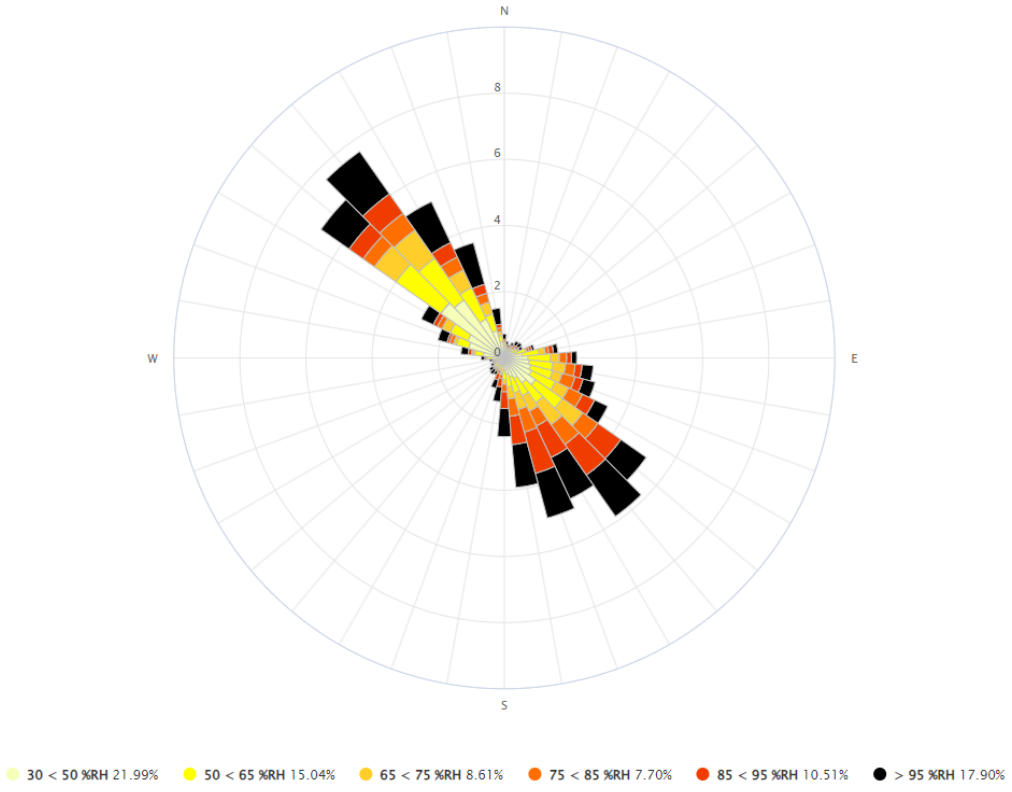
The results of wind speed and direction monitoring shows similar trends to previous years. During summer the winds are predominant from the south east and winter the northwest. Autumn and spring are typically transitional seasons with winds distributed between both northwest and south-easterly directions. From all of the wind roses it is evident the dominant wind direction for the YEM 2024 was from the north-west. **Figure 6** shows the wind roses generated for the site on a seasonal basis.



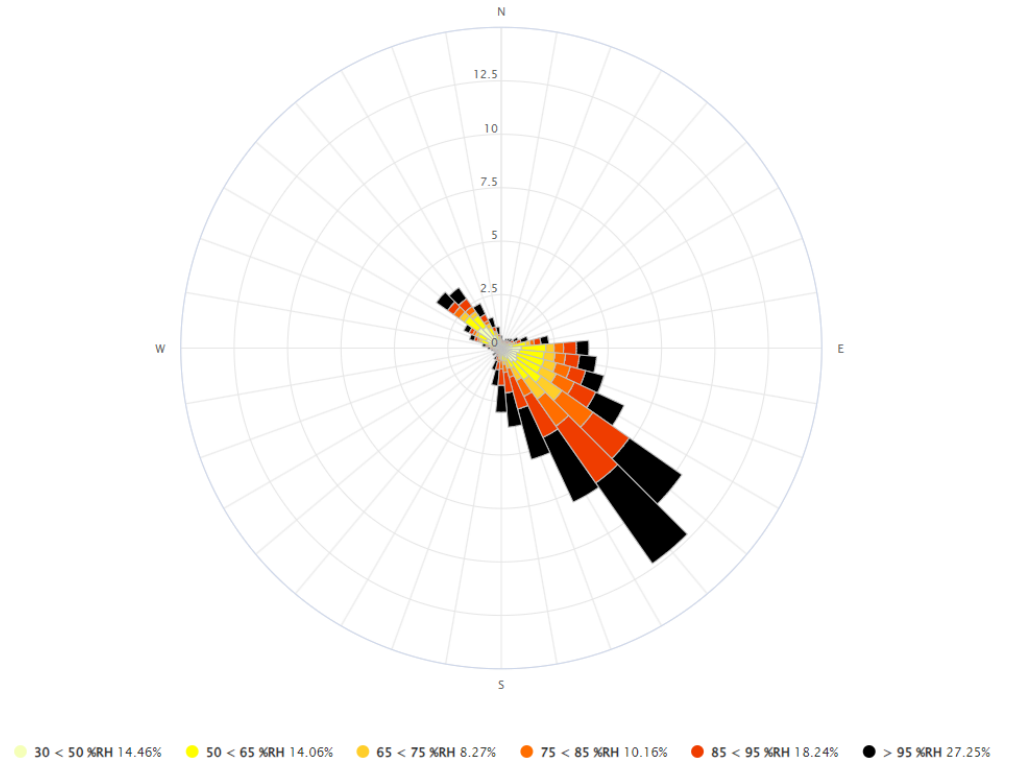
Autumn 2023


N
15
10
5
0
W
E
S
30 < 50 %RH 23.20%
50 < 65 %RH 21.40%
65 < 75 %RH 12.39%
75 < 85 %RH 10.98%
85 < 95 %RH 11.13%
> 95 %RH 17.74%

Winter 2023



Spring 2023



Summer 2024

Figure 6. Windrose for Rix's Creek YEM 2024

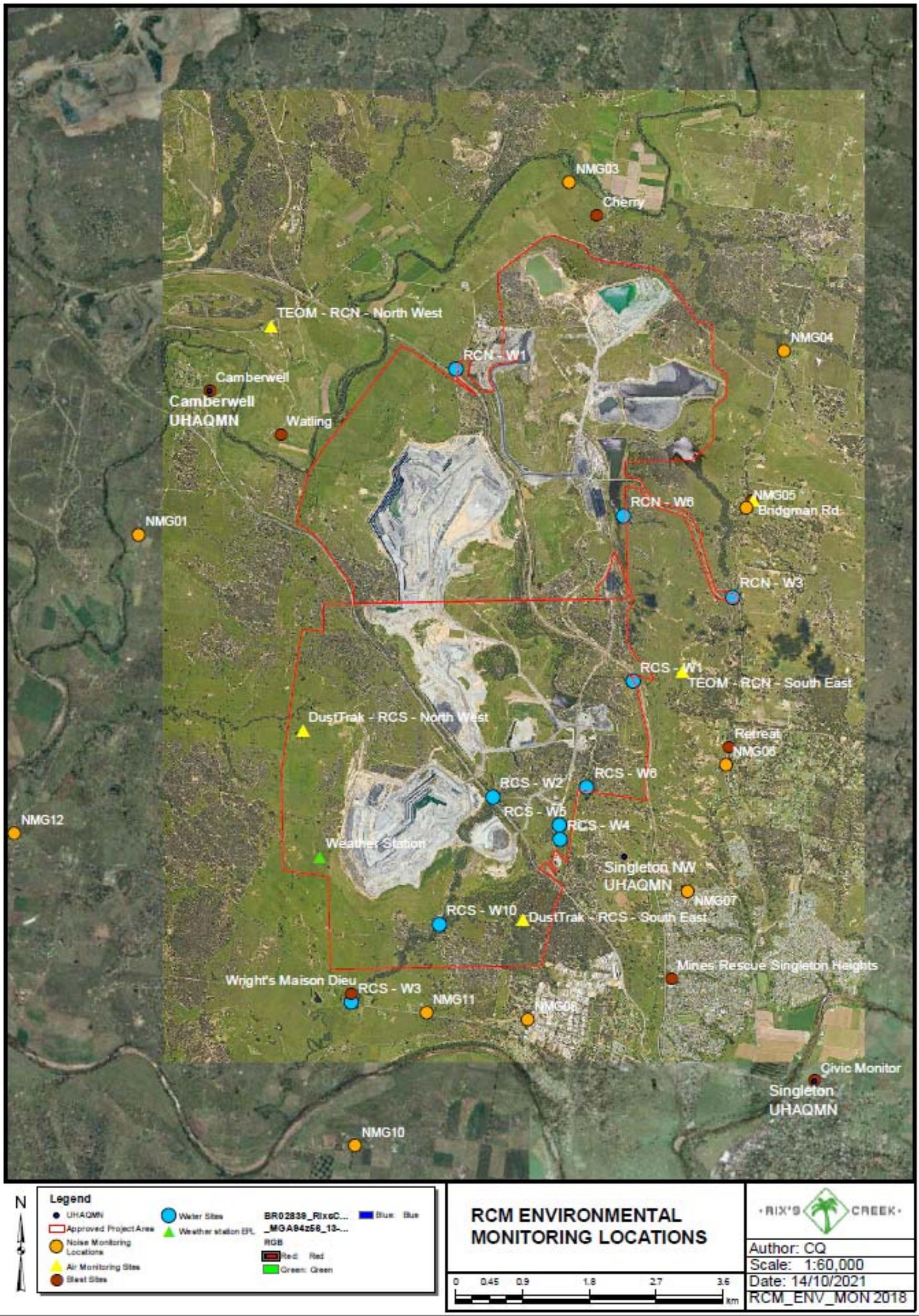


Figure 7. Rix's Creek Mine Compliance Environmental Monitoring Locations

6.2 Operational Noise

6.2.1 Environmental Management

The primary objectives of the RCM Noise Management Plan is to ensure compliance with legislative requirements, support procedures to manage and monitor noise emissions from the mine and provide management mechanisms to minimise the potential for noise from the mine to cause off site impacts were possible.

Residences surrounding RCM have been grouped generally according to the locality and local acoustic environment. These groupings are referenced in the relevant Enivironmental Assessments as Noise Assessment Groups (NAG).

The Noise Management Plan was updated on the 21/11/2023 to include controls around the installation and operation of evaporation fans at Rix's Creek North. DPHI approved the RCM Noise Management Plan on the 6/12/2023.

Rix's Creek EPL 3391 states that Rix's Creek must seek to ensure that its rail spur is only accessed by locomotives approved to operate on the NSW rail network in accordance with noise limits L6.1 to L6.4 in RailCorp's EPL (No. 12208) and ARTC's EPL (No. 3142) or a Pollution Control Approval issued under the former Pollution Control Act 1970. Rix's Creek Mine has received correspondence from ARTC and understands that each rail provider is required to meet their obligations under there respective EPL and that they must comply with conditions, which include use of approved locomotives from the EPA's list.

6.2.2 Environmental Performance

There were no externally reportable incidents relating to noise during the YEM 2024 reporting period.

A review of the project's environmental noise performance is described in the monthly attended noise monitoring compliance reports available on The Bloomfield Groups website:

https://www.bloomcoll.com.au/sustainability/environmental-management/rixs-creek-assessments/epl-monitoring

In accordance with our Noise Management Plan, Monthly compliance attended noise monitoring is conducted at zones where meteorological enhancement is indicated by a predictive noise model. The acoustic consultant develops a monitoring plan based on this meteorological modelling. Table 15 and 16 show results from the Independent Monthly Compliance Attended Noise monitoring, as conducted by SLR Consulting Australia Pty Ltd.

Table 15. Independent Monthly Compliance Attended Noise monitoring results ($L_{Aeq, 15\ Minute\ dB}$)

YEM 2024 RCM Laeq, 15 Minute dB															
Monitor- ing Location	Monitor- ing Period	RCN Criteria (Laeq, 15 minute dB)	RCS Criteria (Laeq, 15 minute dB)	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
NM01	Night	38	40				32	I/A	I/A	I/A		I/A	I/A	I/A	
NM03	Night	40	40	31		32	28	I/A	<30	27	33	33		37	
NM04	Night	37	42	<25	27	31	25	I/A	31	26	23	26		I/A	
NM05	Night	41	42	IA	33	33	27		33	I/A	23	33		I/A	25
NM06	Night	36	42	I/A	<25	34	<25		30	I/A	I/A		I/A	I/A	I/A
NM07	Night	35	40	I/A	30	34	I/A		31		I/A		I/A	I/A	I/A
NM08	Night	35	40	I/A	<30	32		38			I/A		I/A		I/A
NM10	Night	35	40												
NM11	Night	35	40		33			40				29	I/A		I/A
NM12	Night	35	40					I/A		30		I/A	34		I/A

IA = Inaudible; NM = Not Measurable, N/A Not Applicable

Table 16. Independent Monthly Compliance Attended Noise monitoring results ($L_{A1, 1\ Minute\ dB}$)

YEM 2024 RCM LA1, 1Minute dB															
Monitor-ing Location	Monitor-ing Period	RCN Criteria (LA1, 1 minute dB)	RCS Criteria (LA1, 1 minute dB)	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
NM01	Night	48	47				33	I/A	I/A	I/A		I/A	I/A	I/A	
NM03	Night	45	45	37		40	31	I/A	<30	35	40	40		36	
NM04	Night	49	47	<25	29	37	28	I/A	33	27	26	30		I/A	
NM05	Night	47	47	I/A	43	40	32		40	I/A	29	41		I/A	26
NM06	Night	48	47	I/A	<25	38	<25		34	I/A	I/A		I/A	I/A	I/A
NM07	Night	45	47	I/A	34	37	I/A		35		I/A		I/A	I/A	I/A
NM08	Night	45	47	I/A	33	36		42			I/A		I/A		I/A
NM10	Night	45	47												
NM11	Night	45	47		38			44				31	I/A		I/A
NM12	Night	45	47					I/A		31		I/A	43		I/A

IA = Inaudible; NM = Not Measurable, N/A Not Applicable

Based on the results shown in Tables 15 and 16, there were no non-compliances identified in the reporting period. Elevated results were identified during cooler periods between April to September and this is consistent with previous years results.

The summary of model predictions for noise levels in the Enviromental Assessment identified predictions for all the subsequent stages of NAG J (NM08) and NAG K (NM11) are less than LAeq(15 minute) 32 dB(A) under neutral atmospheric conditions. Noise modelling for all other NAG are less than or equal to LAeq(15 minute) 35 dB(A) under neutral atmospheric conditions. The results of noise modelling indicate that during neutral atmospheric conditions there would be minimal noise impacts and the operations of the Mine would be inaudible in many circumstances. This is consistent with the attended noise monitoring results for the YEM 2024.

6.2.3 Incidents and Complaints

Three (3) noise complaints were recorded during YEM 2024, an increase on the two (2) complaints that were recorded during the YEM 2023 period. Rix's Creek Mine investigate all complaints. All complaints that RCM receive are investigated with actions taken if required.

6.2.4 Further Improvements.

RCM employ an full time Environmental Technician and part time contractors that conduct noise monitoring during afternoon and night shifts when Rix's Creek Mine is operational. If the operational noise from the mine is recorded within 2dB of the noise compliance limits, the Open Cut Examiner (OCE) is notified and operations are changed to reduce operational noise.

A noise software package was developed in consultation with Global Acoustics and was introduced at Rix's Creek Mine to assess if low frequency or tonal noise penalties apply. This software is used in combination with the recently updated weather station which determines if the meteorological conditions and atmospheric stability criteria apply. This tool enables the Environmental Technician to assess real-time low frequency and tonal penalties to ensure that RCM comply with the Noise Policy for Industry (NPfI).

All equipment is checked and maintained on a regular basis to ensure noise attenuation equipment such as silencers and mufflers are operational. Installation of sound suppression will continue to be installed on new pieces of earthmoving equipment as committed in the Project Approvals prior to commencing work/s on-site.

Ongoing operation of a real time noise management monitor located near the NM05 (Bridgman Road) receiver continued during YEM 2024. The noise monitor can apply 1/3 octave low frequency and tonal noise penalties in real time in accordance with the Noise Policy for Industry Guidelines 2017 (NPFI). This system provides alarms when measured noise levels are within 2 dB of the noise criteria (Level 1 Alarm), above the noise criteria (Level 2 Alarm), or sustained over two 15 minute periods, (Level 3 Alarm). Each level of alarm requires action by either the noise technician or RCN washery operator.

Rix's Creek Mine continued working with Todoroski Air Sciences (TAS) to finesse the 3-D predictive noise model for the Mine. This model has been validated over a period greater than six years and to date noise enhancement has been identified at offsite locations in accordance with the model's forecast prediction.

The model continues to be upgraded from time to time as necessary. The model was upgraded during 2015 to include all offsite receptors (residences) and was again upgraded in 2016 to include the Rix's Creek North operation once purchased. During 2017 further upgrades to the 3-D noise model occurred, with areas of operational noise enhancement being highlighted in yellow within the open cut area. This provides Rix's Creek Mine with additional proactive tools to manage noise when enhancement is predicted by ensuring that the allocation of sound attenuated equipment is utilised in the yellow/orange highlighted areas.

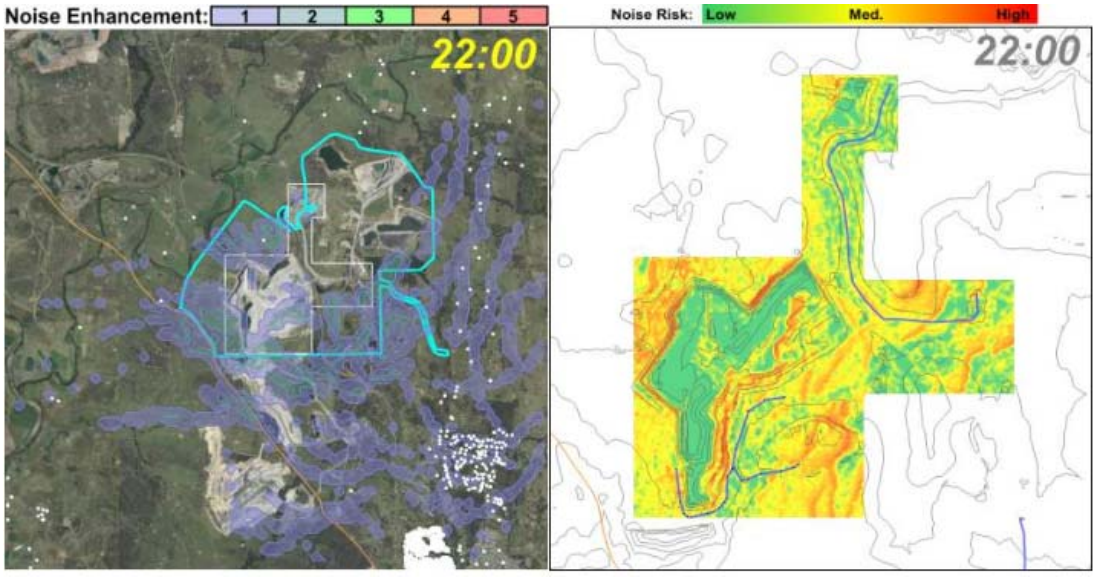


Figure 8. RCS and RCN predictive mine noise forecast models

*White dots indicate off-site receptors / residences closest to mining operation.

The use of the 3-D noise model to plan mining operations , has been successful in managing offsite noise amd operating in accordance with the NMP and EPL criteria.). An integral part of the Noise Management Plan is using real time attended monitoring in conjunction with the noise forecast model.. The monitoring results assist in calibration of the noise model and aid the production shift supervisor in determining suitable placement of the mines production units to keep mine noise levels within compliance limits.

6.3 Blasting

6.3.1 Environmental Management

The RCM Blast Management Plan incorporates the conditional requirements for Rix's Creek South and Rix's Creek North operations. In 2021 the Blast Management Plan was updated following the RCN Modification 9 which allows RCN operations to carry out 3 blasts per day across the northern and western mining areas and a maximum of 10 blasts per week onsite, averaged over a 12 month period.

The conditions specified in the Development Consents and Environmental Protection License require blasts to be designed to minimise air blast overpressure and ground vibration. Blasts are designed to ensure that there is less than 5% probability of exceeding an air blast overpressure of 115 $dB_{(Linear)}$ to a maximum of 120 $dB_{(Linear)}$ and vibration with peak particle velocity of 5 mm/sec to a maximum of 10 mm/sec at the closest residence (*not owned by the applicant outside the mining lease*).

During the year blasting in the West Pit was undertaken within the 500m exclusion zone as approved by NSW DPE under Sch2. Cond B18(b) of SSD 6300 dated 8/2/2020. RCM holds an approved procedure to close the Highway to traffic during blasting. The Company also has approval from the Roads and Maritime Services (RMS) to conduct closures of the Highway for blasting under a Road Occupancy License (currently ROL 1185380) – This approval is renewed annually.

Real-time wind speed and direction information is used in scheduling blasting operations to minimise offsite effects of air blast overpressure and dust. The Company is one of the joint venture partners in the Meteorological Sounding Group. This group has purchased equipment to measure wind speed, direction and temperature in the atmosphere. This data is then used to better predict the impacts of atmospheric conditions that can result in overpressure enhancement off site. The on-site weather station also has real-time data that can be viewed at any time by relevant site personnel. This weather station has the ability to alarm when conditions are not suitable for blasting i.e. wind speed currently greater than 10 m/s.

During YEM 2024 vibration monitoring of the cut and cover tunnel did not exceed 100 mm/sec. It is expected that as mining progresses towards the North at the West Pit, that vibration levels will increase at the cut and cover tunnel, however modelling suggests blast vibration will stay well below the 100mm/ sec limit.

All blasts are monitored to record air blast overpressure and peak particle velocity at residences most likely to be affected. The modelling of dust and fume associated with blasting commenced during March 2012 and is constantly validated using DustTrak and TEOM dust monitors as required. The NOx modelling shows various predicted outcomes and has continued to provide an integral part of Rix's blast regime during YEM 2024 and can be seen in Figure 9. The white dots on the model in Figure 8 are the closest residences/receptor's that can potentially be impacted via blasting.

Rix's Creek sends out an email and/or text message blast notification to nearby mines and nearby residents and impacted employees/contractors prior to all blasts that provides a figure of the location of the blast and the intended time of firing. Rix's Creek Mine also receives blast notifications from nearby mines which identifies the intended time and location of the blast so that coordination of blasts times can occur between mine sites. A formalised communication protocol has been developed with quarterly meetings being conducted among neighbouring mine sites during the reporting period.

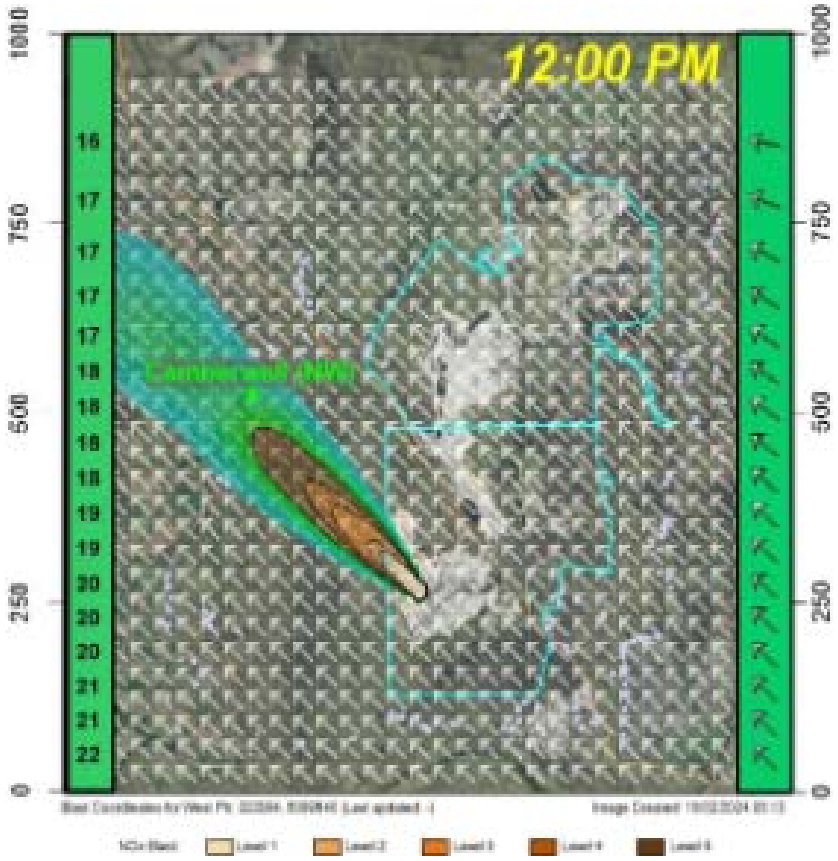


Figure 9. Blast Dust / Fume 'Plume' Model.

6.3.2 Environmental Performance

During YEM 2024 a total of 105 production blasts were initiated. 47 shots were fired in the Camberwell Pit at Rix's Creek Northern operations and 58 shots were fired in the West Pit at Rix's Creek Southern operations.

Rix's Creek North PA 08_0102 and Rix's Creek South SSD 6300 allow up to a maximum ofthree (3) blasts per day for each site, unless an additional blast is required following a blast misfire. A maximum of ten (10) blasts per week for each site, averaged over a 12 month period is also approved, This was complied with during the

YEM 2024 reporting period. All blasts fired at Rix's Creek Mine were carried out between 9am and 5pm Monday to Saturday. No blasts were fired on Sundays or public holidays in accordance with PA (08_0102) and SSD 6300 conditions.

Individual blast results for YEM 2024 are shown on the Bloomfield website at: https://www.bloomcoll.com.au/sustainability/environmental-management/rixs-creek-assessmen/epl-monitoring

Of the 105 blasts for YEM 2024 the fume ratings recorded were as follows:

Rating		A	B	C
0	77			
1		17	5	
2		4	2	
3				
4				
5				

Table 17. Blast monitoring criteria/compliance at individual monitoring sites for YEM 2024

Location	Operation	Air blast overpressure	Ground Vibration	Allowable Exceedance	Environmental performance	Key trends	Proposed management actions
Watling	Rix's Creek Mine	115	5	5% of the total number of blasts over a period of 12 months	Compliant	Nil	Nil
		120	10	0%	Compliant	Nil	Nil
Mines Rescue	Rix's Creek Mine	115	5	5% of the total number of blasts over a period of 12 months	Compliant	Nil	Nil
		120	10	0%	Compliant	Nil	Nil
Retreat	Rix's Creek Mine	115	5	5% of the total number of blasts over a period of 12 months	Compliant	Nil	Nil
		120	10	0%	Compliant	Nil	Nil
Wrights Residence	Rix's Creek Mine	115	5	5% of the total number of blasts over a period of 12 months	Compliant	Nil	Nil
		120	10	0%	Compliant	Nil	Nil
Camberwell	Rix's Creek Mine	115	5	5% of the total number of blasts over a period of 12 months	Compliant	Nil	Nil
		120	10	0%	Compliant	Nil	Nil
Cherry Residence	Rix's Creek Mine	115	5	5% of the total number of blasts over a period of 12 months	Compliant	Nil	Nil
		120	10	0%	Compliant	Nil	Nil

Bridgman Rd	Rix's Creek Mine	115	5	5% of the total number of blasts over a period of 12 months	Compliant	Nil	Nil
		120	10	0%	Compliant	Nil	Nil
Civic	Rix's Creek Mine	115	5	5% of the total number of blasts over a period of 12 months	Compliant	Nil	Nil
		120	10	0%	Compliant	Nil	Nil

The Rix's Creek South Continuation of Mining project identifies majority of mining proposed in the Project would occur to the north-west of the existing operations in the West Pit. This would move the centre of blasting to the North / North West, moving away from the Wright and Mines Rescue Monitors to reduce ground vibration impacts.

The environmental assessment modelled the peak levels for Wrights blast monitor in West Pit operations is 105dBL and a peak particle velocity level (PPV) of 3.4mm/s. This was not exceeded during the reporting period.

6.3.3 Incidents and Complaints

During the reporting period 105 blasts were initiated across Rix's Creek Mine.

On 12 September 2023 at 2:38pm, Rix's Creek Mine released a blast in West Pit operations at location WS10 LB S6. The blast recorded a single overpressure event at the Wrights monitor (EPA identification 7) of 124.9dB, exceeding the compliance limit of 120dB. No other Rix's Creek Mine blast monitors recorded elevated airblast overpressure results and no complaints were received from the event. Refer to Section 11 for detailed actions following incident.

No blast during the period exceeded the ground vibration criteria of 5mm/sec (5% of the total number of blasts over a calendar year) or 10mm/sec.

During the period no blasts recorded a fume rating greater than 2A. Blasts fired in RCS West Pit on the 17/1/2024 and 27/2/2024 recorded the highest fume rating during the period of 2A.
The blasts were fired under very low risk weather conditions and the low level fume did not leave the site boundary. Of the 105 blasts fired 77 did not have any visible fume.

During the reporting period a number of blasts were cancelled and rescheduled due to unfavourable weather conditions, which included rainfall, wind speed, wind direction, dust potential, fume potential and overpressure potential.

During the YEM 2024 reporting period, two (2) complaints were received in relation to blasting at Rix's Creek Mine. This is a decrease from the four (4) complaints were received for blasting for previous reporting period. Refer to Appendix 3 for complaint breakdown and actions taken.

6.3.4 Further Improvements

BCL is an active participant of the Terrock EnvMet Research Project. This project provides access to a prediction model for atmospheric enhancement for overpressure. This information is used to access the potential for overpressure enhancement due to the predicted atmospheric conditions throughout the day. This information is used to schedule blasting operations to minimise off site environmental impacts resulting from blast overpressure. The models (overpressure, fume and dust) are now capable to have predictive forecasting for atmospheric conditions two days ahead to further enhance blasting opportunities during ideal weather conditions. The models specifically include nearest receptors which are likely to be affected by blasting activities.

Rix's Creek have access to predictive weather models in which products are selected for blasting based on possible weather conditions prior to blasting. Blast products were continually be reviewed and trialled where thought beneficial throughout YEM 2024 to minimise fume emitted from blasting. Fume will continually be monitored on site to manage any onsite and offsite impacts in the case of a fume event resultant from a blast.

A small water cart is used for crusting drill cuttings from the drill and blast process. The watering of drill cuttings occurs on the shot and is also prioritised when unfavourable wind conditions are predicted.

6.4 Air Quality

6.4.1 Environmental Management

The Rix's Creek Mine Air Quality and Greenhouse Gas Management Plan (AQGGMP) details the dust management practices and the air quality monitoring network at Rix's Creek Mine.

On the 12/5/2021 the AQGGMP was updated following approval of RCN Modification 9.

The air quality criteria are listed in **Table 18**.

TEOM and DustTrak systems offer the vital advantage of real-time access to continuous air quality data as well as the upstream and downstream differentials across the site.

The following air quality monitoring and associated reporting will utilise:-

- 2 dust deposition gauges (DDG28 and DDG32);
- 3 TEOM's units to sample particulates less than 10 microns (PM10) in diameter via real-time / continuous monitoring (RCN North West, RCN South East and RCN North East);
- 2 DustTrak units which sample particulates less than 10 microns (PM10) in diameter via real-time continuous monitoring (RCS North West and RCS South East).

Table 18. Air Quality Criteria

POLLUTANT	STANDARD	PERIOD	AGENCY
TSP	[a,c] 90µg/m3	Annual average	EPA/DPHI
PM2.5	[a,c] 8 µg/m3	Annual Average	EPA/DPHI
	[b] 25 µg/m3	24 hour maximum (contribution)	EPA/DPHI
PM10	[b] 50µg/m3	24 hour maximum (contribution)	EPA/DPHI
	[a,c] 25µg/m3	Annual average	EPA/DPHI
[d]Depositional Dust	[a]4g/m2/month	Annual maximum total deposited dust level	EPA/DPHI
	[b]2g/m2/month	Annual maximum increase in deposited dust level	EPA/DPHI

a Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).
b Incremental impact (i.e. incremental increase in concentrations due to the development on its own).
c Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Planning Secretary.
d RCN MP 08_0102 ONLY. Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.

Dust Deposition Gauges

Two (2) Depositional Dust Gauges (DDG's) were sampled during the reporting period. The location of the DDG's are referred to in **Figure 7**.

The dust deposition gauges conform to the Australian Standard 2724.1- 1984 Ambient Air - Particulate Matter, Part 1 - Determination of Deposited Matter expressed as insoluble solids and ash residue. Gauges have 150 mm funnels located 2 metres above the ground.

Tapered Element Oscillating Microbalance (TEOM)

The approved AQGGMP has three (3) TEOMS which were reinstated at Rix's Creek North site during February

2016. PM10 is assessed for the purpose of real-time environmental management as defined by Standards Australia AS/NZS 3580.9.8.2008: Methods for sampling and analysis of ambient air – PM10 continuous direct mass method using a tapered element oscillating microbalance analyser.

The location of the TEOMS are shown in **Figure 7**.

DustTrak Monitors

Two DustTrak units sample particulates less than 10 microns (PM10) in diameter via real-time continuous monitoring. DustTrak monitors are located at the Rix's Creek Southern operations and are located toward the North West of the mining operations in West Pit (DustTrak RCS North West) while the other DustTrak unit has been relocated to the southeast of the West Pit rehabilitation (DustTrak RCS South East).

The location of the DustTrak monitors are shown in **Figure 7**.

Environmental controls employed to minimise dust generation includes the application of recycled mine water to haulage roads and areas with heavy use by machinery, application of recycled mine water to drill pads (i.e. fine cuttings) and sprinkler systems on coal stockpile areas and the surrounds of the washing plant.

Under adverse weather conditions the overburden removal and dumping operation is modified with dumping occurring either in pit or to areas not exposed to the prevailing winds, alternatively operations may be ceased until conditions are suitable. For blasting, information is used in a model to predict the potential for meteorological reinforcement of overpressure as well as directional travel of dust/fume from a blast. The model shows the likelihood which receptors that may be affected by the blast which in turn can alter the timing of the blast being initiated.

The network of ambient air quality monitors surround the mine operation and are positioned in areas representative of sensitive receptor locations and background air quality levels. The ambient monitoring data provides insight into the potential dust contribution due to the operations.

The Camberwell and Singleton Upper Hunter Air Quality Monitoring Network (UHAQMN) sites measure $PM_{2.5}$ as well as PM_{10}. The closest UHAQMN unit to the operation is the Singleton NW site measuring PM_{10}. The prevailing winds are predominately from the northwest during autumn/winter and southeast during spring/summer which indicate they are suitably located to measure any contribution from the Mine and can be used to further verify site monitoring results for PM_{10}.

During YEM 2024 a site-specific dust forecasting tool was used to predict the potential for dust emissions being created on site and affecting air quality. This forecasting tool uses predictive met-data to highlight times throughout the day the operation may be affected. Based on this, the operation can be modified before the high potential of dust to occur. This may include utilising increased supervisor inspections, additional water carts, re-schedule servicing of equipment, work lower in the pit, shut-down equipment or activate water sprays on stockpiles, where required.

15/02/2024																								
	12am	1am	2am	3am	4am	5am	6am	7am	8am	9am	10am	11am		12pm	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm
Wind Speed (m/s)	3.7	4.6	3.7	3.2	4.7	4.3	3.1	2.9	3.4	3.4	4.1	5.7	Wind Speed (m/s)	5.9	6.7	7.2	7.6	7.1	6.4	6.3	5.4	5.1	5.3	4.6	5.6
Wind Direction	SSE	SSE	SSE	SSE	SE	SE	SSE	SSE	SSE	S	SSE	SE	Wind Direction	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
Max 1-hour average PM_{10} concentration ($\mu g/m^3$)																									
North-West	5	7	7	6	3	3	4	5	2	4	2	3	North-West	3	3	3	2	3	3	3	6	7	9	3	9

16/02/2024													17/02/2024											
	12am	2am	4am	6am	8am	10am	12pm	2pm	4pm	6pm	8pm	10pm		12am	2am	4am	6am	8am	10am	12pm	2pm	4pm	6pm	8pm
Wind Speed (m/s)	4.8	3.1	3.2	2.0	1.1	1.7	1.7	6.4	8.6	7.6	6.3	5.4	Wind Speed (m/s)	2.4	2.3	1.4	0.9	0.9	1.4	1.6	7.5	4.8	1.3	2.7
Wind Direction	SE	SSE	SSE	SSE	NE	ESE	SSE	SE	ESE	ESE	ESE	SE	Wind Direction	SSE	SSW	SSE	S	W	WNW	SSE	SSW	SSE	SSE	W
Max 2-hour average PM_{10} concentration ($\mu g/m^3$)																								
North-West	8	11	11	8	3	2	2	2	1	2	3	3	South-East	0	0	0	4	4	5	2	0	0	6	60

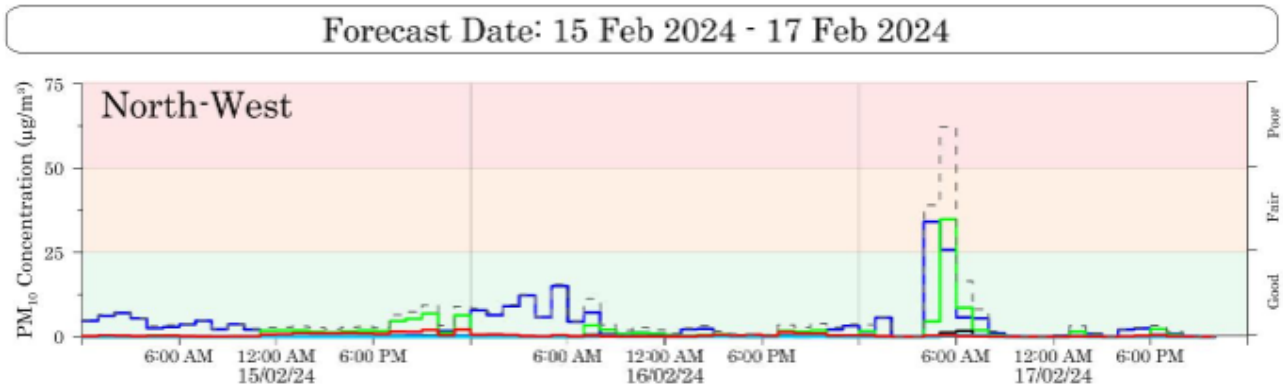


Figure 10. Example of dust forecasting tool to assist operations during YEM 2024

6.4.2 Environmental Performance

Insoluble Solids

During the YEM 2024 reporting period both dust depositional gauge DDG28 and DDG32 complied with the deposited dust criteria of an annual average result of less than 4 gm/m^2/month. The YEM 2024 average of DDG28 was 1.9 g/m^2/month while the average of DDG32 was 1.8 g/m^2/month, both slightly raised compared to YEM 2023 previous reporting period averages of 1.6 and 1.5 g/m^2/month respectively.

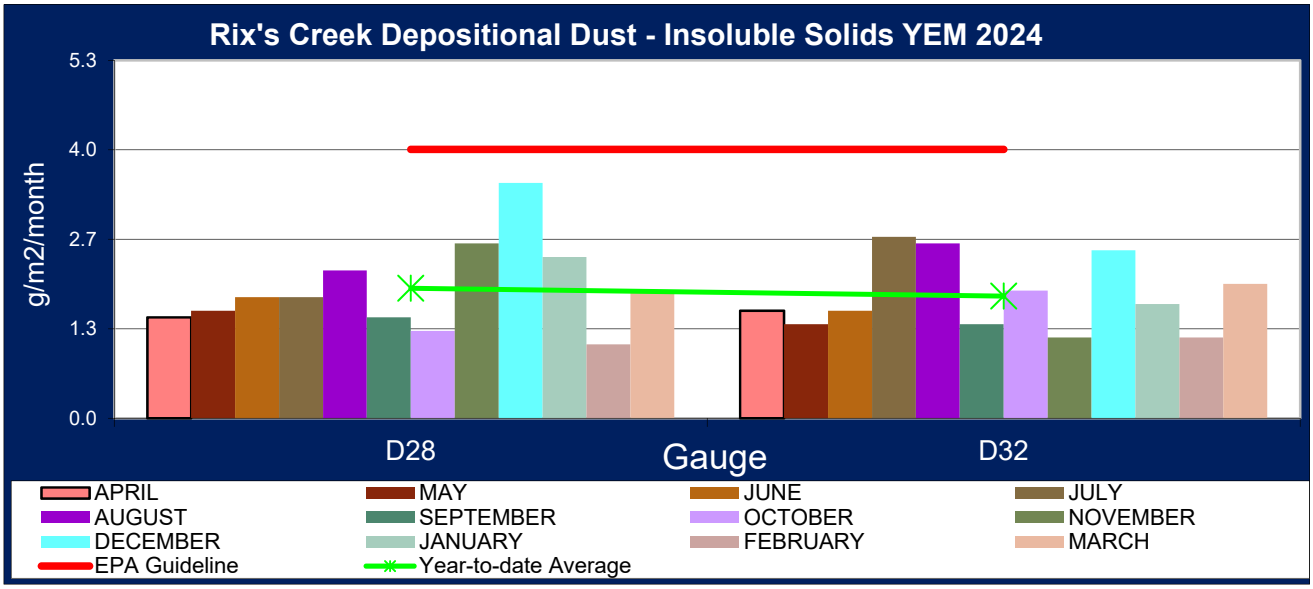


Figure 11. Rix's Creek Insoluble Solids Dust Deposition YEM 2024

Table 19. Dust Monitoring Sites

SITE	LOCATION
28	Off New England Highway north-west of lease. Relocated August 2011
32	Pre-School Gardner Circuit

In YEM 2024 there were no exceedances of the average result of 4 g/m^2/month for either DDG28 and DDG32. **Figure 11** displays the individual monthly insoluble solids deposition rates for each gauge and annual average deposition result in g/m2/month. There were no contaminated samples recorded in YEM 2024.

Particulates Less Than 10 Micron

During the YEM 2024 reporting period, the North West, the South East and North East RCN TEOM did not exceed the 24 hour PM10 contribution from Rix's Creek Mine operations.

The monthly averages and 12 month rolling averages are shown in **Figure 12.** The RCN North West TEOM recorded an annual average of 18.7ug/m3**.** The South East RCN TEOM recorded an annual average of 18.2ug/m3 while the RCN North East TEOM recorded a annual average of 15.5ug/m3.

Due to below average rainfall in YEM 2024 all annual PM10 averages were slightly elevated compared with YEM 2023's recorded averages (RCN North West 17.1ug/m3; RCN South East 14.0ug/m^3 and RCN North East 12.6ug/m^3). The RCN North West TEOM recorded moderate monthly averages for YEM 2024. No month in YEM 2024 recorded above average rainfall during the whole reporting period.

When the Rix's Creek North air quality results for YEM 2024 are compared to the 2009 Environmental Assessment modelled results for year 6 part pit extent of the operations, it was determined that the annual average at the RCN North West TEOM (17.1ug/m3) was much lower than the EA prediction at the mine owned residence ID 85 (27 ug/m3), which is where the location of the RCN North West TEOM is located. The RCN South East TEOM (14.0ug/m3) and RCN North East TEOM PM10 (12.6ug/m3) averages were slightly below the 2009 EA predictions for year 6 part pit extent operations.

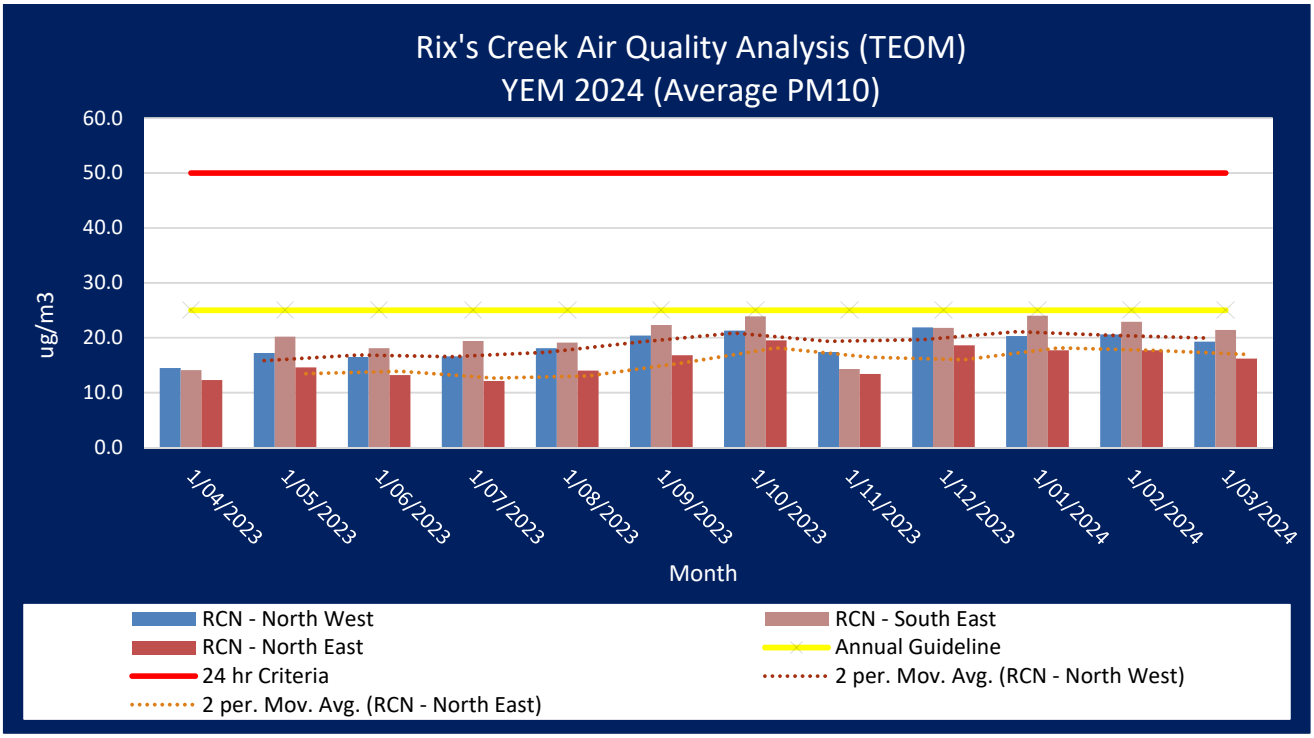


Figure 12. PM10 Micron Monthly and Rolling Averages YEM 2024 - TEOM

The RCM dusttraks for the YEM 2024 period both remained below the Annual Guideline of 25ug/m3 with the South East dusttrak recording its highest average reading of 18.0ug/m3 in December 2023 with prevailing Southerly winds for the month. The North West dusttrak also recorded its highest monthly average reading of 18.8ug/m3 in December 2023 with prevailing Southerly winds.

The average for RCS North West DustTrak in YEM 2024 was 12.9ug/m3 and RCS South East DustTrak recorded an average result of 12.5ug/m3. When compared to the modelling predictions from the 2014 Rix's Creek Environmental Assessment (EA) for year 2024, the nearest privately owned receptor), ID 173 to the RCS North West DustTrak modelled 39ug/m3 for the YEM 2024 period. Receptor ID 140, which is the closest private receptor to the RCS South East DustTrak unit modelled 21ug/m3. Both DustTrak units were below the 2024 predicted modelling results in the 2014 Rix's Creek EA.

The Camberwell UHAQMN monitor recorded an annual average of 20.9ug/m3 for the YEM 2024 reporting period, an increase from 16.9ug/m3 recorded for the YEM 2023 reporting period. The Singleton North West UHAQMN monitor recorded an annual average of 21.9ug/m3 for the YEM 2024 reporting period, an increase from 16.1ug/m3 recorded for the YEM 2023 reporting period. This can be attributed to YEM 2023 receiving a much higher rainfall than the YEM 2024 period.

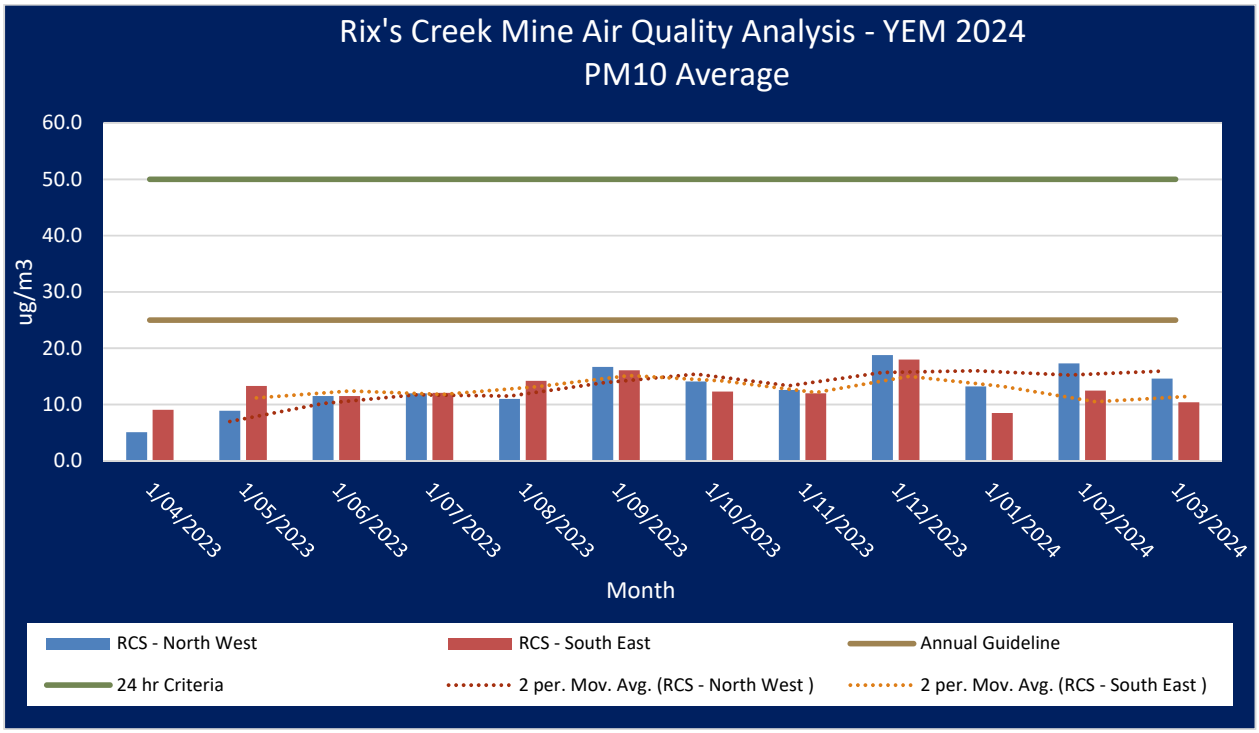


Figure 13. PM10 Micron Monthly and 15 Mth Rolling Averages YEM 2024 – DustTrak

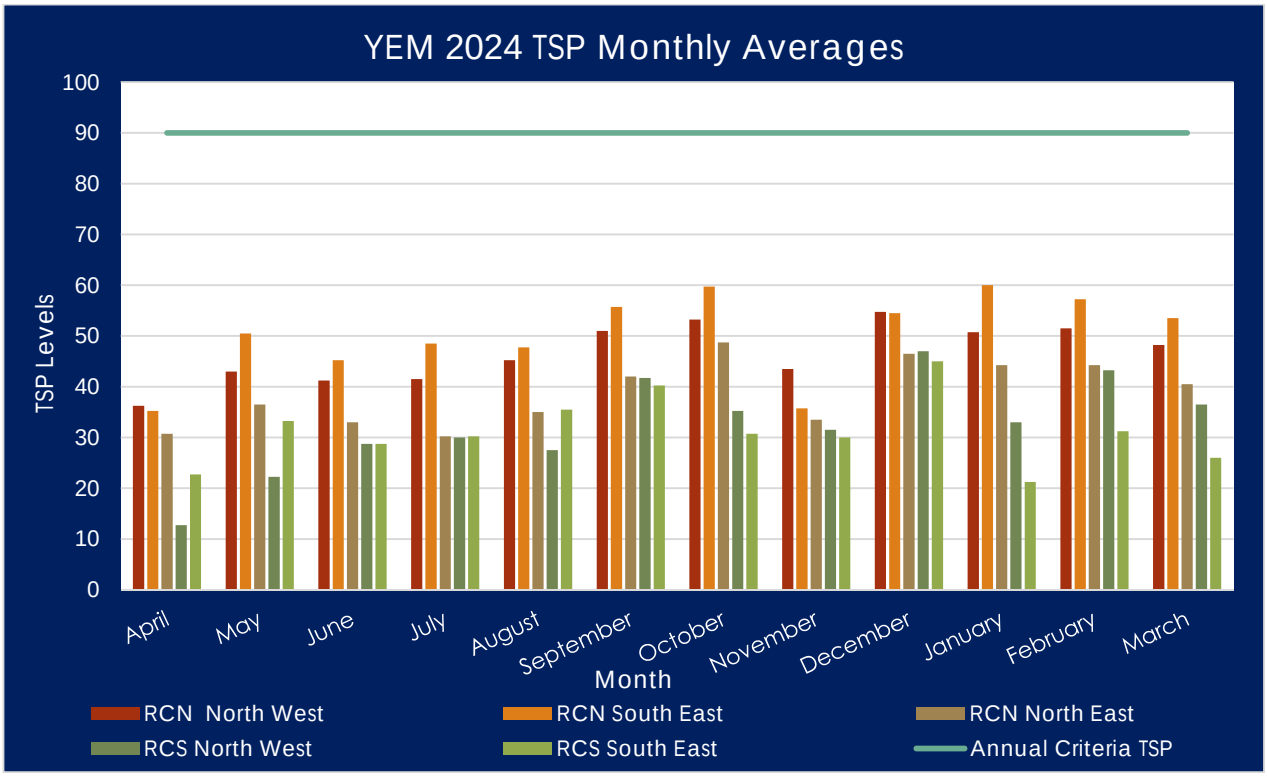


Figure 14. Total Suspended Particulate Monthly Averages for YEM 2024

Total Suspended Particulate matter refers to the total dust particles that are suspended in the air and nominally defined with an upper size range of 30 micrometres (µm). TSP levels are inferred from the measured PM_{10} data by calculating that the TSP level is 2.5 times the measured PM_{10} level. This inference is derived from measurements in the report '*Particle size distributions in dust from open cut mines in the Hunter Valley*' (SPCC, 1986). The results for YEM 2024 have remained below the Annual Criteria of 90µg/m^3 at all five monitoring points.

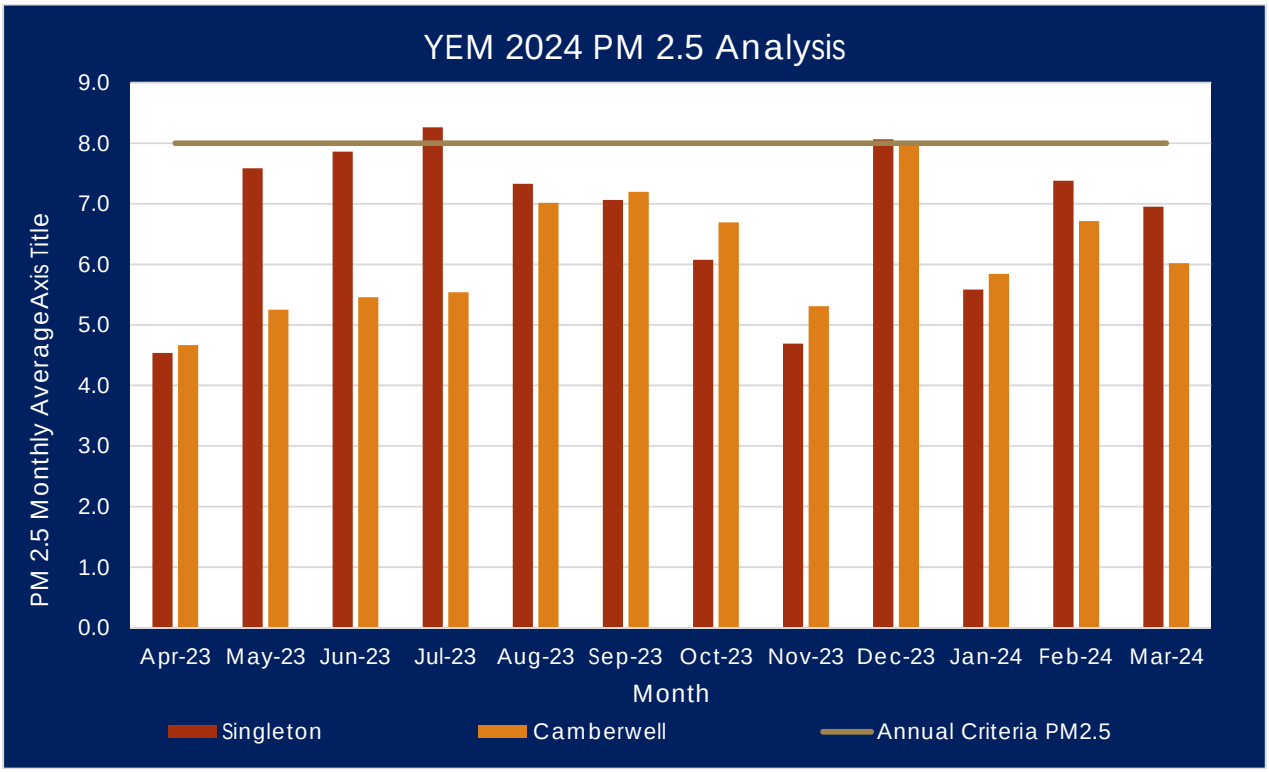


Figure 15. Monthly Particulate Matter 2.5 Analysis for YEM 2024

Particulate Matter 2.5 refers to particulate matter with an aerodynamic diameter less than 2.5µm. $PM_{2.5}$ is a measurement of the regional airshed and is reflective of air quality over a larger area than direct source emissions as specific upstream and downstream mine site contributions such as PM_{10}. In accordance with Schedule 3 Condition 27 (d) of the RCN Project Approval ad Schedule 2 B22 SSD 6300 data has been sourced from the Upper Hunter Air Quality Monitoring Network (UHAQMN) that was used in Figure 15.

During the YEM 2024 period there were four (4) occurences where the 24 hour PM10 criteria of 50ug/m3 was exceeded at individual dust monitors. **Table 20** shows the assessment that was undertaken to determine the incremental impact from Rix's Creek Mine. On the 19 and 20 of December, Rix's Creek Mine experienced predominant South to sou-westerly winds. There was a -2.9ug/m3 contribtution on the 19/12/2023 and a -20.4ug/m3 contribution on the 20/12/2023 from Rix's Creek Mine operations. UHAQMN returned lower readings for these two days, especially on the 20/12/2024.

On the 15/02/2024 the RCS NW Dusttrak recorder a excessively high reading of 53.6ug/m3, when compared with the RCS SE Dusttrak and surrounding UHAQMN readings which may point to and/or identify an abnomily or contaminated reading. The predominate wind direction was Sou-easterly on this day.

Table 20. Calculation of Incremental Impact of PM10 24 Hour Emissions on Air Quality by Rix's Creek South Dusttraks. (Schedule 3 Condition 22.Table 10 (b)).

Date	RCS SE Dusttrak 24 Av (ug/m3)	RCS NW Dusttrak 24 Av (ug/m3)	Up / Down stream Differential	Predominant Wind Direction	Av Max Wind Speed (m/s)	Singleton UHAQMN 24 Av (ug/m3)	Camberwell UHAQMN 24 Av (ug/m3)
19/12/23	55	52.1	-2.9	206.4	4.6	39	39.3
20/12/23	59.7	39.3	-20.4	165.5	4.2	14.3	14.3
15/2/24	17.3	53.6	36.3	158.7	5	12.9	13.2

On the 19/09/2023 Rix's Creek Mine experienced predominant NW winds. The assessment of the RCN NW TEOM and RCN SE TEOM identified a contribution of 31.5ug/m3 on the 19/09/2023 from Rix's Creek Mine operations. It must be noted that the UHAQMN readings from Camberwell and Singleton show similar raised levels of 47 and 43 respectively for the day. See **Table 21** below.

Table 21. Calculation of Incremental Impact of PM10 24 Hour Emissions on Air Quality by Rix's Creek North TEOM's. (Schedule 3 Condition 22.Table 10 (b)).

Date	RCN NW TEOM 24 Av (ug/m3)	RCN SE TEOM 24 Av (ug/m3)	Up / Down stream Differential	Predominant Wind Direction	Av Max Wind Speed (m/s)	Singleton UHAQMN 24 Av (ug/m3)	Camberwell UHAQMN 24 Av (ug/m3)
19/9/23	24.1	55.6	31.5	318.5	5.4	43	47

6.4.3 Routine Downtime

From the EPA guidance note, where continuous monitoring is to be undertaken, the system must be operated and maintained in a proper and efficient manner, ensuring that the availability of the monitoring system is maximised. After allowing sufficient down time for routine maintenance and calibrations, a continuous monitoring system should be able to achieve at least a 95% availability. RCM compliance TEOM's and Dust Trak units recorded availability over 98% during the reporting period.

Minor downtime of TEOMS occurred below:

29/04/2023 – 01/05/2023 RCN NW TEOM lost power due to Electrical Storm, power restored on Monday by the Environment Officer

18/06/23 – 19/06/2023 RCN NE TEOM lost power due to power outage, power restored on Monday by the Environment Officer.

21/07/2023 – 24/07/2023 RCN NE TEOM froze, Environment Officer rebooted system Monday morning

16/09/2023 – 18/09/2023 RCN NE TEOM froze, Environment Officer rebooted system Monday morning

02/10/2023 – 03/10/2023 RCN NW TEOM froze, Environment Officer rebooted system Tuesday morning

10/10/2023 – 11/10/2023 RCN NW TEOM froze, Environment Officer rebooted system Wednesday morning

20/10/2023 – 23/10/2023 RCN NW TEOM froze, Environment Officer rebooted system Monday morning

27/11/2023 – 28/11/2023 RCN NW and SE TEOM's calibrated

27/11/2023 – 29/11/2023 RCN NE TEOM calibrated

RCS Northwest and Southeast Dusttraks recorded high monthly maximums in December which appears to be due to condensation within units

RCS Northwest recorded high monthly maximums in February which appears to be due to contamination in unit

10/03/2024 – 13/03/2023 RCN SE TEOM went offline due to electrical supply issues, Electricians & Maintenance contractors restored power 13/03/2024.

6.4.4 Further Improvements

The Rix's Creek Mine real time air quality monitoring network has been upgraded and integrated with the sites Environmental Monitoring and Management Teledata system. This allows both the environmental team and contracted environmental consultants to identify when a machine is malfunctioning, with the aim to reduce downtime of air quality units at Rix's Creek.

6.5 Biodiversity

6.5.1 Environmental Management

Rix's Creek North

The Rix's Creek North Biodiversity Management Plan (BMP) was approved by DPE. The objectives of the Biodiversity Management Plan are to rehabilitate, revegetate and manage land for biodiversity within the biodiversity offset areas (BOA's) and the mine site during and post mining.

Efforts continue with the NSW Biodiversity Conservation Division (BCD) to finalise the Conservation Agreements for the Rix's Creek North Martins Creek, Bridgman, Southern and Northern Biodiversity Offset Areas. During October 2020 the offset areas were inspected by BCD and further progress has been made with the agreements. The draft agreements are currently with BCD to be finalised. RCM continues to work toward finalisation of the agreement.

During 2020, an independent audit as required under Sch. 3 Cond.41 of PA 08_0102 was undertaken of the BOA's This audit report was provided to DPE on the 25 August 2021. During 2025, a second independent audit will be undertaken of the BOA's.

Rix's Creek South

In accordance with Schedule 2, Condition B43 of SSD 6300, Bloomfield Collieries are required to retire credits to fulfil the requirements of the condition.

To fulfil the credit requirements TBG established two Biodiversity Stewardship Agreements (BSA) with the NSW Biodiversity Conservation Division . The two BSA's established by TBG created 97.39% of the credits required for SSD6300 . Other credits required for the Project included the purchase of credits of HU962- Zone 5:Grey Box grassy open forest of the central and lower Hunter Valley (PCT 1748) from the market and credits from the Biodiversity Conservation Fund of HU818- Zone 10: Narrow-leaved Ironbark – Grey Box – Spotted Gum shrub – grass woodland of the central and lower Hunter (PCT2150).

All biodiversity credits required for the Project have now been retired which was acknowledged by DPHI on 5 April 2024.

The Berewin Biodiversity Stewardship Agreement ID number BS0028, and the Pinkerton Biodiversity Stewardship Agreement ID number BS0087 continue to be managed by TBG as required under the BSA Management Plans.

The Rix's Creek South Biodiversity Management Plan was submitted on the 17/8/2020 and was subsequently reviewed and approved by DPE on the 23/12/2020.

6.5.2 Environmental Performance

The ecological monitoring of Rix's Creek North biodiversity offset areas is prescribed in Section 2.7 – Flora and Fauna Monitoring of the Biodiversity Management Plan (BMP) 2018 – 2020 (AECOM, 2017). Components relevant to biennial monitoring at Rix's Creek North include:

- Inspection of installed nest and roost boxes for a variety of tree hollow dependent fauna, including the threatened Brush-tailed Phascogale, Squirrel Glider and honeybees;
- Diurnal and nocturnal surveys along 6 designated transects for the threatened and protected species;
- Monitoring of feral predators by use of remote infra-red cameras, presence of impact / damage, sightings and scats, and
- Comprehensive surveys for all fauna groups conducted in 2018 and 2020, then every 3 years.

Nest box usage across the offsets varied in 2022, with a high proportion of glider style and possum style boxes being utilised. However, the high usage is due to the loss of many of the boxes due to natural decay and damage from falling tree branches. Those boxes that remain are heavily utilised, particularly in offset areas with low abundance of natural tree hollows. During the survey period, 3 species were recorded utilising nest boxes, the Brush-tailed Phascogale, Squirrel Glider and Common Brushtail Possum. Many additional boxes contain the characteristic nests constructed by each species. No evidence of microbats were recorded in the installed nest boxes specific to the group.

During July 2023, 69 nest boxes were replaced which included 23 glider /phascogale type, 10 small bird type, 22 microbat type and 14 possum / large parrot type.

Bird census counts conducted at each of the 6 monitoring sites in 2023 recorded species diversity of 34 native and 2 introduced species. The total number of species recorded in 2023 is significantly lower than that recorded in 2020, in which 68 native bird species were recorded. The lower count in 2023 may have been influenced by absence of flowering events in native trees, with low diversity and abundance of some bird groups, particularly honeyeaters. The total bird species diversity recorded in Rix's Creek North biodiversity offsets since the initial surveys in 2004 is 123 bird species, which compares to 52 bird species recorded in 2004 and 2007 EIS surveys.

Seventeen native and 2 introduced mammal species were recorded in the Rix's Creek biodiversity offset areas in 2023. Mammals were recorded from a combination of trapping, spotlight searches, field camera monitoring, echolocation call recordings and opportunistic observations. Two threatened mammal species, the Brush-tailed Phascogale and Squirrel Glider, were recorded by spotlight search and inspection of nest boxes. Monitoring of feral or pest species by remote cameras recorded Fox and Black Rat. The native Dingo was also recorded, but both larger predators were recorded in low abundance. The Fox and Dingo were only recorded on once each from 68 continuous monitoring days, suggesting low abundance.

A total of 5 threatened species (2 bird species and 3 mammals) were recorded during surveys in 2023. All 5 threatened species have previously been recorded in the offsets.

Biennial flora and fauna monitoring will be undertaken in YEM 2025.

6.5.3 Reportable Incidents

No external reportable incidents relating to flora and fauna management occurred during the YEM 2024 reporting period.

6.6 Aboriginal Heritage

6.6.1 Environmental Management

In accordance with SSD 6300 the Rix's Creek South Aboriginal Cultural Heritage Management Plan (ACHMP) was submitted on the 25/5/2020 to the Biodiversity Conservation Division (BCD) and DPIE for approval. On the 2/9/2020 the ACHMP was approved by BCD and DPIE.

In accordance with the Rix's Creek North Project Approval (08_0102) and Rix's Creek South Project Approval (SSD 6300) an Aboriginal Cultural Heritage Management Plan sets out the procedures for the protection of Aboriginal sites as well as the salvage and care of Aboriginal objects found within the operational activities. Additional objectives of the Aboriginal Heritage Management Plan are:

- To establish an ongoing Aboriginal stakeholder consultation process;
- To describe the manner in which certain Aboriginal sites will be salvaged;
- To provide a summary research design and work plan for the sub surface excavation of select sites and areas; and
- To describe a program for Aboriginal site survey and assessment in areas not addressed by the respective EA's.

The Aboriginal Heritage Management Plan also outlines the importance of ongoing consultation with Aboriginal stakeholders during mining. All staff and contractors as part of a site induction are provided with information on what constitutes an artefact and what to do if an item of Aboriginal heritage is located.

6.6.2 Environmental Performance

During YEM 2024 no Archaeological excavation and salvage were undertaken, in accordance with the Aboriginal Cultural Heritage Management Plan (ACHMP) and Salvage Management Plan requirements for SSD 6300 Rix's Creek South Continuation of Mining Project.

6.6.3 Reportable Incidents

There were no reportable incidents during the YEM 2024 period.

6.7 Non-Aboriginal Heritage

6.7.1 Environmental Management

The Historic Heritage Management Plan (HHMP) forms part of a series of Environmental Management Plans for RCM. This HHMP is applicable to RCS only and is the primary tool that will be utilised to manage items of historical significance predicted to be impacted by the development of RCS in accordance with SSD 6300. The HHMP was submitted for consultation and review on the 21/08/2020. After two additional amendments the HHMP was approved by DPIE on the 23/12/2020.

The management of Historical Heritage at RCN is managed under a separate Heritage Management Plan Rix's Creek North (Bloomfield, 2016).

6.7.2 Environmental Performance

A specialised consultant was engaged to develop a Coke Oven management measures plan. The plan will be used by the RCM Environment Department to manage the coke ovens to ensure that the cultural heritage values of the location are maintained. The Plan will also provide appropriate management in relation to the auxiliary features. Procedures within this Plan will be used by contractors engaged by RCM to carry out works within the buffer area of the coke ovens.

6.7.3 Reportable Incidents

There were no reportable incidents in relation to non-aboriginal heritage during the YEM 2024 reporting period.

6.7.4 Further Improvements.

The program of protection of the Coke oven area and other known natural heritage sites will continue. Annual inspections are undertaken of the areas with known heritage. Any weeds identified will be sprayed. Vegetation maintenance may be required as necessary and fencing and signage are checked for adequacy. Implementation of the Management Measures, Rix's Creek Coke Ovens and Associated Works will be undertaken in accordance with timelines identified in the approved RCS Historic Heritage Management Plan.

SECTION 7 WATER MANAGEMENT

7.1 Rix's Creek Setting and Context

7.1.1 Geology

Local Geology

The Project is confined within a basin-like north–south trending syncline that hosts the Permian coal seams of the Foybrook Formation that are part of the Whittingham Coal Measures. The syncline is approximately 8 km long by 3 km wide and is bounded by the Camberwell and Darlington Anticlines. The syncline is asymmetrical, the western limb generally dipping at a steeper angle than the eastern limb. The syncline is also locally double-plunging forming the synclinal basin structure centred on the Rix's Creek operations. North of the Rix's Creek mining lease, the syncline plunges to the north.
The major coal seams identified in the Rix's Creek syncline are (in descending stratigraphic order):

- Lemmington Seam
- Pikes Gully Seam
- Arties Seam
- Liddell Seam
- Barrett Seam
- Hebden Seam.

The seams typically out-crop within the syncline, with the outcrop of Barrett and Hebden seams to the east, west, and south, marking the limit of the mineable resources. The target coal seams vary widely throughout the area and often occur as several dispersed splits, separated by interburden sediments that comprise alternating sandstone, siltstone, conglomerate, mudstone and shale, as well as occasional minor coal seams. The interburden between the Barrett and Upper Hebden seams increases to more than 20 m in the northern and western regions, rendering the Upper Hebden seam uneconomical to mine.

7.1.2 Hydrogeological Setting

Conceptual Hydrogeological Model

The conceptual hydrogeological model for Rix's Creek is relatively simple in that the basin-like structure of the Rix's Creek Syncline acts to isolate the Coal Measures from the broader regional hydrogeological regime, with little groundwater interaction through the bounding low permeability siltstones.

The basin-like structure as defined by the base of the Hebden Seam (and upper surface of the underlying siltstone basement rock of the Saltwater Creek Formation) is depicted on Figures 17 and 18 (below).

The limbs of the anticline have a relatively shallow dip on the eastern limb with the western limb dipping at a much steeper angle. The syncline axis also plunges from the north and south. The lowest point of the Coal Measures in the synclinal basin is approximately -130mAHD.

Although geologically more complex on the local scale due to the splitting and merging of multiple minor seams, the aquifer system at Rix's Creek has been simplified and represented by a layer cake style system, with the layer geometry reflecting the synclinal basin structure. Within the layer cake, the major coal seams represent the main aquifers, with the interburden units acting as low permeability aquitards between the aquifers. Within the coal seam aquifers, preferential groundwater flow is along the bedding. Large scale groundwater flow

vertically between coal units is impeded by the low permeability interburden units consisting of siltstones, sandstones, tuffs and shales.

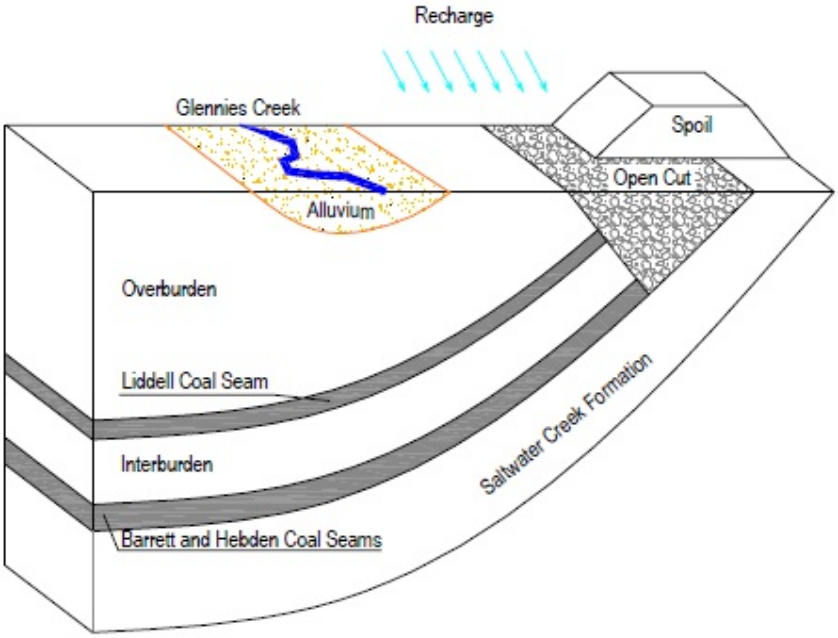


Figure 16. Conceptual Hydrogeological Model of the Rix's Creek Syncline area

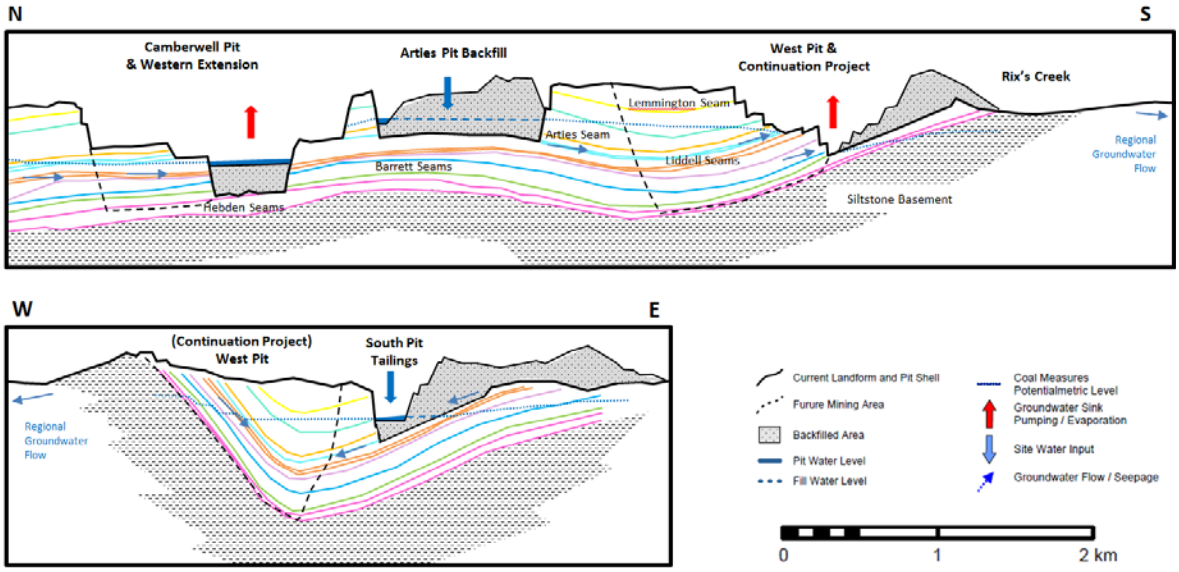


Figure 17. Conceptual Hydrogeological Cross Section

Aquifer Recharge

Rainfall recharge and infiltration will occur on remnant regolith areas, as well as rehabilitated mine areas, and direct rainfall to open cut areas. A degree of enhanced recharge and infiltration will also occur from the Old North Pit water storage and the deposition of tailings slurry in South Pit (although tailings seepage is anticipated to be a minor contributor to the overall water balance).

The lack of water level response observed at shallow monitoring bores in the creek alluvial system, located within the limit of Coal Measures outcrop, demonstrates the disconnection of the shallow regolith and alluvial aquifers from the deeper groundwater regime. It also shows that the shallow aquifers in these locations are locally reliant on direct rainfall recharge, and that this has not been diminished by the ongoing mining operations

Hydrological Setting

Figures 16 and 17 gives an indication of the approximate extent of the surface water catchments draining to the various storages within the Rix's Creek sites. In the RCN area, the eastern portion of the Falbrook Pit area intercepts runoff from the Reedy Creek catchment. Several diversion banks with excavated channels are used to divert clean catchment runoff around or through areas disturbed by mining operations.

In the RCS area, the Arties Pit, West & South Pit are surrounded by natural landforms that slope inwards towards the active mining area which directs any runoff over disturbed areas to flow back towards the pits. Clean water diversion structures have been installed to divert clean water away from active pits in average rainfall conditions.

In the vicinity of the mine footprint, all clean water flowing through or around the mine site area finds its way into either Glennie's Creek or Rix's Creek and ultimately into the Hunter River.

The catchment areas and diversion structures are progressively changing with the ongoing excavation of approved mining areas – and are adapted and maintained to enable the outcomes described above.

Groundwater Dependent Ecosystems (GDE's)

The proximity of GDEs to the Project area has been assessed by reviewing the Water Sharing Plan (WSP) and the Groundwater Dependent Ecosystem Atlas (Bureau of Meteorology, 2012). The findings have confirmed that there are no identified GDEs in the vicinity of the Project (RCS and RCN).

Most of the existing mine footprint is situated up hydraulic gradient of Rix's Creek and there are no alluvium deposits associated with the creek in the immediate vicinity of the mine. Surface water monitoring data (EC and flow observations) obtained from the creek shows the water to be relatively fresh (EC <200 µS/cm) and flows to be occasional, which suggests that the flow within the Creek is almost entirely derived from surface water run-off.

As there is no alluvium in the RCS mining area and no apparent base flow contributions, the pumping or interception of groundwater with the Permian Coal Measure aquifer from current or future mining activities is unlikely to impact upon on creek flow volumes in the regolith/alluvial aquifer system. The only risks to the creek therefore relate to water quality impacts associated with dirty water runoff.

7.2 Water Licences

Rix's Creek has the following active groundwater licences:

Table 22. Rix's Creek Water Licences

Water Licences					
	Number		**Category**	**Volume**	**Purpose**
Natural Resource Access Regulator	WAL41500		Mining	100 (ML/yr)	Open Cut (dewatering groundwater) Hard Rock
	WAL 41555		Mining	100(ML/yr)	Open Cut (dewatering groundwater) Hard Rock
	WAL 40777		Mining	305 (ML/yr)	Open Cut (dewatering

					groundwater) Hard Rock
	20BL170864		Mining	100(ML/yr)	1 x Bore (dewatering groundwater

7.2.1 Water Management

In January 2019 the RCM Water Management Plan (WMP) was approved combining both RCN and RCS to rationalise and combine the monitoring programme. This YEM 2024 water review uses the monitoring programme outlined in RCM combined WMP. The RCM combined WMP with inclusion of the SSD6300 conditions was approved 16/3/2021. A review of the WMP commenced during YEM24. DPHI has requested additional updates which will be addressed as part of the document review.

A static water balance was calculated for YEM 2024 providing information on inputs and outputs for RCM operations and the results are shown in **Table 23**.

Rix's Creek Mine Results

During the reporting period the strategy was to manage water levels in the open cut at Rix's Creek Mine operations by pumping water to the CHPP for re-use, to surface dams and disused pits to maximise evaporation. Water is pumped to the CHPP Dams from the west pit open cut operations and MB 19 water storage area.

The Camberwell Pit is dewatered to Dirty Water Dam 1 (D1), the CHPP supply dam. Water carts operated from the fill point adjacent to the workshop hardstand over this reporting period.

Rixs Creek has a water management system where all water on-site has generally been retained in storages: mine water dams, mine voids and tailings dams for re-use by mining and processing operations. Water can be transferred from these storages via pipelines to the CHPP, the mine or to Ashton Coal. Water was also pumped from the Greater Ravensworth Area Water Sharing Scheme **(GRAWSS)** which continued to occurred during this reporting period.

In YEM 2024, the strategy was to continue managing water levels in the open cuts by pumping water to the CHPP for re-use, to surface dams and disused voids to maximise evaporation and for increased use of water water carts for dust suppression of roads and dig faces. Water is pumped to the CHPP Dams and the North Pit Tailings Dam from the open cuts. Water carts were operated over the whole operational year.

Potable Water Use
37.9 megalitres (ML) of potable water was sourced from the Singleton town water supply in YEM 2024 for potable supply and bathhouse facilities.

Hunter River Salinity Trading Scheme
Rixs Creek Mine does not discharge under the Hunter River Salinity Trading Scheme.

Groundwater
There was an estimated 492.8 ML of groundwater inflow into the Rix's Creek Mine voids during the YEM 2024 reporting period against a groundwater licencing allowance of 503 ML

The groundwater inflow and seepage from rehabilitated emplacements and spoil dumps into the Underground Portal Storage was estimated at 1149 ML.

Site Inventory

The total RCM site inventory (including water stored in the in-pit spoil pore spaces) decreased from 22,098 ML to 20,280 ML during YEM 2024. This was due to the transfer of water into the Greater Ravensworth Area Water Sharing Scheme (GRAWSS)and reduced rainfall during the YEM 2024 period. Integra Mine also returned seepage water back to Rix's Creek Mine during the reporting period.

Surface Water Dams

Water inventories in site process water dams decreased over the year due to below average rainfall. The Falbrook Pit is used as a storage for excess mine water and the inventory decreased slightly from 8,375 ML to 8,211 ML over the year, as excess water onsite was continually pumped to Falbrook Pit for storage, topping of the inventory.

Possum Skin Dam inventory decreased from 690 ML in January, closing the year at an estimated 487 ML.

DWD4 was mostly around 300 ML over the year.

Free water in the tailings dams was estimated at 216 ML during the reporting period.

Table 23. Estimated Sample Static Water Balance Rix's Creek Mine YEM 2024

Water Stream	YEM 2024	Estimation technique
Inputs		
Imported Fresh Water	0	High (metered)
Imported Potable	37.9	High (metered)
Groundwater Seepage To Open Cuts	492.8	Low
Seepage Transfer from Integra UG to RCN	1,781.0	Low (modelled)
Underground Dewatering	69.4	low
Rainfall Runoff – Into Dirty Water System	636.9	Low (catchment)
Recycled to CHPP from Tails & Storage (not included in total below)	3,472.6	Low
Water from ROM Coal	560.2	Low
Total Inputs	3,568.2	
Outputs		
Groundwater Seepage Out (Down dip losses and high wall evaporation)	2,004.3	Low
Dust Suppression – Water Carts	1,146.6	high (metered)
Exported to Other Mines – through GRAWSS	555.1	high (metered)
Evaporation - Mine Water & Tailings Dams	926.4	low
Entrained in Process Waste	454.9	low
Water in Product Coal	172.8	low
Potable Usage	37.9	High (metered)
Total Outputs	5,298.0	
Estimated Change in Pit Storage	-1,729.8	

7.2.2 Climate / Rainfall

Specific rainfall during YEM 2024 is as follows:

- Over the review period, no months exceed the monthly average rainfall for YEM 2024.
- YEM 2024 annual rainfall at Rix's Creek was 459.6mm, which is significantly lower than the long-term average of 723.2mm. August and December 2023 were the only months that approached the historical monthly average. Meanwhile May, June, July and September 2023 all recorded below 20mm for the month, well below historical averages. This is compared to YEM 2023 where only three months received below the historical monthly averages.

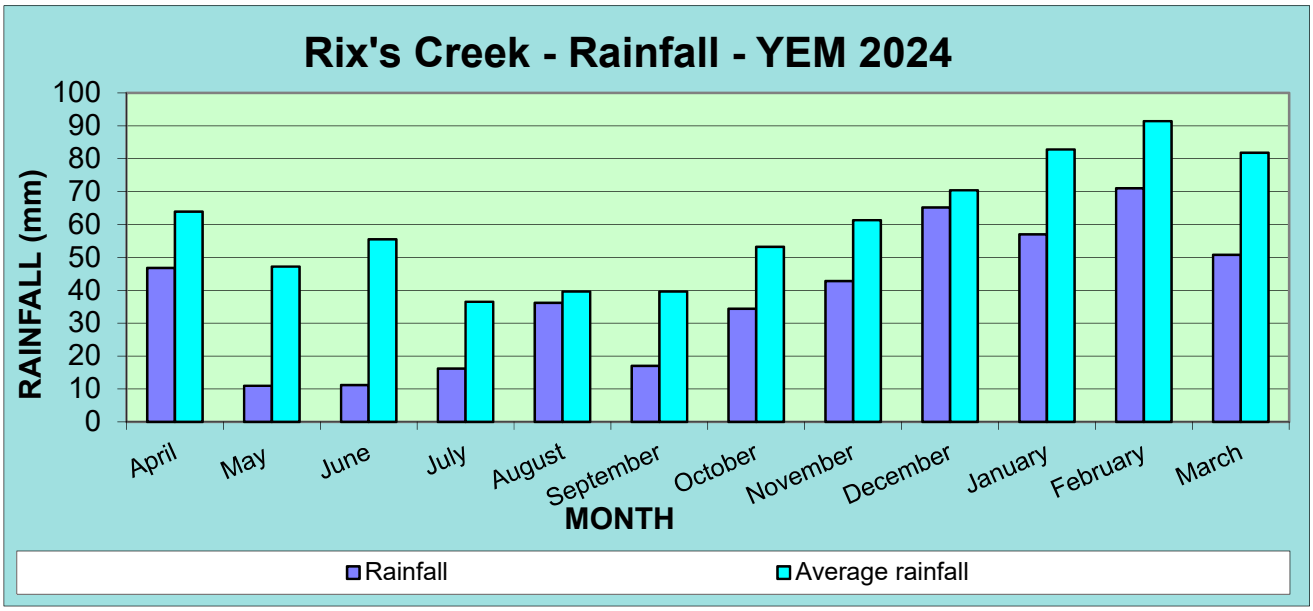


Figure 18. Annual Rainfall at Rix's Creek YEM 2024

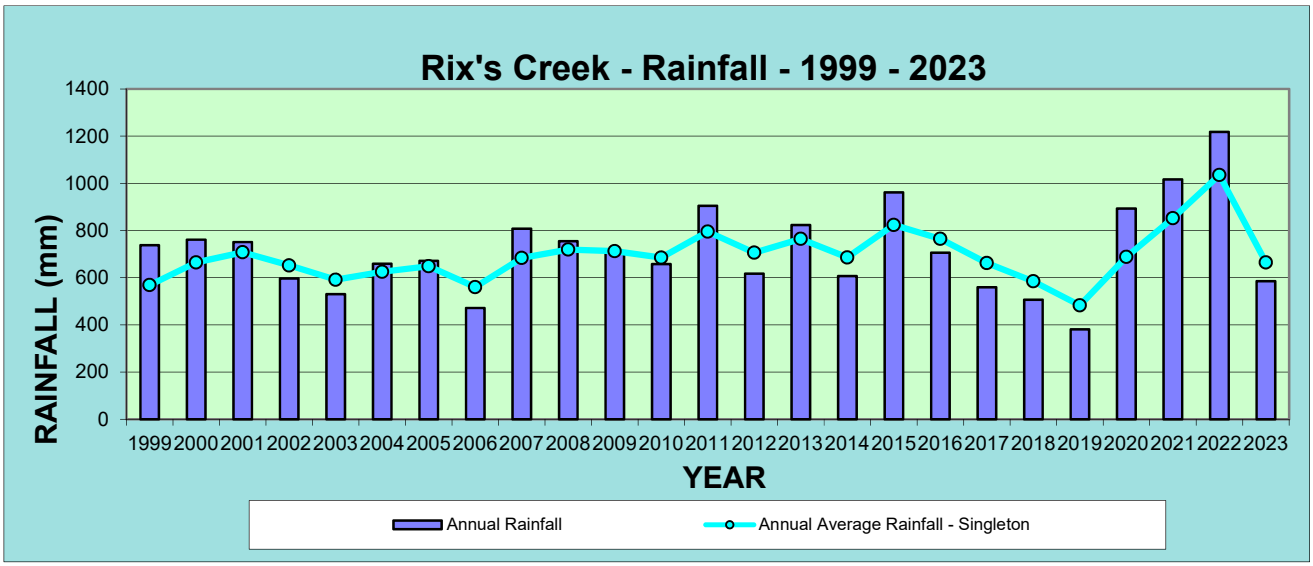


Figure 19. Annual rainfall at Rix's Creek 1999- 2023

7.3 Surface Water

7.3.1 Environmental Management

The water management system at Rix's Creek mine has been designed with the primary objectives of:

- Segregation of uncontaminated, clean water runoff, from mine water on site; and
- Priority use of minewater for mining operations

Clean Water

Runoff from undisturbed areas at Rix's Creek South is directed away from mining operations through diversion banks and channels. The clean water is directed into Rixs Creek, which flows through the lease. North of the New England Highway the Creek joins with Stonequarry Gully, a 3rd order stream which consists of a number of flow lines fromsmaller catchments. South of the Highway Rixs Creek continues as a 3rd order stream just prior to the lease boundary where an unnamed tributary joins from the Maison Dieu area where Rixs Creek becomes a 4th order stream.

Water quality is monitored in Rixs Creek on a monthly basis when there is sufficient water to sample as Rixs Creek is an ephemeral stream. Water quality is also monitored in a smaller creek north of the operation labelled Deadman's Creek.

For Rix's Creek Northern operations, in the open cut mining lease area east of the main Northern Railway Line, rainwater runoff from non-mined or rehabilitation areas, as well as from the diversion of the Martins Creek and Blackwattle Creek catchments, is collected in a series of four dams (C1, C2, C3 and C4). A clean water channel connects these dams. C3 and C4 are maintained with sufficient freeboard to ensure adequate surge capacity during storm events. Three further dams, C5, C6 and C6a are sediment laden water dams in the south of the mining lease and these dams bywash to Dam C3.

The area west of the Main Northern Railway Line had several dams constructed in 2000 due to the increase in Camberwell Pit operations and the need to separate clean and mine water. The water management system comprises clean water dams C7 to C11. The dams and diversion banks divert clean runoff water from entering mine workings. Dams C7, C8 and C11 bywash and flow into C4 via the vegetated channel, while dam C9 (west of the south pit) bywashes into Station Creek. Dam C10 was located in the active mining area and was 'mined-through' in 2001.

Mine Water

Runoff from disturbed areas is contained within a system of detention dams designed to allow settlement of the suspended solids. Runoff from active mining areas is pumped to the mine water storages.

First priority is given to the use of mine water in operations. Mine water is used in the coal washing process and for dust suppression via water carts for haul road watering and spraying coal stockpiles.

Hunter River Salinity Trading Scheme

Rix's Creek Mine purchased one (1) credit during the 2022 HRSTS credit auction. Rix's Creek currently does not have a licenced discharge point in accordance with EPL 3391 requirements.

Rix's Creek Mine is completing a feasibility study into the potential to discharge from site after undertaking required studies and obtaining all required approvals.

Sampling Locations

Water samples are taken from Rix's Creek South in four locations. They are:-

- Site 1 - Railway Underpass, as the Creek enters the site;
- Site 2 - New England Highway Bridge, at the mid-point through the mine site;
- Site 10 – Below Operation, on Rix's Creek below the operation; and

- Site 3 - Maison Dieu Road Bridge, after the Creek has left the site.

Water storage dams 1, 2, and 6 are sampled and analysed monthly. The location of these dams are shown on Figure 23 with the relationship being:-

- Site 4 - Clean Water Dam 1 - (CWD 1)
- Site 5 - Clean Water Dam 2 - (CWD 2)
- Site 7 - Clean Water Dam 6 - (CWD 6)

For Rix's Creek North, Environmental Protection Licence (EPL 3391) requires the monitoring of surface waters for pH, EC, TSS and TDS at the following sites on a monthly basis:

- W3 - Martins Creek, where it enters the site;
- W6 - Blackwattle Creek, where it enters the site; and
- W1 - Station Creek, where it leaves the mine site.

EPL Samples are taken on a monthly basis. Sampling site locations are indicated on Figure 20.

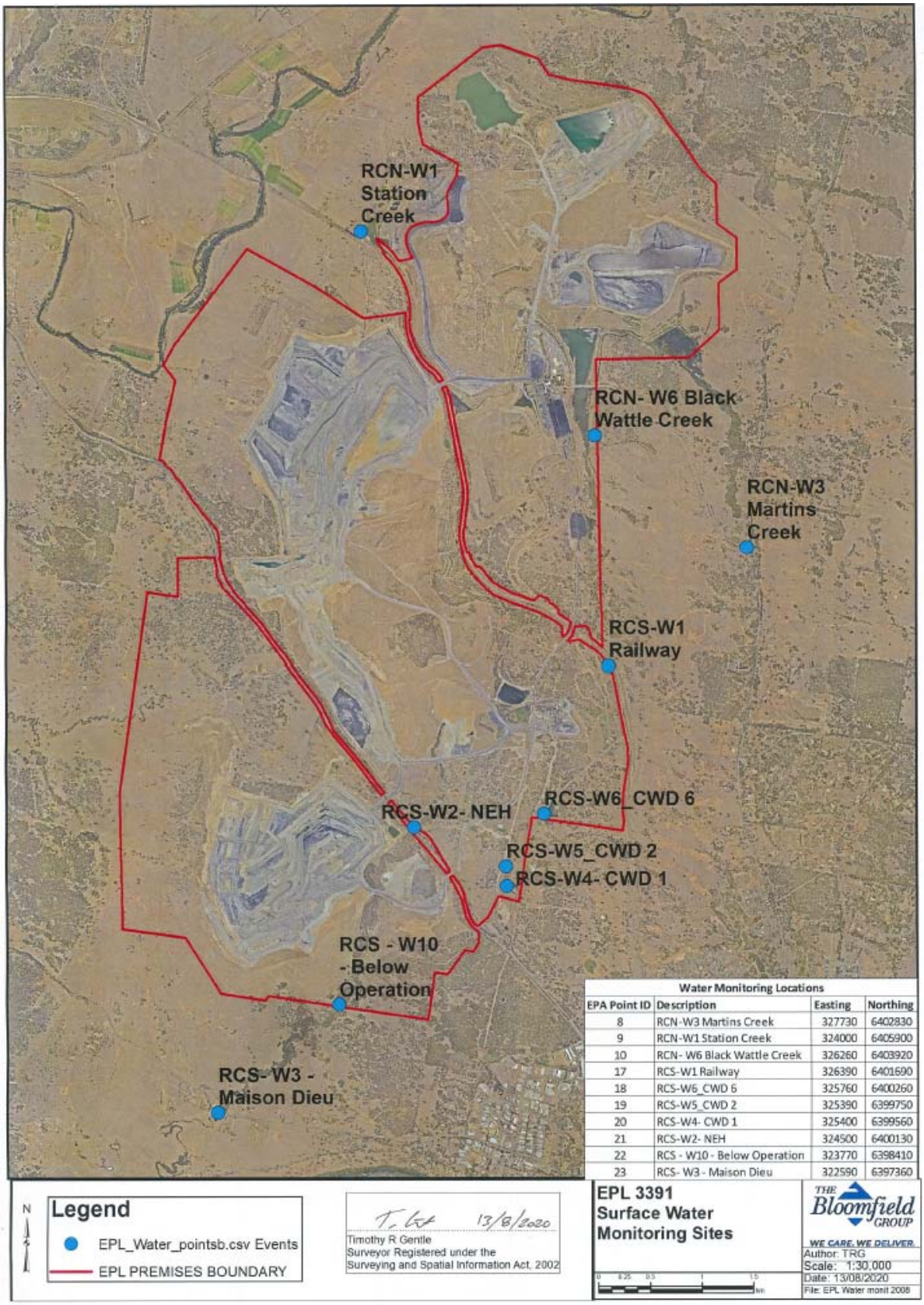


Figure 20. EPL 3391 water monitoring sites

Table 24. RCN Surface Water Monitoring Sites

Monitoring Point	Location
W1	Station Creek
W3	Martins Creek
W4	Glennies Creek upstream of the Station Creek confluence
W5	Glennies Creek downstream of the Station Creek confluence
W6	Blackwattle Creek
W7	Stony Creek where it crosses Stony Creek Road
W10	Clean Water Dam – C4
W11	Glennies Creek downstream at Camberwell where it crosses the New England Highway
W12	Clean Water Dam – C1
W13	Clean Water Dam – C6
W14	Clean Water Dam – C3
W15	Clean Water Dam – C6A (after C5 spillway channel before clean water channel)
W16	Sediment Control Dam – C7
W17	Clean Water Dam – C2
W18	Clean Water Dam – C5
W19	Mine Water Dam D1
W20	Northern Stock Water Dam No. 1
W21	Northern Stock Water Dam No. 2
W22	Station Creek Up
W23	Station Creek Down
GCS003	Possum Skin Dam
GCS004	PS Dam Seepage Collector
GCS005	PS Dam Clean Water diversion Sediment Pond
SD1	South Sediment Dam
SD2	Central Sediment Dam
SD3	North Sediment Dam
GC1	Middle Falbrook Rd Bridge
GC2	Glennies Creek Nobles Crossing
Nobles Crossing	Nobles Crossing

7.3.2 Environmental Performance

Water samples are analysed for water quality parameters of pH, electrical conductivity, total dissolved solids and total suspended solids. The water samples are analysed by Steel River Testing Mayfield as well as ALS Laboratory Group at Warabrook. Both laboratories are registered by the National Association of Testing Authorities, Australia (NATA).

Rix's Creek Mine surface water results

During the YEM 2024 surface water assessment, rainfall was somewhat reduced from the previous reporting period and each month was below the historical rainfall average. The general trend with pH is that it increases under low flow or periods of low rainfall and conversely, there's a general reduction in pH under periods of above average rainfall is experienced. This trend was demonstrated during the YEM 2024 period.

pH

The pH results are presented in **Appendix 1**. The general pH trend in the Creeks and site dams is to decrease under flow conditions and increase in times of stagnant conditions or limited flow. The decrease in pH under flow conditions reflects the slightly acidic nature of rainfall. The pH ranged from 5.9 to 9.9 throughout YEM 2024. Due to the irregularity in rainfall experienced in the past year there was a general increase in pH when compared to YEM 2023.

The surface water assessment of the pH of upstream ephemerals W6 (Black Wattle Creek) ranged between 7.2 and 8.4 and W3 (Martins Creek) ranging between 5.9 and 7.1. The Upstream Railway underpass recorded pH between 7.0 and 9.7. W1 (Station Creek) downstream ephermal monitoring site is located downstream of mining operations and recorded a neutral to slightly elevated pH during the reporting period ranging between 7.3 and 7.9.

Electrical Conductivity (Salinity)

The Electrical Conductivity results are presented in **Appendix 1**. Salinity levels at RCM generally fluctuated in correlation with variations in rainfall and flowing vs non-flowing conditions, ranging from 80µS/cm to 21,000µS/cm (*Stagnant creek line*) during the YEM 2024 reporting period.

Results for the South ranged from 106µS/cm at the Dead Man's Gully Dam to 21,000µS/cm at the Above Industrial Catchment site (*Stagnant creek line*).

The EC of upstream ephemeral W3 (Martins Creek) ranged between 80 µS/cm (February 2024) and 383µS/cm (May 2023), with W3 unable to be sampled for 5 months due to the creek being dry (Sept, Oct, Nov, Dec 2023 and Mar 2024), as compared to last reporting period were sampling was possible all 12 months. W1 (Station Creek) monitoring site is located downstream of mining operations ranging between 1070 and 1200µS/cm. W1 was only able to be sampled three months due dry conditions (Apr, May and June). Black Wattle Creek, which is ephemeral recorded 7,290µS/cm to 14,3000µS/cm and was too low to sample on seven (7) occasions during the reporting period as compared to two (2) the previous reporting period.

Total Dissolved Solids

The Total Dissolved Solids (TDS) results for Rix's Creek Mine are presented in **Appendix 1**. TDS ranged from 125 mg/L – W18 Dam C5 to 14,200 mg/L – Dead Man Gully Creek. Throughout the YEM 2024 reporting period there was below average rainfall resulting in a general increase of TDS.

TDS ranged from 125mg/l (April 2023) – W18 Dam C5 to 14,200 mg/l (March 2024) – Dead Man Gully Creek (Stagnant Creek Line). The higher results during Oct - Jan coincided with reduced rainfall, while after more significant rainfall was recorded saw lower TDS results. The general trend saw TDS reduce when close to average rainfall was experienced. Total dissolved solids at monitoring site W1 (Station Creek) ranged between 590 mg/l in May and 642 mg/l in June 2023, While 9 months were unable to be sampled (Jul – Mar 2024). Due to the ephemeral nature of Black Wattle Creek, on seven (7) occasions Black Wattle Creek was too low to sample during YEM 2024. At W3 Martins Creek the TDS ranged between 570 mg/l (May 2023) and 1630 mg/l (January 2024).

Total Suspended Solids

Total Suspended Solids (TSS) results are presented in **Appendix 1**. TSS ranged from <5mg/l at the numerous sites over several months to 72mg/l at Above Industrial Estate Catchment in March 2024. The general trend is for levels to increase down the catchment under flow conditions. This historic trend is an indication that the water flowing in the Creeks picks up sediment and increases the sediment load down the catchment. This trend is depicted in the YEM 2024 period and is consistent with previous reporting periods.

TSS results are presented in **Appendix 1**. TSS results ranged from <5 mg/l at numerous sites over several months to 251 mg/l (January) at the W3 Martins Creek site. The Ephemeral Black Wattle Creek ranged from <5 mg/l to 14 mg/l with flow following sampling undertaken after a rain event, though sampling was not possible for seven (7) month from Sept 2023 – March 2024. The general trend is for levels to increase down the catchment under flow conditions. This historical trend is an indication that the water flowing in the Creeks picks up sediment and increases the sediment load down the catchment.

7.3.3 Reportable Incidents

There were no reportable events relating to water.

Table 25. **YEM 2024 Rix's Creek South Surface Waters pH and EC results**.

YEM 2024 Rix's Creek South Surface Waters										
	pH Results					EC Results (µS/cm)				
Monitoring Location	Min	Ave	Max	Lower Criteria	Upper Criteri	Min	Ave	Max	Criteria	Comments
Railway Underpass	7	8.5	9.7	6.5	8	329	760	1240	125 - 2500	
New England Highway	7.3	7.6	7.8	6.5	8	830	1998	2460	125 - 2500	
Maison Dieu Bridge	7.1	7.5	7.9	6.5	8	639	3798	10300	125 - 2500	Stagnant - low flow ephemeral creek
Clean Water Dam No. 1	6.8	7.9	9.4	6.5	8	214	299	389	125 - 2500	
Clean Water Dam No. 2	7	7.9	9.3	6.5	8	207	272	338	125 - 2500	
Clean Water Dam No. 6	7.1	8.5	9.6	6.5	8	298	357	407	125 - 2500	
Dirty Water Dam No. 1	8.4	8.6	8.9	-	-	4250	7010	8370	-	
Dirty Water Dam No. 2	8.3	8.5	8.6	-	-	4060	7188	8830	-	
Dirty Water Dam No. 4	8.5	8.6	8.8	-	-	4470	7035	8290	-	
Below Operations	8	8.1	8.3	6.5	8	743	2638	8640	125 - 2500	Stagnant - low flow ephemeral creek
Industrial Estate Catchment	7.8	7.9	8	6.5	8	715	1109	1810	125 - 2500	
Above Industrial Catchment	7.4	8.1	8.4	6.5	8	2620	15451	21000	125 - 2500	Stagnant - low flow ephemeral creek
Turkey's Nest Dam	8.5	8.6	8.8	-	-	4520	7054	10100	-	
Dead Man's Gully Dam	6.7	7.3	9.5	-	-	106	133	176	-	
Dead Man's Gully Creek	6.8	7.2	7.8	-	-	423	3649	9390	-	
Sediment Dam 16	7.4	7.9	8.5	6.5	8	343	1342	3130	125 - 2500	
Sediment Dam 17	7.1	7.5	8.4	6.5	8	152	264	357	125 - 2500	
Sediment Dam 20	7.4	7.9	8.5	6.5	8	343	1342	3130	125 - 2500	
Woop Dam 1	7.9	8.5	9.1	-	-	512	1070	1660	-	
Woop Dam 2	6.6	7.1	7.5	-	-	525	1346	2490	-	

Table 26. YEM 2024 Rix's Creek North Surface Waters pH and EC results.

YEM 2024 Rix's Creek North Surface Waters										
	pH Results					EC Results (µS/cm)				
Monitoring Location	Min	Ave	Max	Lower Criteria	Upper Criteri	Min	Ave	Max	Criteria	Comments
North Sediment Dam	7.8	8.0	8.4	6.5	8	694	1017	1880	125 - 2500	
Centre Sediment Dam	7.5	7.8	8.3	6.5	8	283	349	497	125 - 2500	
South Sediment Dam	7.5	7.9	8.1	6.5	8	231	294	407	125 - 2500	
W 14	7.8	8.7	9.8	6.5	8	1130	2486	6530	125 - 2500	collected during period of below average rainfall.
W 16	8.4	8.8	9.3	6.5	8	2860	4141	6420	125 - 2500	collected during period of below average rainfall.
B 2	8.0	8.5	9.0	6.5	8	269	491	1130	125 - 2500	
B 6	7.0	7.6	7.9	6.5	8	172	280	574	125 - 2500	
W 20	8.2	8.5	8.6	-	-	9050	9759	10600	-	
W 21	7.7	8.3	8.6	-	-	404	910	1910	-	
Falbrook Pit	8.4	8.5	8.7	-	-	4000	6479	7160	-	
W 1 Station Creek	7.3	7.6	7.9	6.5	8	1070	1130	1200	125 - 2500	
W 3 Martins Creek	5.9	6.5	7.1	6.5	8	80	233	383	125 - 2500	
W 4 Glennies Creek Up	6.9	7.7	8.1	6.5	8	315	423	527	125 - 2500	
W 5 Glennies Creek Down	7.5	7.8	8.0	6.5	8	322	449	579	125 - 2500	
W 6 Blackwattle Creek	7.2	7.7	8.4	6.5	8	7290	11358	14300	125 - 2500	collected under no-flow conditions, ephemeral creek.
W 7 Stony Creek	6.9	7.1	7.3	6.5	8	335	484	873	125 - 2500	
W 10 Dam C4	7.7	8.4	9.0	6.5	8	1110	1218	1440	125 - 2500	
W 11 Glennies Creek NEH	7.7	7.9	8.0	6.5	8	307	447	576	125 - 2500	
W 12 C1 Dam	7.9	8.6	9.1	6.5	8	1130	2170	3270	125 - 2500	collected during period of below average rainfall.
W 13 C6 Dam	7.3	7.9	9.5	6.5	8	206	293	480	125 - 2500	
W 14 Dam C3	7.8	8.7	9.8	6.5	8	1130	2118	3420	125 - 2500	collected during period of below average rainfall.
W 15 Dam C6A	7.2	7.7	8.7	6.5	8	232	351	606	125 - 2500	
W 16 South Pit	8.4	8.8	9.3	6.5	8	2860	3934	5740	125 - 2500	
W 17 Dam C2	7.8	8.6	9.9	6.5	8	1170	1725	2240	125 - 2500	
W 18 Dam C5	7.4	8.1	9.1	6.5	8	215	354	543	125 - 2500	
W 19 Dam D1	8.6	8.7	8.9	-	-	5260	6761	8360	-	

7.4 Groundwater

The groundwater monitoring sites across the Rix's Creek mine sites have been combined in **Table 28** and are provided as a reference to compare Rix's Creek South and Rix's Creek North.

Table 27. Rix's Creek Ground Water Monitoring Sites

Bore ID	License	Easting	Northing	Screened Interval (mgbl)	Stick Up (m)	Surface Elevation (mAHD)	Total Depth (mbgl)
Rix's Creek North							
Open Cut Piezometers and Wells							
Glennies Creek Alluvium							
GCP9	(20BL171708)	323259	6407315	Unknown	1.5	69.9	9
GCP10	(20BL171708)	324414	6408030	Unknown	0.7	74.9	11.5
GCP19	(20BL171708)	325086	6408333	8.5 - 12	0.63	77.5	12
GCP20	(20BL171708)	325201	6408179	5.2 - 8.2	0.67	82	8.2
GCP21	(20BL171721)	324466	6407916	6 to 11	0.82	76	11
GCP22	(20BL171721)	324558	6407814	8.5 - 12	0.7	75	12
GCP23	(20BL171721)	324535	6407659	4.6 - 8	1.01	75	8
Coal Measure							
GCP1	(20BL169631)	325124	6406664	Unknown	0.34	96.0	108
GCP2	(20BL169631)	325160	6406490	Unknown	0.61	105.5	105
GCP5	(20BL169631)	324337	6406203	Unknown	0.54	80.3	108
GCP6	(20BL169631)	324941	6406784	Unknown	0.38	102.9	126
GCP7	(20BL169628)	325864	6407071	60 - 72 and 96 - 102	0.1	93.0	120
GCP8	(20BL169630)	326332	6407214	Unknown	0.44	105.1	120
GCP13	(20BL169628)	326169	6406745	Unknown	0.15	105.4	66
GCP14	(20BL169628)	325774	6407042	Unknown	0.66	90.99	123
GCP15	(20BL169628)	325912	6406961	Unknown	0.42	95.04	114
GCP16	(20BL169628)	326029	6407077	Unknown	0.7	98.85	120
GCTB	(20BL169631)	325149	6406572	Unknown	0.2	102.5	90
Extended Southern Pit							
Glennies Creek Alluvium							
GCP28	(20BL171722)	322651	6405459	6.7 -12.0	0.8	69.5	12
GCP29	(20BL171722)	323191	6405356	4.5 - 10.0	0.9	71	10
GCP30	(20BL171720)	322438	6404649	5.5 -12.0	0.94	67.5	12
Coal Measure							
GCP27	(20BL171881)	323197	6406037	36.5-37.5	1.11	70	27.5
GCP32	(20BL171880)	322491	6404250	49.0-55.0	0.66	70.5	55.55
GCP34	(20BL171879)	322800	6403235	47.0-56.25	0.61	101	56.25
GCP36	(20BL171722)	322915	6405320	14.5-16.0	0.85	70.5	16
GCP38	(20BL171878)	323468	6405626	17.0-24.3	0.98	71	24.3
GCP24	(20BL171722)	323241.8	6407107	46-48	0.6	71.25	48
Rix's Creek South							
Regolith (Upper weathered zone)							
BH3		325457	6401923	5-8	0.97	100	11
BH4		323982	6398666	7-10	0.74	63	10
BH8		321803	6401175	5-14	0.8	85.4	20
Coal Measure							
BH1		323190	6400562	115-121, 127-130	0.85	113	130
BH2		322936	6401923	84-87	0.98	136	90
BH5		324562	6399924	63-66	1.04	76.46	66.5
BH7		323345	6401709	150.5-198.5	0.72	100.8	200.5
20BL170864		324633	6400335		0.3	80.5	~70

7.4.1 Monitoring Background

As part of the Water Management Plan for Rix's Creek Mine, a monitoring program has been implemented to detect any impacts from mining on the groundwater regime, and from neighbouring groundwater users. The monitoring program incorporates both shallow and deep groundwater monitoring locations monitoring the water levels in the Glennie's Creek Alluvial deposits and the Permian Coal Measures around both Rix's Creek South Mine and the Rix's Creek North Mine.

Mining activities that have the potential to impact groundwater levels and quality are:

- Tailings emplacement area
- Spoils and emplacement
- Surface water bodies – these may locally control groundwater levels in surrounding spoil and Permian strata; and
- Waste dumps & coal handling plant – surface water runoff and associated water quality issues.

7.4.2 Groundwater Monitoring Performance

Rix's Creek South Groundwater Levels

For Rix's Creek South operations, three piezometers are installed into the Permian coal measures and three into overlying regolith zone. Bore details are summarised in **Table 27**.

Piezometers BH1, BH5 and BH7 are the deeper bore holes into the coal measures while Piezometers BH3, BH4 and BH8 are shallow into the overlying regolith. The monitoring network also included the existing production bore 20BL170864. BH2 was installed in the Permian coal measures, however this bore was destroyed in 2011.

BH1 was damaged in the second half of 2017 and BH2 was destroyed in early 2012.

Piezometer BH6 was proposed but was not completed due to several problems when drilling during 2015, with BH8 being completed in its place.

Groundwater level monitoring has been undertaken since 2010 and on a bi-monthly basis from 2012 to 2024 in accordance with the 2019 Rix's Creek Mine Water Management Plan (WMP).

Groundwater levels for Rix's Creek South groundwater bores (BH3, 4 and BH8) have remained fairly consistent in the shallow aquifer since the commencement of monitoring ground water levels with the Coal Measures acting in hydraulic isolation from the shallow regolith and alluvium aquifer systems.

During the latest monitoring period, depressurisation was observed in BH5, BH7 and 20BL170864 in response to ongoing strata dewatering in the broader Rix's Creek area.

Piezometers in BH4 and BH8 have remained relatively stable throughout the monitoring period, indicating the deeper coal measures are hydraulically separated from the shallow regolith and alluvium system.

BH3 showed a slight decline then rise in in water levels in association with decreased rainfall, however, the bore log notes that the screened interval is within a small coal seam and may be connected to the deeper coal measures than the shallow regolith unit. Its water level ranged from 5.17 – 7.65 mbgl.

During YEM 2024 BH4 ranged from 1.35 – 1.86 mbll and BH8 ranged between 2.35 – 2.68 mbgl.

Overall the regolith water levels are relatively stable in the shallow water table with fluctuating responses to rainfall and no observable correlation to water levels in the coal measures.

Groundwater levels are shown in **Appendix 2**.

In accordance with the 2019 WMP, the BH4 and BH8 water level variability did not fall by greater than 0.51m and 0.33m respectively in the YEM 2024 monitoring period.

Pit Inflows

There were 492.8ML of estimated groundwater inflows into Rix's Creek Mine compared to 505ML Open Cut (deatering groundwater) Hardrock licences.

Rix's Creek South Groundwater Quality

During YEM 2024, salinity within BH3 ranged from 3,620 – 6,810 uS/cm, whilst BH4 ranged from 4,780 – 20,200 uS/cm which is inconsistent with the parameters outlined in the Rix's Creek South Water Management Plan. BH4 historical range for Electrical conductivity is between 15,000 – 20,000, with July 2023 result (4,780uS/cm) an outlier when compared to the results through out the reporting period.

In the same period, salinity in the coal seam (BH5) ranged between 5,770 – 13,000 uS/cm with a decreasing salinity trend starting around July 2023.

Salinity levels are relatively consistent in the coal seams and the regolith which indicates limited connectivity (and mixing) between the two aquifer zones.

No negative water quality trends are being driven from mining operations in the area which is consistent with the hydrogeological conceptualisation and impact assessment predictions.

7.4.3 Water Take

Table 28 presents the relevant water sources, units licensed by Rix's Creek Mine and predicted take for the YEM 2024 reporting period. No water was imported from Hunter Regulated - River Alluvial – Glennies Creek Management Zone 3a for operational use during the reporting period.

Table 28. Mine inflows YEM 2024

Number	Category	Total units	Purpose
WAL41500	Mining	100	Open Cut (dewatering groundwater) Hard Rock
WAL 41555	Mining	100	Open Cut (dewatering groundwater) Hard Rock
WAL 40777	Mining	305	Open Cut (dewatering groundwater) Hard Rock
20BL170864	Mining	100	1 x Bore (dewatering groundwater)

Table 29. Rix's Creek South YEM 2023 Groundwater Monitoring Network

Bore ID	Type	Depth (mbgl)	Location	Change in Water Levels during YEM 2024 (m)
BH1	Standpipe Piezometer	130	Middle of basin - Upper / Lower Arties	Bore Damaged Aug 2017
BH2	Standpipe Piezometer	90	West of basin, close to outcrop- Lower Barrett	Bore Destroyed March 2012
BH3	Standpipe Piezometer	11	East of waste dump / backfill area- Regolith and shallow coal seams	+1.63
BH4	Standpipe Piezometer	10	Rix's Creek south of Pit 3- Regolith	+0.51
BH5	Standpipe Piezometer	66.5	East of Rix's Creek / tailings emplacement area- Lower Barrett	+4.61
BH7	Standpipe Piezometer	200.5	Bottom of basin- Hebden	-3.31
BH8	Standpipe Piezometer	20	Dead Man's Creek west of coal outcrop – regolith	-0.25
20BL170864	Production bore	~70	Above underground Workings - All coal seams	+23.48

Figure 21. Rix's Creek North Ground and Surface Water Monitoring sites

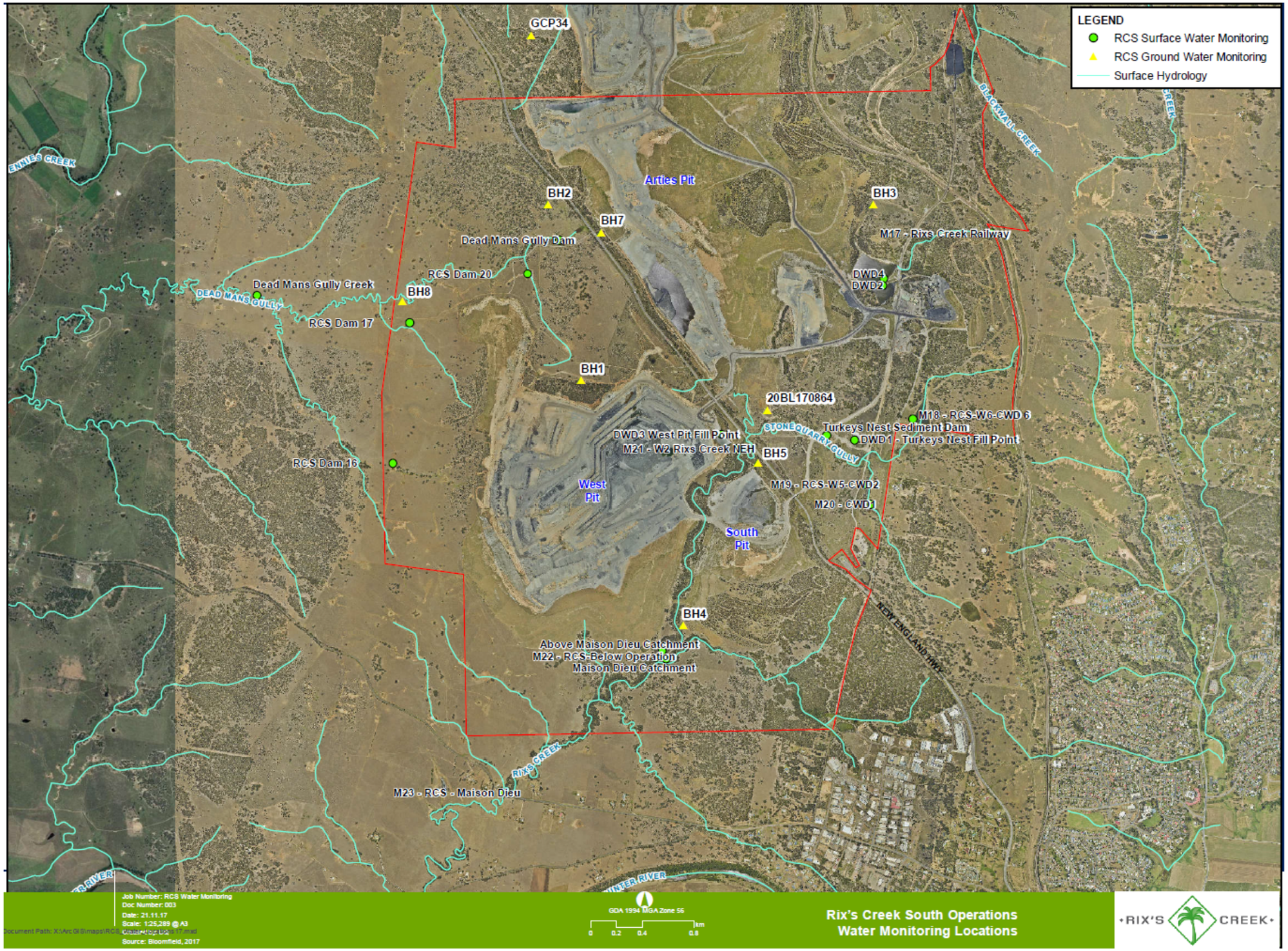


Figure 22. Rix's Creek South Groundwater and Surface Water Monitoring sites

Rix's Creek North Groundwater Levels

Piezometers and bores included in the YEM 2024 Rix's Creek Mine Groundwater Monitoring Plan include the Foybrook Formation basement coal measures as well as the Glennie's Creek and Station Creek alluvium groups.

Due to the complex interactive depressurisation effects of numerous coal mines on steady state groundwater levels within the model area, calibration of the 2017 groundwater model was focused on obtaining correlation between known and modelled mine inflow rates, as opposed to matching observed and modelled groundwater levels.

The Rix's Creek North groundwater monitoring program is referred to in **Table 30** and with results presented in **Appendix 2**.

Alluvium

From the 2017 Environmental Assessment, the model indicated that groundwater within alluvial aquifers associated with Glennie's Creek and Station Creek had the potential to be marginally to negligibly affected by the proposed pit during its active mining phase, with drawdowns ranging up to 1.2m near the Mine Area until the pit excavation was completed.

As shown in **Appendix 2**, results up to the end of the YEM 2024 monitoring period show the alluvium water levels have been relatively consistent with some variation induced by reduced rainfall, evaporation and natural creek flow process.

Alluvial groundwater level monitoring indicated no response to mining outside of the influences of normal climatic variability in proximity to drawdown associated with the Falbrook Open Cut in the Glennie's Creek catchment, or the Camberwell Open Cut in the Glennie's Creek and Station Creek catchments.

Dewatering of the neighboring/underlying coal seams and broad depressurisation of the Permian basement has not resulted in water level impacts within the creek alluvium system.

Table 30. Rix's Creek North Ground Water Monitoring Network

Bore ID	Type	Total Depth (mbgl)	Formation	Change in Water Levels during YEM 2024 (m)
GCP09	OSP	9	Glennie's Creek Alluvium	+0.09
GCP10	OSP	11.5	Glennie's Creek Alluvium	+0.03
GCP19	OSP	12	Glennie's Creek Alluvium	-0.15
GCP20	OSP	8.2	Glennie's Creek Alluvium	n/a
GCP21	OSP	8.2	Glennie's Creek Alluvium	-0.03
GCP22	OSP	12	Glennie's Creek Alluvium	-0.15
GCP23	OSP	8	Glennie's Creek Alluvium	-0.10
GCP28	OSP	12	Glennie's Creek Alluvium	-0.25
GCP29	OSP	10	Glennie's Creek Alluvium	-0.48
GCP30	OSP	12	Glennie's Creek Alluvium	-0.37
GCP32	OSP	55.56	Camberwell Pit Basement	-0.39
GCP34	OSP	56.26	Camberwell Pit Basement	n/a
GCP36	OSP	15.98	Camberwell Pit Basement	-0.41
GCP38	OSP	24.31	Camberwell Pit Basement	-0.50
GCP02	OSP	105	Falbrook Pit Basement	-0.17
GCP05	OSP	108	Falbrook Pit Basement	-0.31
GCP06	OSP	126	Falbrook Pit Basement	-0.48
GCP07	OSP	120	Falbrook Pit Basement	-1.0
GCP08	OSP	120	Falbrook Pit Basement	-0.84
GCP13	OSP	66	Falbrook Pit Basement	-0.41
GCP14	OSP	123	Falbrook Pit Basement	-1.14
GCTB	OSP	90	Falbrook Pit Basement	+0.01

Note: OSP = open standpipe piezometer

In accordance with the 2019 WMP, the GCP10, 21, 23, 28, 29 and GCP30 water level variability did not fall by greater than 0.03, 0.03, 0.10, 0.25, 0.48 and 0.37m respectively in the YEM 2024 monitoring period.

Basement

As shown in **Appendix 2**, the basement monitoring data to the end of the YEM 2024 reporting period indicated;

- During the YEM 2024 monitoring period, there were only minimal rises in water levels occurring in GCP09, 10 and GCTB, along with normal climatic variability for the remaining piezometers within the Falbrook Open Cut; and
- All other basement bores at RCN saw slight reduction in water levels associated with regional depressurisation influences and a reduced annual rainfall total.

TD2 Dam

Monitoring wells B1 to B6 monitor the groundwater pressure within the TD2 dam wall, which is driven by the water stored in the dam and is separate from the underlying regional groundwater system.

The results recorded in each piezometer were relatively stable throughout the YEM 2024 and past reporting periods.

Bores 1, 4, 5 and 6 were dry during the YEM 2024 reporting period.

Rix's Creek North Groundwater Quality

The pH and salinity in the Glennie's Creek alluvial open standpipe piezometers have not shown any significant trend since they were installed in 2007, except for a reducing salinity profile in GCP30 between mid-2009 and early 2011.

The pH and salinity in the Camberwell basement open standpipe piezometers have not shown any significant trends since they were installed after mid 2007.

The pH and salinity in the Falbrook Open Cut basement open standpipe piezometers have not shown any significant trends since they were installed in 2012 except for a fall in salinity in GCP14 in mid 2016 to late 2017, and GCP08 in early 2018, both of which are north of the Falbrook Pit and may be influenced by fresher stored water within the Falbrook pit void.

The groundwater chemistry trends are summarised in **Appendix 2**.

Table 31. Rix's Creek South Ground Waters pH and EC results YEM 2024.

YEM 2024 Rix's Creek South Ground Waters							
	pH Results			EC Results (µS/cm)			
Monitoring Location	Min	Ave	Max	Min	Ave	Max	Comments
BH3	5.2	5.3	5.4	3620	4964	6810	Level to low to sample, dry.
BH4	4.1	6.5	7.2	4780	15816	20200	Within historical range
BH5	6.8	6.9	6.9	5770	9230	13000	Within historical range
20BL170864	7.1	7.1	7.2	2710	5246	6420	Within historical range
BH8	6.8	6.8	6.8	20100	20480	20800	Within historical averages

Table 32. Rix's Creek North Ground Waters pH and EC results YEM 2024.

YEM 2024 Rix's Creek North Ground Waters							
	pH Results			EC Results (µS/cm)			
Monitoring Location	Min	Ave	Max	Min	Ave	Max	Comments
GCP01	7.7	8.0	8.6	9780	10268	10600	Within historical range
GCP02	8.0	8.0	8.0	11800	12060	12200	Within historical range
GCTB	8.0	8.2	8.3	14400	14640	14800	Within historical range
GCP05	7.4	7.4	7.5	12200	12340	12500	Within historical range
GCP06	6.8	6.9	7.0	12100	12420	12600	Within historical range
GCP07	6.9	7.1	7.5	6730	6908	7100	Within historical range
GCP08	7.5	7.6	7.7	6910	7072	7300	Within historical range
GCP09	7.0	7.1	7.3	371	415	437	Within historical range
GCP10	6.9	7.0	7.1	696	727	766	Within historical range
GCP13	6.9	7.0	7.1	12400	12580	12700	Within historical range
GCP14	7.0	8.4	9.1	9210	9694	10000	Within historical range
GCP19	7.1	7.2	7.3	2350	2624	3040	EC slighty below historic average elevated rainfall.
GCP21	7.1	7.1	7.2	1510	3752	12600	Within historical range
GCP22	6.9	7.0	7.1	11900	12420	12800	Within historical range
GCP23	7.3	7.4	7.5	15600	16000	16400	Within historical range
GCP24	7.8	7.8	7.9	2930	2960	2980	Within historical range
GW67291	6.7	6.9	7.4	486	1199	1570	Within historical range
GCP27	9.1	9.2	9.3	4170	4282	4510	EC slighty below historic average elevated rainfall.
GCP28	7.1	7.1	7.2	617	698	910	Within historical range
GCP29	0.0	7.4	7.4	4190	4253	4300	Too Low to sample, dry.
GCP30	6.9	7.0	7.1	3700	3776	3920	Within historical range
GCP32	7.0	7.1	7.3	14100	14500	14700	Within historical range
GCP36	7.6	7.6	7.7	1030	1064	1080	Within historical range
GCP38	7.0	7.1	7.2	10600	11000	11200	Within historical range

7.5 Erosion and Sediment

7.5.1 Environmental Management

Erosion and sedimentation control is an integral part of the water management across the entire site. Erosion control on reshaped and rehabilitation areas is achieved by having the minimum delay in time and area between the active mining operation and establishing rehabilitation. Contour embankments are integral design components of final landform design and shaping procedures, these structures direct flows of water into relevant catchment facilities.

Revegetation of rehabilitation areas is undertaken as soon as an area becomes available with the aim to establishing a minimum of 70% ground cover, the level required to adequately control soil erosion. Accompanied with this is the use of sediment detention basins in front of the operation, along haulage roads and on drainage lines flowing from establishing rehabilitation areas.

Throughout the reporting period sediment dams across site were de-silted whilst climatic conditions were dry allowing adequate access and works to take place. This required the use of a two 20 tonne excavators accompanied by a small fleet of 12 tonne tipper trucks. An additional longreach excavator was also utilised to desilt dams that couldn't be reached with a 20 T excavator. Several other smaller sediment dams and drainage lines were also cleaned via an on-site backhoe as required throughout the year. These sediment dams contain the same material as that excavated from the open cut operation as well as clays, soil and silt from the surrounding environment.

Monthly sediment and erosion checklists were completed at Rix's Creek Mine, with routine repairs to sediment fences being completed during the reporting period.

7.5.2 Environmental Performance

Total Suspended Solids (TSS) results from water sampling is used as a key indicator of sediment control. TSS results are discussed in Section 7.3 Surface Water environmental performance section.

7.5.3 Reportable Incidents

There were no reportable events regarding passive release of water during the reporting period.

7.5.4 Further Improvements

Any sediment collected within the light-vehicle wash-down pad, heavy-vehicle wash-down pad, diesel fill-point sump, electrical workshop sump, mechanical workshop sump are all cleaned regularly with the sediment particles relocated to the site bioremediation areas in accordance with the internal site bioremediation procedure.

SECTION 8 REHABILITATION

8.1 Annual Rehabiliation Report and Forward Program

Please refer to Appendix 4 for the Annual Rehabiliation Report and Forward Program. The Annual Rehabiliation Report and Forward Program can be found on The Bloomfield Group website - https://www.bloomcoll.com.au/sustainability/environmental-management/rixs-creek-assessments/mining-lease

SECTION 9 COMMUNITY

9.1 Community Engagement.

Rix's Creek Mine is required under the respective project approvals to operate a Community Consultative Committee (CCC). The committee consists of community representatives, local council and is chaired by an independent person appointed by DPHI. Other government agencies and community representatives are invited to participate on the committee. Rix's Creek was the first mine in the Hunter Valley to have a CCC which has operated for over 30 years.

The Committee representatives are:-

Independent Chairperson:-	Lisa Andrews
Community representatives:-	Councillor Sue George
	Reg Eveleigh
	Patricia Bestic
	Michelle Higgins
	Deidre Olofsson
	David Moran
Company representatives:-	
	Chief Development Officer - Geoff Moore
	Operations Manager - Brendon Clements
	Environment Manager – Chris Knight
	Environmental Superintendent – Chris Quinn
	Environment Officer – David Holmes

The Committee met two times during the YEM 2024.

On the 11th May 2023, the first CCC meeting was held during YEM 2024. At this meeting an overview of the current operations was delivered noting the continued mining operations in the West Pit and the North's Camberwell Pit. Usually a presentation of the Annual review would occur at the first meeting of the year but it was explained to the committee members that Rix's Creek had sought permission to align its reporting period to it's internal financial year period and this had been approved by the Department of Planning and Environment.

The Environment Superintendent gave an overview of the past years environmental performance, which covered off on rainfall for the period, operational noise management, blast results and general air quality. A small presentation was delivered on improvements to waste management on site. The Environment Superintendent also covered off on the reportable incidents that had occurred and the the resolution of those issues.

Members of the committee raised questions on rehabilitation that had occurred on site. This discussion expanded to weed management across site and in buffer areas. The committee were told that 16.48 hectares of rehabilitation had been completed to the year ending March and that Rix's Creek Mine have an ongoing weed management plan in place and employ a contract company to map the site and help develop a plan for individual weed spraying.

On the 18th October 2023 the second CCC meeting was held onsite at the RCS meeting room. Here we welcomed a representative from the Upper Hunter Mining Dialogue (UHMD). An overview of the UHMD was provided for the Committee members. This arose from a request at the previous meeting for an invitation to be forward to the UHMD to have a representative speak to the committee.

It was noted to the committee that Rix's Creek had participated in the UHMD Pasture Restoration Field Day and noted its success with 40 attendees from 18 different organisations, which included NSW farmers, DPI agronomists and the Resource Regulator.

General business and past requests for information were discussed as per the usual protocols of the CCC meeting and the Environmental Monitoring and Performance of the past 6 months were outlined.

A copy of the Rix's Creek Mine Community Consultative Committee meeting minutes can be foundat https://www.bloomcoll.com.au/sustainability/environmental-management/rixs-creek-assessments/ccc-minutes

Additional community consultation that was conducted during the reporting period included company newsletters which informed community members on updates to Rix's Creek operations, which included:

- A number of advertisements in local newspapers such as the Singleton Argus and Coalface.
- Rix's Creek North continuation project newsletters
- Rix's Creek Mine Operations update newsletter

A copy of the Newsletter can be found at https://www.bloomcoll.com.au/sustainability/environmental-management/rixs-creek-assessments/newsletters-fact-sheets

Notifications on kangaroo culling and 1080 wild dog and fox baiting were also distributed to near neighbours during the reporting period.

Internal employee newsletters were also distributed throughout the workforce that provided updates for environmental initiatives occurring onsite.

The Environmental Department and Property Manager maintained a continued active presence within the local community providing updates and information on Rix's Creek operations to community members.

The Company is a financial member of the Hunter Coal Environmental Group (HCEG).

The Company is a financial member of the Hunter Valley Combined Wild Dog Association (HVCWDA) Incorporation.

The company is also part of the Upper Hunter Mining Dialogue (UHMD) in association with the NSW Minerals Council (NSWMC) which brings industry, community, and key stakeholder groups together across various projects and goals relating to:-

- Land Management
- Social Impacts and Infrastructure
- Water
- Emissions and Health

The Bloomfield Group UHMD representatives are:-

Steering Committee	Chief Development Officer – Geoff Moore
UHMD Industry Working Group	Environment Manager – Chris Knight Environmental Superintendent – Chris Quinn

9.2 Community Contributions.

In the 12 month period 1st April 2023 to 31st March 2024, the Company provided support to 50 charitable groups and local community groups.

In the Singleton Community during that 12-month period, the Company contributed to:

- BlazeAid - Singleton Storage Hub - security system, storage and mezzanine
- Business Singleton – Business breakfasts and events
- Darlington Rural Fire Brigade
- Hunter Valley Boutique Winemakers Show
- Legacy – Singleton
- Mt Olive Community Centre - Playground upgrade
- Northern Agricultural Association - Singleton Show (22-24 Sep 2023)
- Police Citizens Youth Club Singleton - DRIVE program 2023/24
- Rotary Australia Benevolent Society - Singleton Bus Tragedy
- Salvation Army - Singleton - Red Shield Appeal / Christmas appeal
- Singleton Council / Singleton Hospital – Women's Wellness Seminar
- Singleton Fire Brigade Social Club - Lolly Run
- Singleton Gymkhana Club – Training Equipment for junior members
- Singleton Heights Public School P&C - Ipgrade to computer lab
- Singleton Men's Shed - Inverter for Solar Generation and 3 Sail shade cloths
- Singleton Neighbourhood Centre - Open Door Project Officer and Christmas appeal
- Singleton Netball Association - 2-door fridge replacement for Canteen
- Singleton Public School P&C – Chilled water station/bottle filler – Hydrobank
- The Samaritans - Christmas Lunch Singleton

Over the reporting period, the Company continued to assist in the administration of the Singleton Community Economic Development Fund. Signatories to the deed, Singleton Council, Glencore and The Bloomfield Group oversee the use of provision of proceeds from the Community Economic Development Fund, which was developed to use the proceeds from Voluntary Planning Agreements (VPAs).

Round three recipients announced during the reporting period received $462,521 for a range of community initiatives.

Since the first round of funding in 2021/2022, a total of $1,052,666 has been delivered to benefit Singleton residents.

9.3 Community Complaints.

All complaints received are registered and investigated. Complaints are referred to the Operations Manager and Environmental Superintendent and are dealt with on an individual basis. The Company standard is to personally deal with every complainant to find a resolution to the stakeholders concerns.

During YEM 2024 there were eighteen (18) complaints received. This is an increase from the 15 months period of YEM 2023, when eleven (11) complaints were recorded. No complaints were received in the months of August, Novemebr 2023 and January 2024.

Of the eighteen (18) complaints received in YEM 2024, two (2) were related to blast, seven (7) related to dust, five (5) related to noise, one (1) related to lighting. There were three other complaints that did not fall into these recognised catagories for issuessuch as truck movements and dog-baiting programme.

Refer to **Appendix 3** for the Rix's Creek Mine Community Complaints Register.

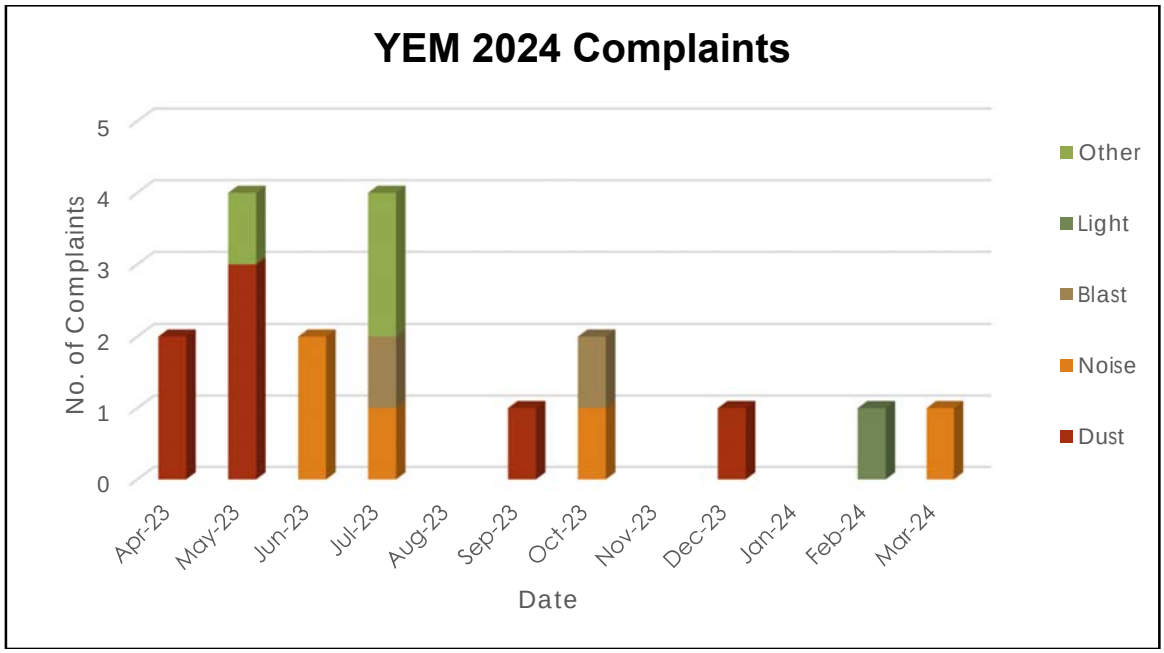


Figure 23. RCM Complaints Summary YEM 2024

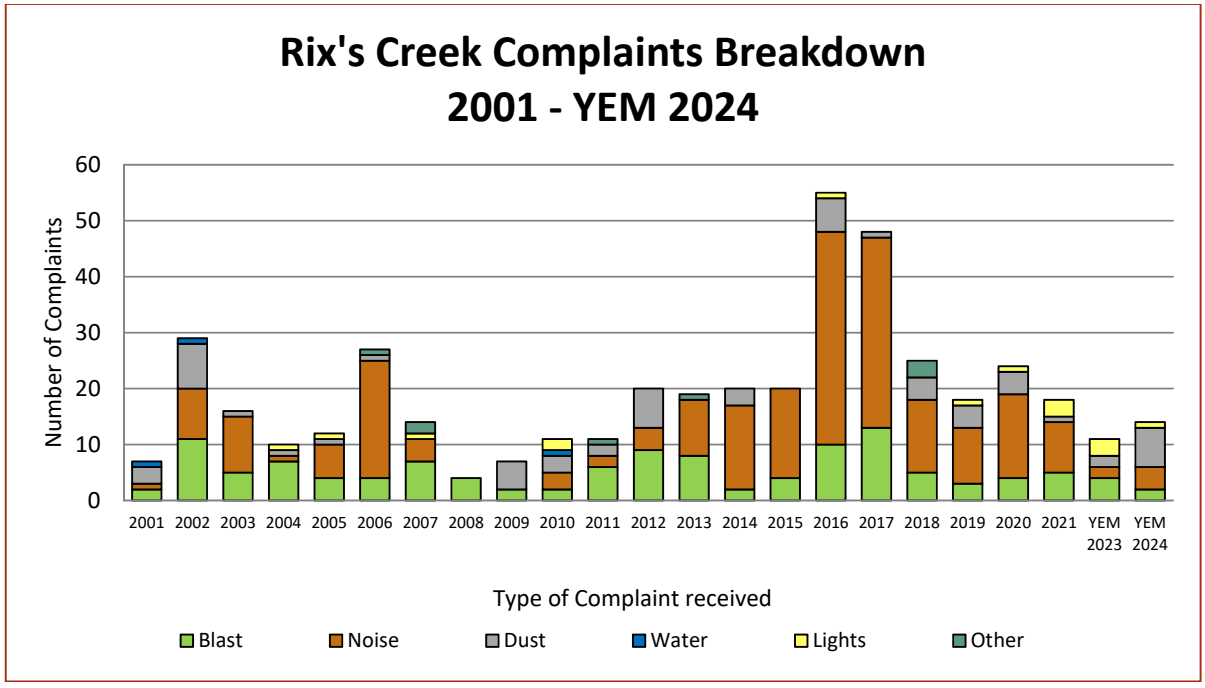


Figure 24. Summary of Rix's Creek Complaints 2001- YEM 2024

SECTION 10 – INDEPENDENT AUDIT

During 2023 an independent audit covering Rix's Creek North Project Approval (08_0102), Rix's Creek South SSD 6300, EPL 3391 and associated mining leases were independently audited by DPHI approved consultants Atlantech.

10.1 Development Consent

A summary of the compliance assessment against Rix's Creek Mine Development Consents is included below.

The Independent Audit Reports can also be viewed on the website

https://www.bloomcoll.com.au/sustainability/environmental-management/rixs-creek-assessments/independent-review

Refer below to progress made in implementing actions from the 2023 Independent Environmental Audit.

2023 Rix's Creek Mine Independent Environmental Audit
Response to Auditors Recommendations

THE Bloomfield GROUP
WE CARE. WE DELIVER.

Number	Condition	Auditors Recommendation	Bloomfield's Response
1	PA 08_0102 Schedule 3, Condition 37.	Finalise long-term security of offset areas or seek further extension from the Secretary to the date required to secure the biodiversity areas listed in PA 08_0102 Schedule 3, Condition 37.	Considerable progress has been made to date, consultation with the NSW Biodiversity Conservation Trust (BCT) regarding the Conservation Agreements remain ongoing. Rix's Creek Mine will seek an extension of time from DPE and will continue to progress with the final submission of the Conservation Ageements to finalise long-term security of offsets.
2	SSD 6300 Schedule 2, Condition B19	Update the Road Closure Plan to include provisions for minimising the duration of closures and for avoiding peak traffic periods as far as reasonable.	Road closure plan to be updated by 31/12/2024 to include provisions for minising the duration of closures and avoiding peak traffic periods.
3	SSD 6300 Schedule 2, Condition B41	Continue to investigate longer term controls to lower the water level and prevent seepage from the historic underground coal workings.	RCM will continue to investigate options for lowering the water levels in historic underground workings.
4	SSD 6300 Schedule 2, Condition B57	Update the worker induction package or develop a new training package to address all training requirements outlined in Section 6 of the Rix's Creek South Aboriginal Cultural Heritage Management Plan.	Worker induction to be updated to include additional training requirements from Section 6 of the Rix's Creek South Aboriginal Cultural Heritage Management Plan by 31/12/2024.
5	SSD 6300 Schedule 2, Condition B67	Update the Bushfire Management Plan to include a schedule for undertaking proposed bushfire mitigation work including monitoring and maintenance.	A review of the bushfire management plan will be undertaken and a schedule to assess fuel loads will be incorporated in the document by 31/06/2024.
6	EPL 3391 Condition O4.2	Replace signage in place at the effluent discharge utilisation areas with signage that states "Effluent Re-Use Area Keep Out".	Signage to be upgraded to include the exact wording "Effluent Re-Use Area Keep Out" by 31/03/2024.
7	EPL 3391 Condtion R5.6	Ensure the total tonnage of tyres disposed is included in the Heavy Plant-Tyre Disposal Report provided for future Annual Return submissions.	Total tonnage of tyres to be included in the Heavy Plant tyre Disposal Report in the next EPL3391 Annual Return.

Replacement signage at effluent discharge utilisation areas were completed on the 28/03/2024.

A review of the Bush Fire Management Plan is currently underway.

The Road Closure Plan will be updated by 31/12/2024 to document provisions for minimising the duration of closures.

Total tonnage of tyres were reported in the EPL 3391 Annual Return Heavy Plant-Tyre Disposal Report submitted to EPA on the 27/05/2024.

SECTION 11 – INCIDENTS AND NON-COMPLIANCES DURING THE YEM 2024 REPORTING PERIOD.

Incidents that occurred during YEM 2024 are detailed in this section. Non-compliances were reported to relevant agencies during the reporting period.

11.1 Air blast overpressure exceedance

On 12 September 2023 at 2:38pm, Rix's Creek Mine released a blast in West Pit operations at location WS10 LB S6. The blast recorded a single overpressure event at the Wrights monitor (EPA identification 7) of 124.9dB, exceeding the compliance limit of 120dB. No other Rix's Creek Mine blast monitors recorded elevated airblast overpressure results and no complaints were received from the event.

No complaints were received following the localised airblast overpressure event at Wrights monitor. Local landholders, tenants and Community Consultative Committee (CCC) were informed of the event in accordance with the Project Approval (Sch.2 Cond. D6 SSD6300).

The blast was released under favourable meteorological conditions with no enhancement shown on the predictive forecast model.

Rix's Creek Mine undertook a revision of the blast video and it shows that the energy from the blast releases against the low-wall, in a southwest direction towards the Wrights monitor. This confirms that the direction of the energy release was toward the Wrights monitor which minimised the overpressure event to within a very localised area. This localised event is demonstrated by the compliance with overpressure requirements at other surrounding monitors.

Rix's Creek Mine has reviewed the blast process, specific for the geological conditions of the Lower Barrett interburden, and any deficiencies identified will be resolved to prevent reoccurrence of the event.

The EPA issued an advisory letter on the 27/09/2023 stating that the investigation was undertaken and no further regulatory action will be undertaken. DPHI provided correspondence on the 11/01/2024 stating that the incident report was reviewed and i that no further enforcement action is proposed.

11.2 Offical Caution Resources Regulator

On the 22/12/2023 Resources Regulator issued Rix's Creek Mine an official caution for late submission of the Rehabilitation Cost Estimate (RCE) for 2023 reporting period. Rix's Creek Mine has put in place systems to ensure that the RCE is submitted with future Forward Programs and Annual Rehabilitation Reports.

SECTION 12 – ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

Mining is to continue within the West Pit open cut and Camberwell open cut area over the duration of YEM25. The mining technique at RCM is a multi-seam bench system which mines up to six seams and numerous splits, mining down to the Hebden seam. The mine plan is designed to maximise resource recovery of the whole suite of seams within the lease.

The Western out of pit dump (WOOPD) was established during YEM23 and will continue to be used during YEM25. Overburden and interburden from West Pit operations will be emplaced at the WOOPD. For YEM25 it is anticipated than another 47.6ha will be disturbed at the WS15 block as well as a small section at the WOOPD as dumping continues within the area. 17.89ha of rehabilitation is scheduled for completion as per the Year 1 YEM 2025 Forward Program.

In pit dumping within West pit operations will continue as coal is mined down to the Hebden seams. The in pit dump will move in a northerly direction away from the Singleton Township. As the in pit dump reaches final landform, topsoil and subsoil material from the WOOPD will be used to rehabilitate West Pit South operations.

Material will continue to be dumped in South pit Tailings Emplacement Area 3. Emplacement Area 3 is currently being capped under a High Risk Activity Notification (Work Health and Safety Mines and Petroleum Sites Regulation 2022). Material from west pit operations will be used to continue dumping in the former south pit area.

In the Camberwell Pit operations, mining will progress in the southern section down to the Upper Barrett seam. The Dulwich block at the North of the Camberwell Operations will continue to be mined. In pit dumping will continue to backfill the Camberwell Pit as the mining progresses.

Further improvements to the Rix's Creek environmental systems include the ongoing implementation and use of the INX software package to track environmental compliance requirements.

Environmental management is an ongoing process at Rix's Creek Mine with continual improvement being made to the existing systems already in place.

Table 33. Environmental Performance Improvement Activities

Environmental Performance Improvement Activities	Target Date
Rix's Creek Mine Rehabilitation Progression	Q1-Q4 YEM25
RCN BOA Biennial Flora and Fauna Monitoring	Q2 – Q4 YEM25
Teledata System Environmental Updates/ process improvements	Q4 YEM25
Quality Assurance process improvements for Rehabilitation	Q4 YEM25

SECTION 13 MANAGEMENT PLAN REVIEW

Management Plans are required to be updated when a review is triggered. An update can be triggered by any of the following:-

- Action from independent environmental audit;
- Submission of Annual Review;
- Approval modification;
- Result of an environmental incident; and changes to the operation.

The management plans for both RCN and RCS as required under their relevant approvals are listed in **Table 34** along with their relevant status. Management Plans were updated to include SSD 6300 conditions during the 2021 period and for subsequent modifications as required.. Management Plans were reviewed during YEM 2024 in accordance with the conditional review requirements. Where updates or changes were identified Management Plans were updated and submitted to the relevant agencies for consultation and approval.

Table 34. Environmental Management Plans

Approval Authority	Approval Date	Review Completed YEM 24	Title **Management Plan currently under review*
	Rixs Creek North		
DPE	21/12/2017		Biodiversity Management Plan
DPE	19/2/2016	-	Heritage Management Plan
DPIE	16/10/2020	-	Rix's Creek North Glennies Creek and Station Creek Riparian Management Programme
DA49/94	**Rix's Creek South**		
DPE	22/1/2014	-	Rix's Creek South Final Void Management Plan
DPIE	22/1/2014	-	Rix's Creek South Mine Closure Plan
DPE	22/1/2014	-	Rix's Creek Mine Erosion and Sediment Control Plan
DPE	22/1/2014	-	Rix's Creek Mine Traffic Management Plan
DPE	22/1/2014	-	Rix's Creek South Landscape Management Plan
SSD 6300	**Rixs Creek South**		
DPE	21/01/2021	-	Rix's Creek South Rehabilitation Strategy
DPE	18/12/2020	-	Rix's Creek South Historic Heritage Management Plan
DPE	23/12/2020	-	Rix's Creek South Biodiversity Management Plan
DPE	02/09/2020	-	Rix's Creek South Aboriginal Cultural Heritage Management Plan
DPE	17/01/2022		Rix's Creek South Coalceous Material Haulage Management Plan
RR	29/07/2022		Rix's Creek South Rehabilitation Management Plan
	RCM Integrated Management Plan to cover Rixs Creek North & Rixs Creek South Operation		
DPE	11/03/2021		Environmental Management Strategy
DPE	6/12/2023	21/11/2023	Noise Management Plan
DPE	23/12/2020	-	Blast Management Plan
DPE	23/12/2020	31/03/2024*	Air Quality & Greenhouse Gas Management Plan
DPE	15/03/2021	31/03/2024*	Water Management Plan
DPE	30/10/2019	-	Bushfire Management Plan
LGA	17/08/2020	-	Social Impact Management Plan

DPE	30/11/2021		RCM Exploration Activities Management Plan

Appendix 1

Rix's Creek Complex Surface Water Sampling Results

ANNUAL REVIEW YEM 2024 – RIX'S CREEK MINE

Rixs Creek North & Rixs Creek South

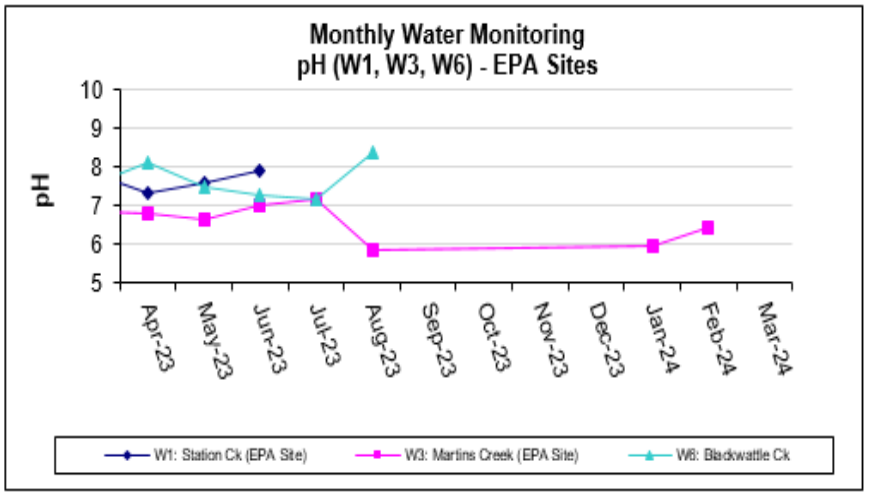
Sampled by RCN																	
Date Sampled	Month Sampled	**W1**: Station Ck (EPA Site)				**W3**: Martins Creek (EPA Site)				**W4**: Glennies Ck Up (nobles Xing)				**W5**: Glennies Ck Down (Oxfords)			
		pH	EC uS/cm	TSS mg/l	TDS mg/l	pH	EC uS/cm	TSS mg/l	TDS mg/l	pH	EC uS/cm	TSS mg/l	TDS mg/l	pH	EC uS/cm	TSS mg/l	TDS mg/l
26/04/2023	Apr-23	7.31	1120	15	612	6.8	202	48	791	7.66	476	10	298	7.67	466	12	270
31/05/2023	May-23	7.58	1070	8	590	6.64	383	39	570	7.87	434	<5	240	7.92	579	<5	319
28/06/2023	Jun-23	7.9	1200	10	642	7.01	343	16	599	7.74	527	14	276	7.78	544	7	288
28/07/2023	Jul-23					7.17	253	24	703	7.91	420	<5	248	7.89	420	6	234
18/08/2023	Aug-23					5.86	117	174	895	7.66	444	5	242	7.68	448	8	224
22/09/2023	Sep-23									7.79	471	11	287	7.89	498	16	300
19/10/2023	Oct-23									7.77	406	10	253	7.85	428	19	246
23/11/2023	Nov-23									8.1	417	12	260	8	456	20	282
22/12/2023	Dec-23									6.9	337	8	194	7.46	325	13	182
18/01/2024	Jan-24					5.96	89	251	1630	7.32	410	14	292	7.68	457	14	290
16/02/2024	Feb-24					6.44	90	80	1290	7.41	315	9	223	7.56	322	7	219
12/03/2024	Mar-24									7.96	389	12	198	7.46	355	11	181

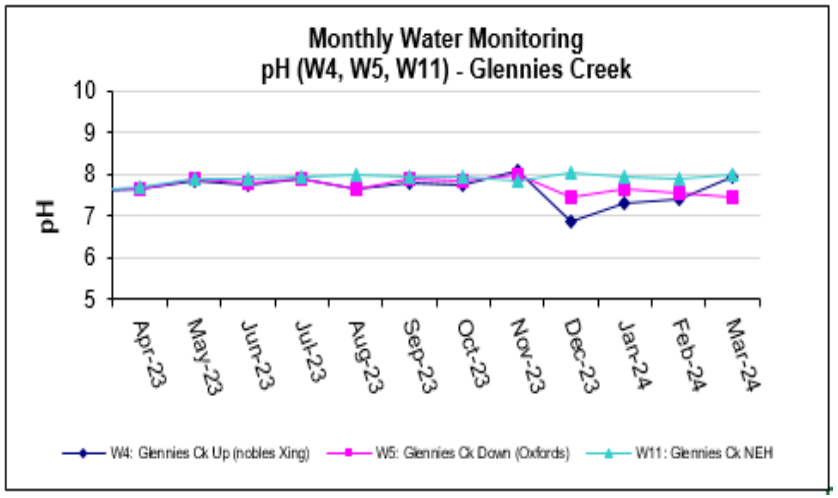
Sampled by RCN																									
Date Sampled	Month Sampled	**W6**: Blackwattle Ck				**W7**: Stony Ck				W8: Tisdells Ck				W9: Tisdell Dam				**W10**: Dam C4 (EPA Site)					**W11**: Glennies Ck NEH			
		pH	EC uS/cm	TSS mg/l	TDS mg/l	pH	EC uS/cm	TSS mg/l	TDS mg/l	pH	EC uS/cm	TSS mg/l	TDS mg/l	pH	EC uS/cm	TSS mg/l	TDS mg/l	Disch. Flow	pH	EC uS/cm	TSS mg/l	TDS mg/l	pH	EC uS/cm	TSS mg/l	TDS mg/l
26/04/2023	Apr-23	8.11	10800	<5	6410	7.09	335	13	254										7.73	1110	<5	632	7.72	460	8	286
31/05/2023	May-23	7.5	11800	<5	7640	7.04	395	7	271										7.78	1120	<5	624	7.91	576	<5	320
28/06/2023	Jun-23	7.27	12600	14	8210	7.23	433	10	294										7.99	1180	6	624	7.91	532	7	288
28/07/2023	Jul-23	7.15	14300	<5	9600	7.19	426	13	266										7.98	1160	<5	653	7.95	424	<5	252
18/08/2023	Aug-23	8.39	7290	<5	4270	7.22	454	7	298										8.14	1110	8	582	8	447	9	234
22/09/2023	Sep-23					7.28	474	6	340										8.52	1190	6	696	7.97	520	15	305
19/10/2023	Oct-23																		8.56	1220	6	633	7.94	408	12	220
23/11/2023	Nov-23					6.94	873	17	636										8.88	1190	12	717	7.87	479	9	290
22/12/2023	Dec-23																		8.92	1440	10	786	8.04	307	17	173
18/01/2024	Jan-24																		9.01	1310	<5	850	7.96	442	15	308
16/02/2024	Feb-24																		8.89	1370	<5	830	7.88	318	9	213
12/03/2024	Mar-24																		9.06	1430	8	770	8	374	13	198

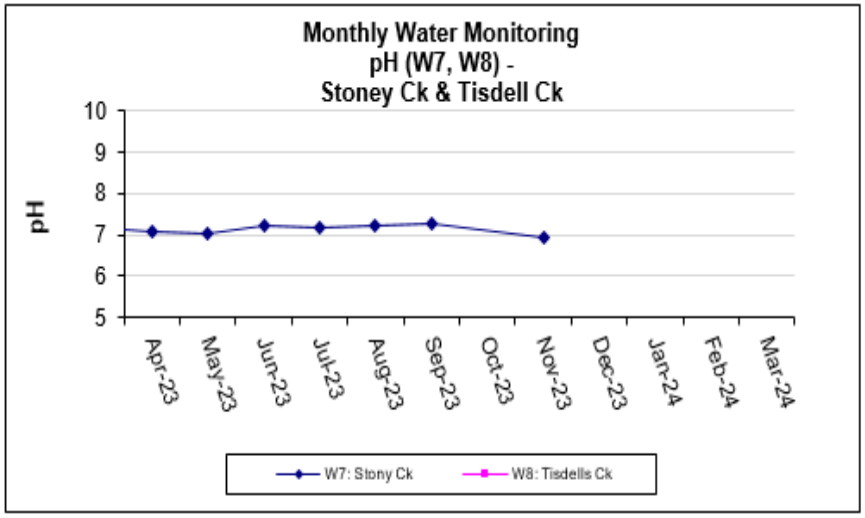
Rixs Creek North & Rixs Creek South

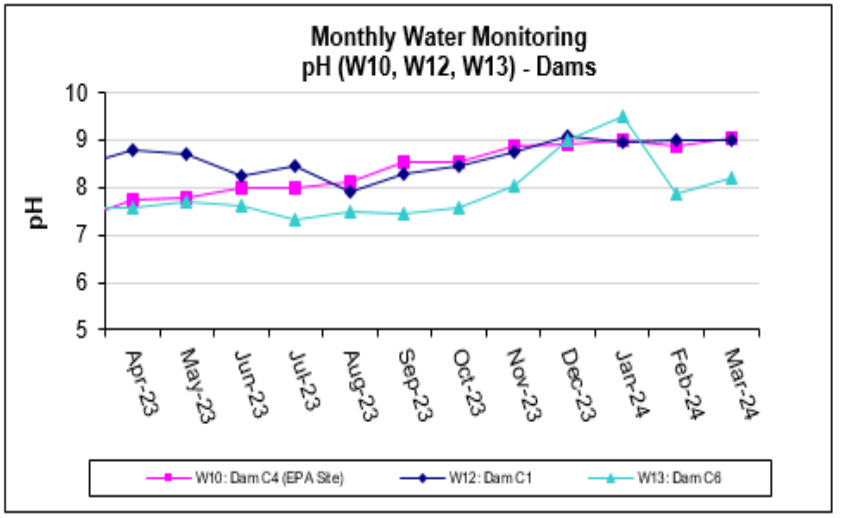
Sampled by RCN																			
Date Sampled	Month Sampled	W12: Dam C1				W13: Dam C6				W14: Dam C3				W15: Dam C6A				W16: Dam C8 (South Pit)			
		pH	EC uS/cm	TSS mg/l	TDS mg/l	pH	EC uS/cm	TSS mg/l	TDS mg/l	pH	EC uS/cm	TSS mg/l	TDS mg/l	pH	EC uS/cm	TSS mg/l	TDS mg/l	pH	EC uS/cm	TSS mg/l	TDS mg/l
26/04/2023	Apr-23	8.81	1130	24	611	7.57	209	5	166	7.82	1130	12	604	7.43	232	9	128	8.63	2860	16	1800
31/05/2023	May-23	8.72	1340	9	765	7.72	206	6	139	8.36	1290	29	709	7.6	240	8	162	8.65	3000	24	1950
28/06/2023	Jun-23	8.25	1600	13	834	7.6	232	14	137	7.88	1630	60	924	7.5	277	8	156	8.66	3230	112	2100
28/07/2023	Jul-23	8.47	1730	6	956	7.31	222	42	158	8.16	1650	36	907	7.2	267	14	171	8.58	3300	150	2100
18/08/2023	Aug-23	7.93	1840	146	930	7.5	220	24	153	8.76	1910	18	1140	7.44	253	12	152	8.64	3420	138	2370
22/09/2023	Sep-23	8.29	2080	<5	1270	7.46	245	6	196	8.6	1950	30	1260	8.69	285	16	216	8.41	3500	104	2490
19/10/2023	Oct-23	8.46	2280	8	1240	7.58	275	28	268	8.8	2330	51	1330	7.63	315	16	197	8.75	4020	21	2700
23/11/2023	Nov-23	8.73	2550	6	1600	8.04	311	36	262	9.83	2490	25	1860	8	350	11	250	8.73	4450	20	3470
22/12/2023	Dec-23	9.08	3090	9	1700	9.00	430	47	304	9.73	2640	41	1570	7.79	519	22	323	8.79	4700	31	3270
18/01/2024	Jan-24	8.97	2960	<5	2050	9.51	392	46	419	9.45	2860	28	1710	7.68	516	25	463	9.29	5050	73	3430
16/02/2024	Feb-24	9.02	3270	<5	2240	7.88	480	58	410	8.43	3420	156	2060	7.64	606	21	456	9.29	5740	115	3990
12/03/2024	Mar-24	9	3570	8	2050	8.22	556	44	360	8.99	6530	135	4170	7.65	703	19	399	9.33	6420	136	4460
										Sampled by RCN								Sampled by RCN			

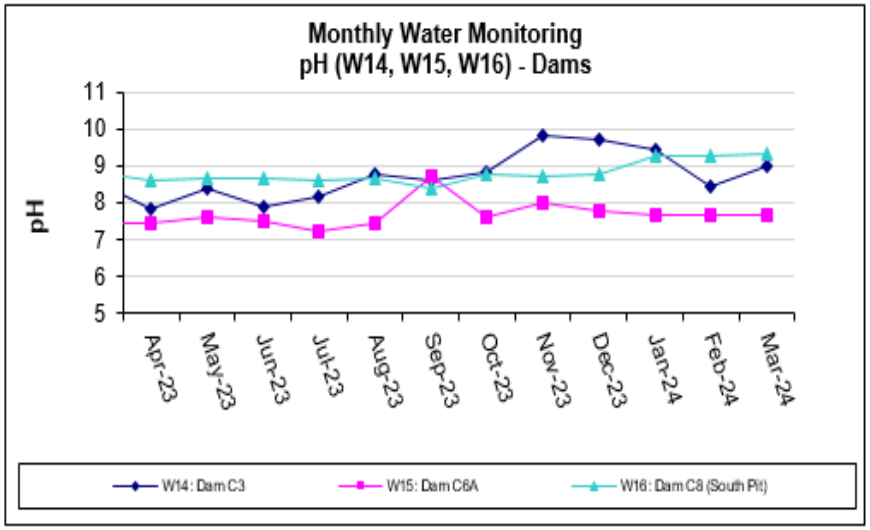
Sampled by RCN																			
Date Sampled	Month Sampled	W17: Dam C2				W18: Dam C5				W19: Dam D1				W20: North Dam 1				W21: North Dam 2			
		pH	EC uS/cm	TSS mg/l	TDS mg/l	pH	EC uS/cm	TSS mg/l	TDS mg/l	pH	EC uS/cm	TSS mg/l	TDS mg/l	pH	EC uS/cm	TSS mg/l	TDS mg/l	pH	EC uS/cm	TSS mg/l	TDS mg/l
26/04/2023	Apr-23	8.06	1170	10	681	7.44	215	10	125	8.7	5260	15	3200	8.35	9050	<5	5860	7.71	638	28	474
31/05/2023	May-23	8.11	1380	16	682	7.77	243	6	152	8.61	5490	17	3500	8.35	9350	16	6200	8.14	642	14	406
28/06/2023	Jun-23	7.92	1560	16	825	7.86	279	18	166	8.65	5890	9	3620	8.32	9780	<5	6290	8.26	703	10	416
28/07/2023	Jul-23	7.83	1600	18	884	7.54	273	9	165	8.59	6290	12	3950	8.23	9530	36	6310	8.18	730	22	404
18/08/2023	Aug-23	7.83	1540	26	839	7.74	263	9	167	8.62	6200	9	3970	8.31	9400	8	6660	8.26	804	13	479
22/09/2023	Sep-23	8.31	1740	28	1020	7.78	302	21	177	8.7	6750	19	4270	8.31	9510	17	7070	8.45	852	16	570
19/10/2023	Oct-23	8.95	1810	19	987	7.71	344	13	269	8.74	7060	26	4300	8.63	1330	47	794	8.58	9990	31	6310
23/11/2023	Nov-23	9.9	1770	8	1100	8.21	398	16	351	8.88	7600	17	4580	8.55	9710	<5	7540	8.48	1910	71	1510
22/12/2023	Dec-23	9.29	2190	12	1160	8.4	524	28	300	8.83	8360	9	5160	8.52	10300	23	6820				
18/01/2024	Jan-24	8.99	1980	9	1350	9.05	505	28	398	8.84	7690	7	5630	8.6	9790	10	6320				
16/02/2024	Feb-24	8.93	2240	<5	1490	9.12	543	34	460	8.86	7780	<5	5520	8.48	10600	12	7270				
12/03/2024	Mar-24	9.31	2360	12	1310	7.89	662	40	394	8.95	8360	<5	5340	8.45	10100	17	6580				
														Sampled by RCN				Sampled by RCN			

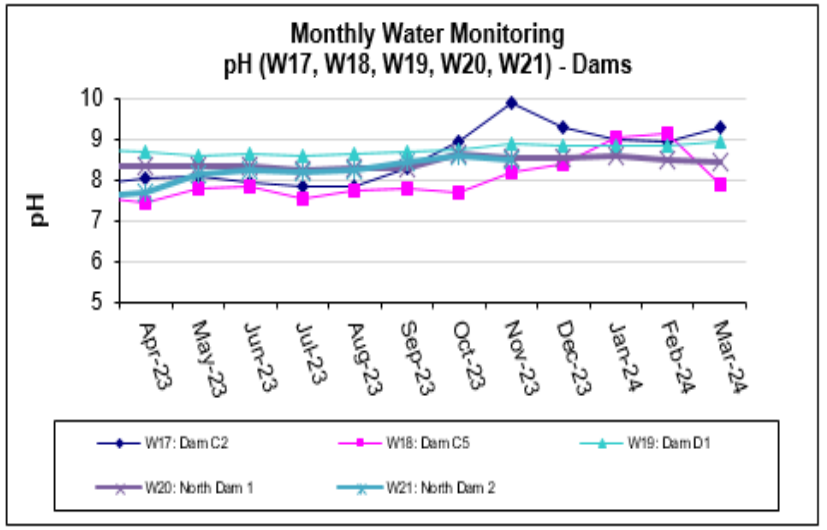

Monthly Water Monitoring
pH (W1, W3, W6) - EPA Sites
pH
10
9
8
7
6
5
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W1: Station Ck (EPA Site)
W3: Martins Creek (EPA Site)
W6: Blackwattle Ck

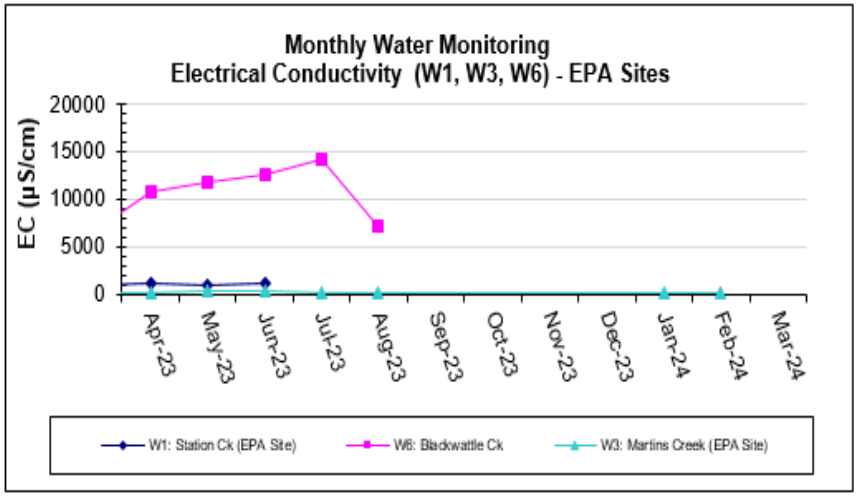

Monthly Water Monitoring
pH (W4, W5, W11) - Glennies Creek
pH
10
9
8
7
6
5
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W4: Glennies Ck Up (nobles Xing)
W5: Glennies Ck Down (Oxfords)
W11: Glennies Ck NEH

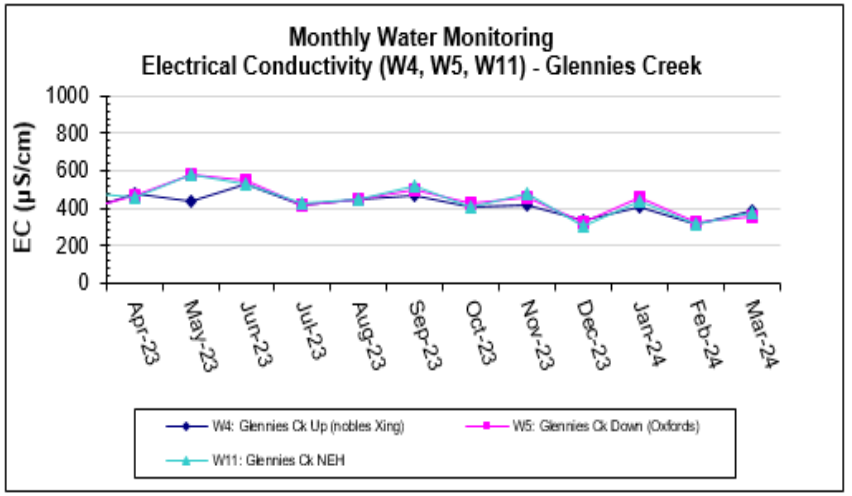

Monthly Water Monitoring
pH (W7, W8) -
Stoney Ck & Tisdell Ck
pH
10
9
8
7
6
5
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W7: Stony Ck
W8: Tisdells Ck

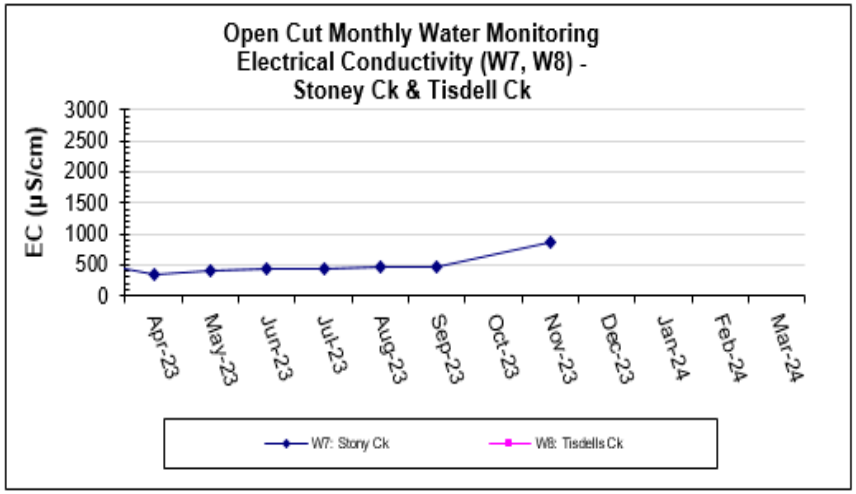

Monthly Water Monitoring
pH (W10, W12, W13) - Dams
pH
10
9
8
7
6
5
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W10: Dam C4 (EPA Site)
W12: Dam C1
W13: Dam C6

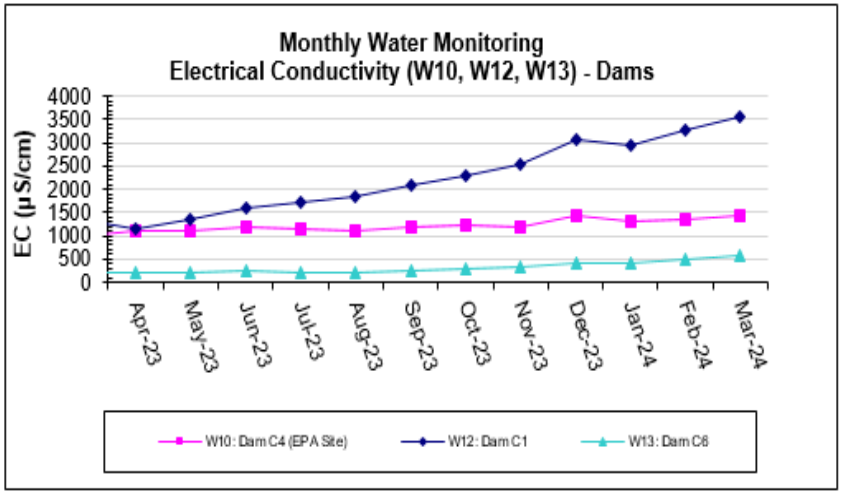

Monthly Water Monitoring
pH (W14, W15, W16) - Dams
pH
11
10
9
8
7
6
5
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W14: Dam C3
W15: Dam C6A
W16: Dam C8 (South Pit)

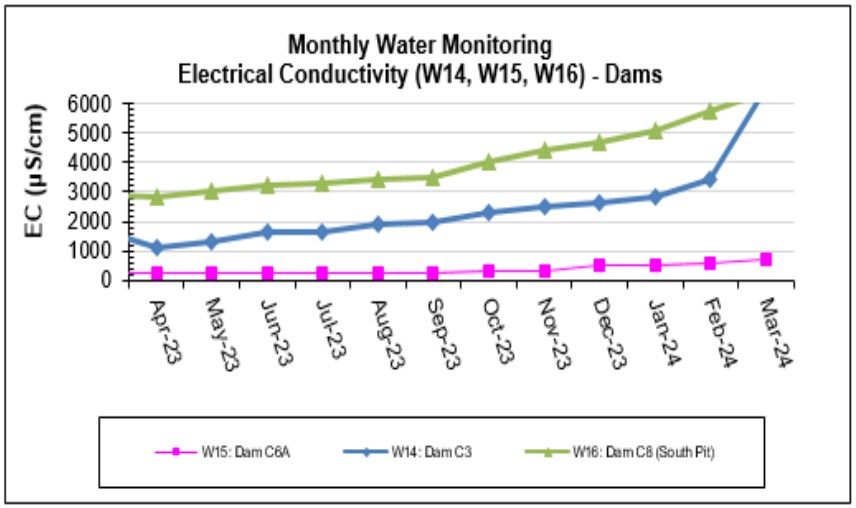

Monthly Water Monitoring
pH (W17, W18, W19, W20, W21) - Dams
pH
10
9
8
7
6
5
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W17: Dam C2
W18: Dam C5
W19: Dam D1
W20: North Dam 1
W21: North Dam 2

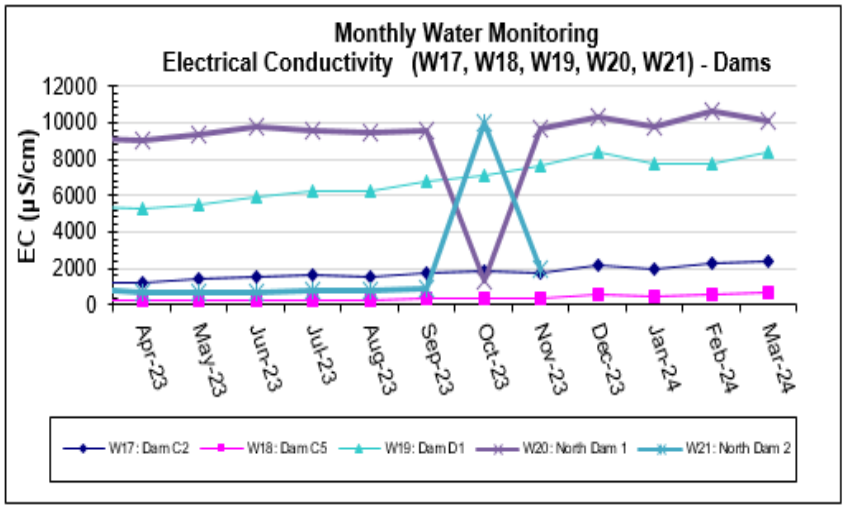

Monthly Water Monitoring
Electrical Conductivity (W1, W3, W6) - EPA Sites
EC (µS/cm)
20000
15000
10000
5000
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W1: Station Ck (EPA Site)
W6: Blackwattle Ck
W3: Martins Creek (EPA Site)

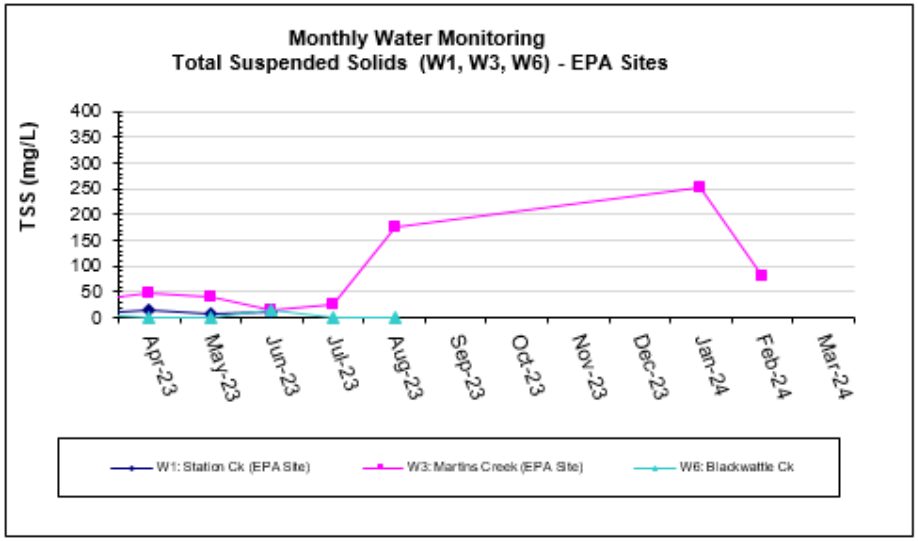

Monthly Water Monitoring
Electrical Conductivity (W4, W5, W11) - Glennies Creek
EC (µS/cm)
1000
800
600
400
200
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W4: Glennies Ck Up (nobles Xing)
W5: Glennies Ck Down (Oxfords)
W11: Glennies Ck NEH

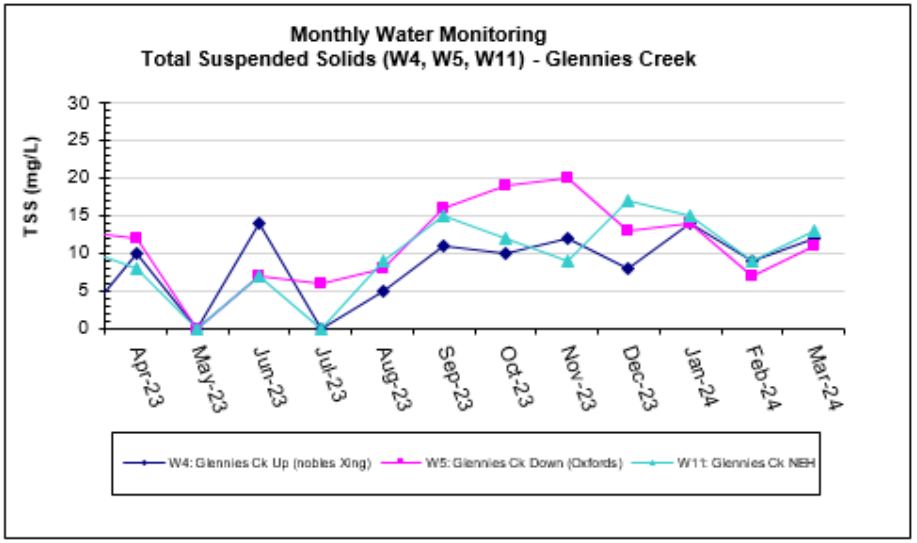

Open Cut Monthly Water Monitoring
Electrical Conductivity (W7, W8) -
Stoney Ck & Tisdell Ck
EC (µS/cm)
3000
2500
2000
1500
1000
500
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W7: Stony Ck
W8: Tisdells Ck

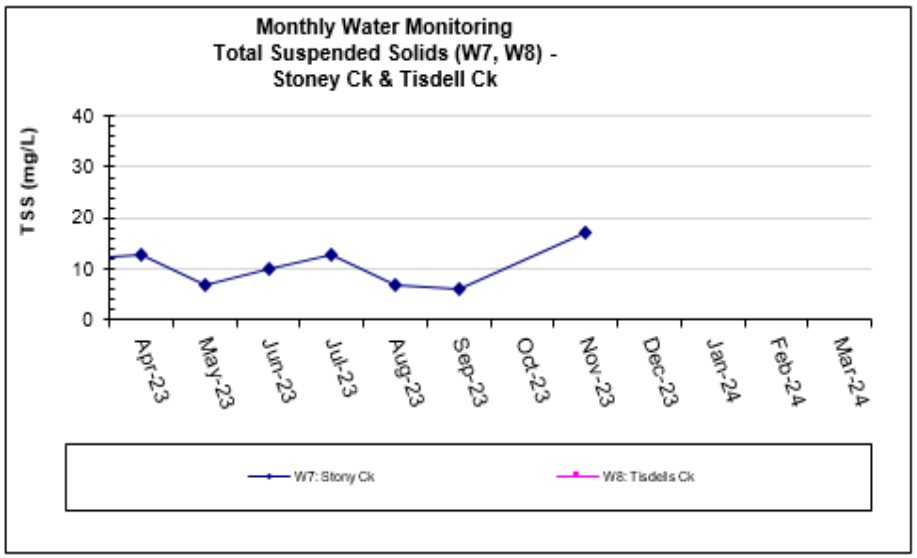

Monthly Water Monitoring
Electrical Conductivity (W10, W12, W13) - Dams
EC (µS/cm)
4000
3500
3000
2500
2000
1500
1000
500
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W10: Dam C4 (EPA Site)
W12: Dam C1
W13: Dam C6

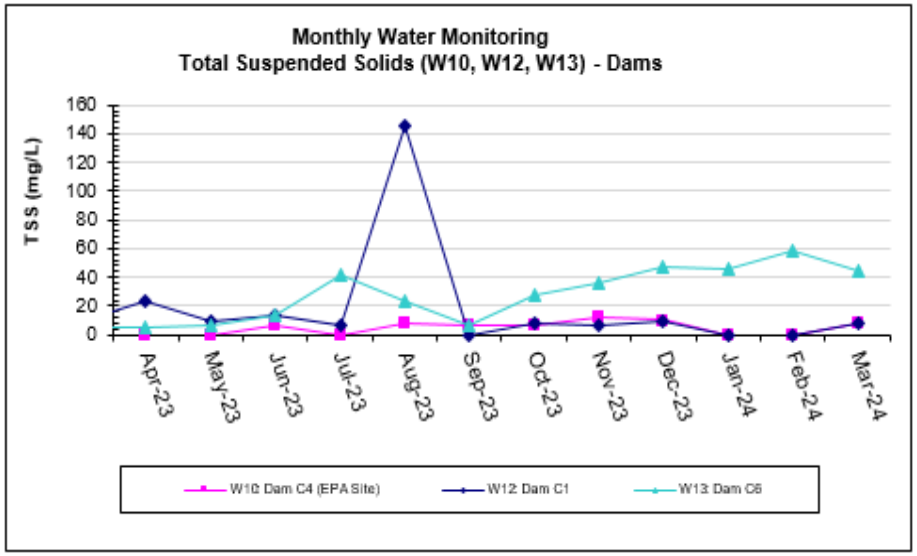

Monthly Water Monitoring
Electrical Conductivity (W14, W15, W16) - Dams
EC (µS/cm)
6000
5000
4000
3000
2000
1000
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W15: Dam C6A
W14: Dam C3
W16: Dam C8 (South Pit)

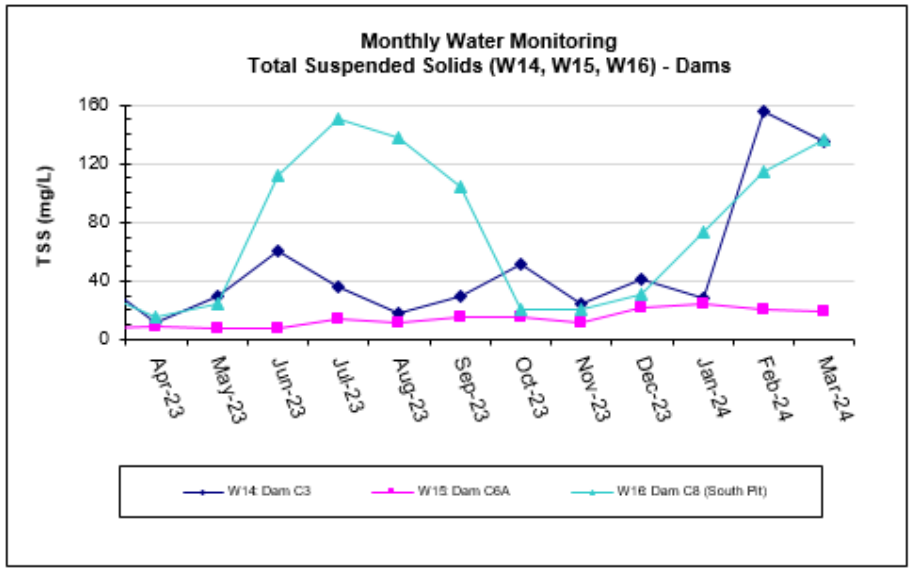

Monthly Water Monitoring
Electrical Conductivity (W17, W18, W19, W20, W21) - Dams
EC (µS/cm)
12000
10000
8000
6000
4000
2000
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W17: Dam C2
W18: Dam C5
W19: Dam D1
W20: North Dam 1
W21: North Dam 2

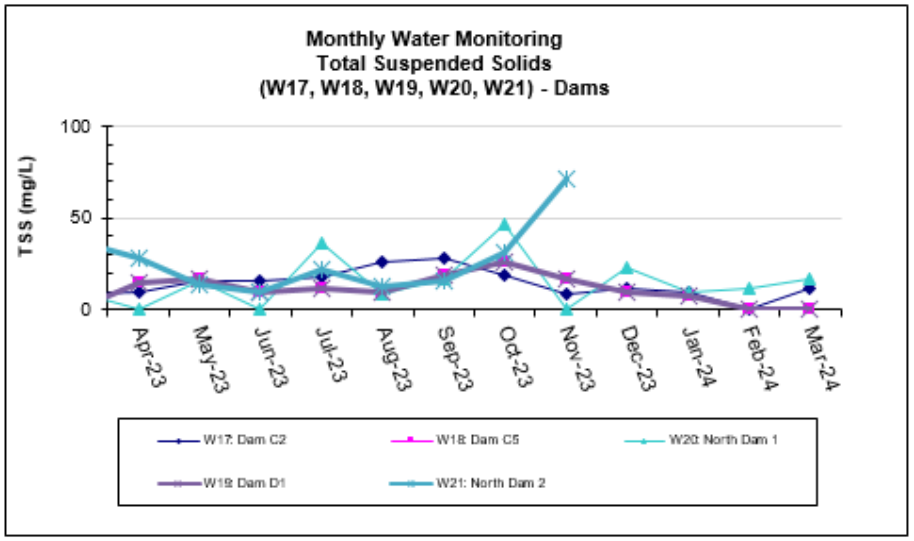

Monthly Water Monitoring
Total Suspended Solids (W1, W3, W6) - EPA Sites
TSS (mg/L)
400
350
300
250
200
150
100
50
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W1: Station Ck (EPA Site)
W3: Martins Creek (EPA Site)
W6: Blackwattle Ck

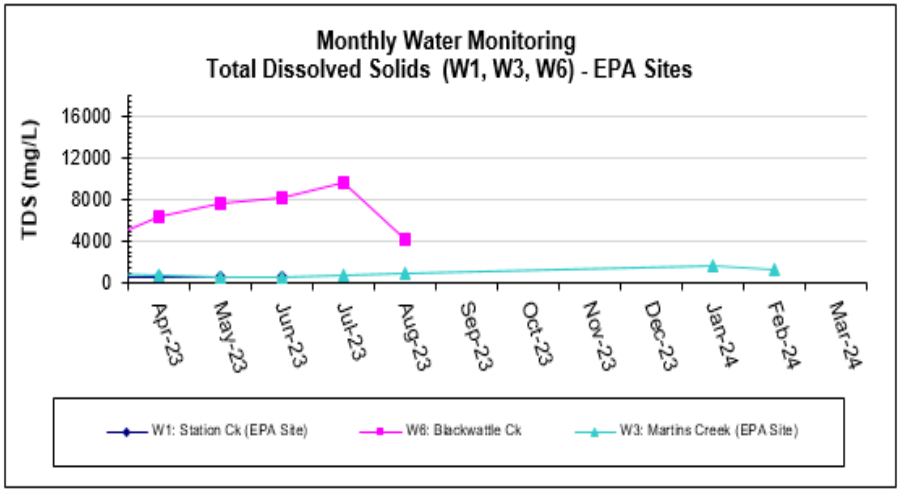

Monthly Water Monitoring
Total Suspended Solids (W4, W5, W11) - Glennies Creek
TSS (mg/L)
30
25
20
15
10
5
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W4: Glennies Ck Up (nobles Xing)
W5: Glennies Ck Down (Oxfords)
W11: Glennies Ck NEH

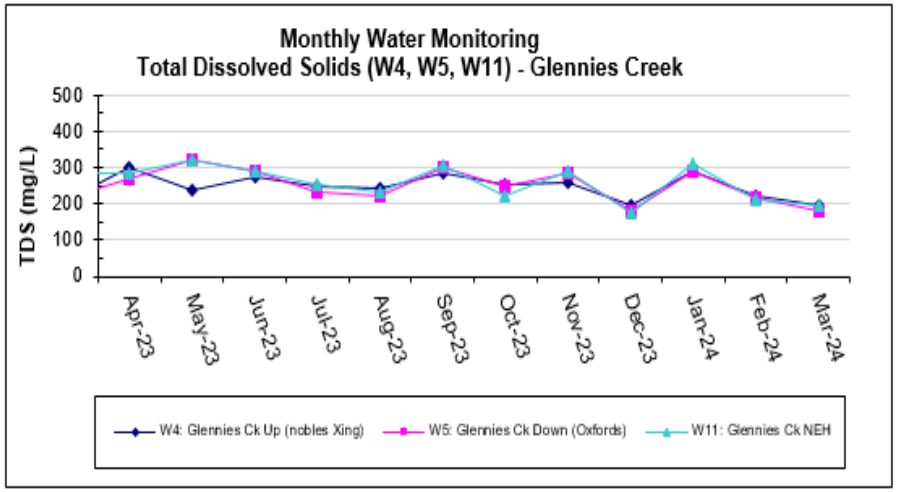

Monthly Water Monitoring
Total Suspended Solids (W7, W8) -
Stoney Ck & Tisdell Ck
TSS (mg/L)
40
30
20
10
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W7: Stony Ck
W8: Tisdells Ck

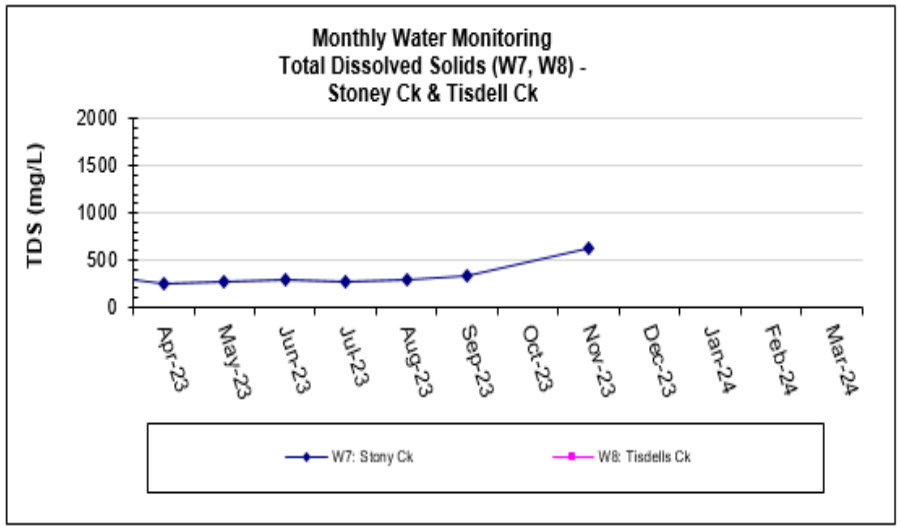

Monthly Water Monitoring
Total Suspended Solids (W10, W12, W13) - Dams
TSS (mg/L)
160
140
120
100
80
60
40
20
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W10: Dam C4 (EPA Site)
W12: Dam C1
W13: Dam C6

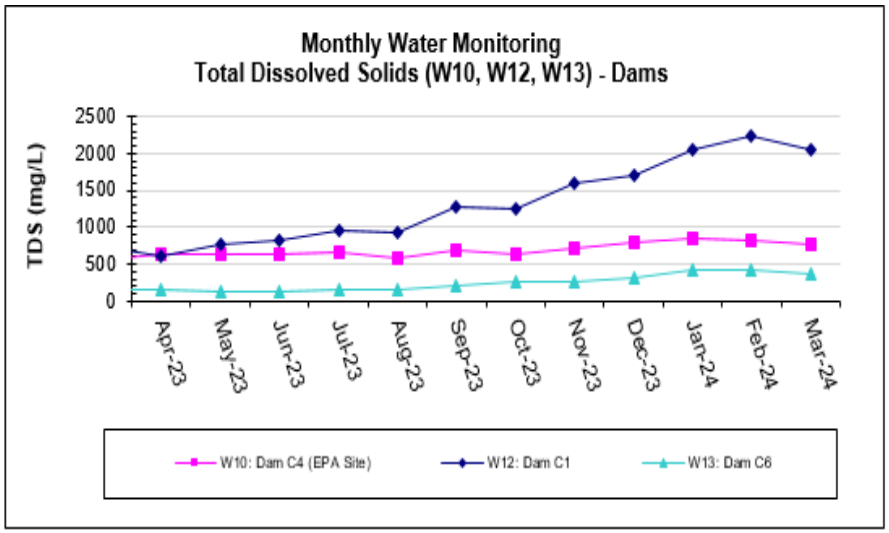

Monthly Water Monitoring
Total Suspended Solids (W14, W15, W16) - Dams
TSS (mg/L)
160
120
80
40
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W14: Dam C3
W15: Dam C6A
W16: Dam C8 (South Pit)

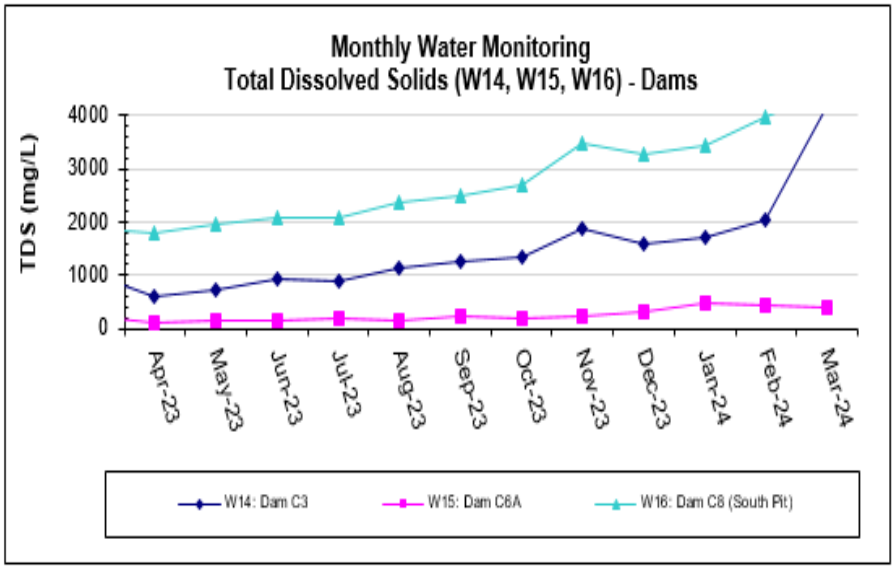

Monthly Water Monitoring
Total Suspended Solids
(W17, W18, W19, W20, W21) - Dams
TSS (mg/L)
100
50
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W17: Dam C2
W18: Dam C5
W20: North Dam 1
W19: Dam D1
W21: North Dam 2

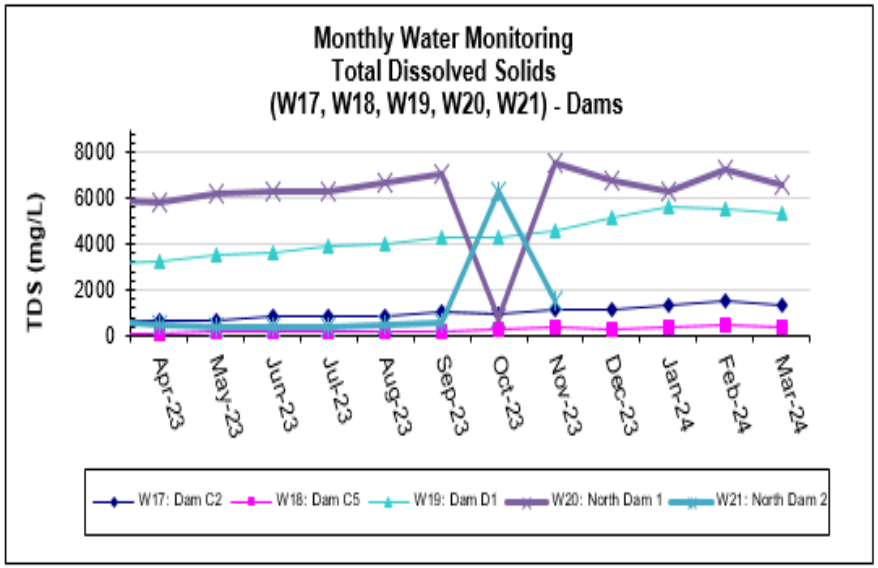

Monthly Water Monitoring
Total Dissolved Solids (W1, W3, W6) - EPA Sites
TDS (mg/L)
16000
12000
8000
4000
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W1: Station Ck (EPA Site)
W6: Blackwattle Ck
W3: Martins Creek (EPA Site)

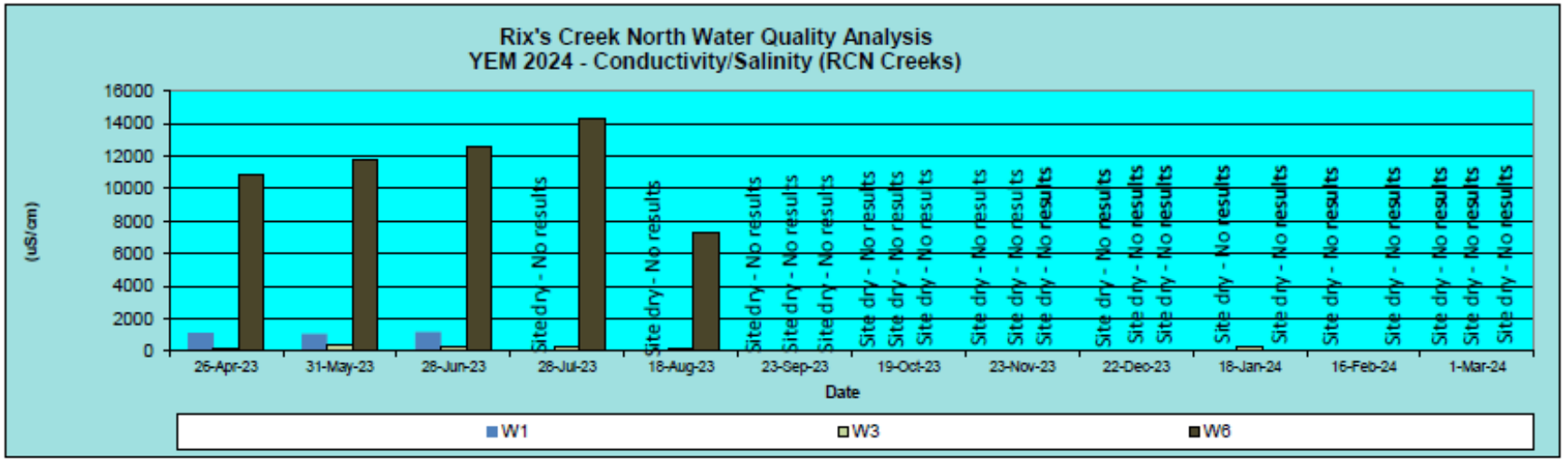

Monthly Water Monitoring
Total Dissolved Solids (W4, W5, W11) - Glennies Creek
TDS (mg/L)
500
400
300
200
100
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W4: Glennies Ck Up (nobles Xing)
W5: Glennies Ck Down (Oxfords)
W11: Glennies Ck NEH

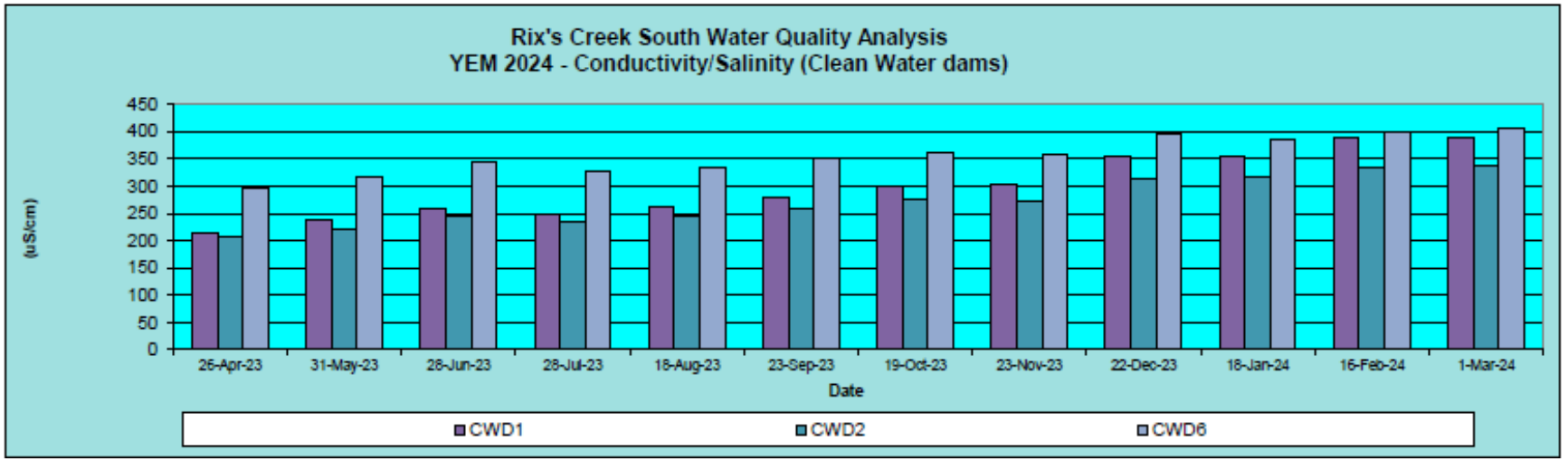

Monthly Water Monitoring
Total Dissolved Solids (W7, W8) -
Stoney Ck & Tisdell Ck
TDS (mg/L)
2000
1500
1000
500
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W7: Stony Ck
W8: Tisdells Ck

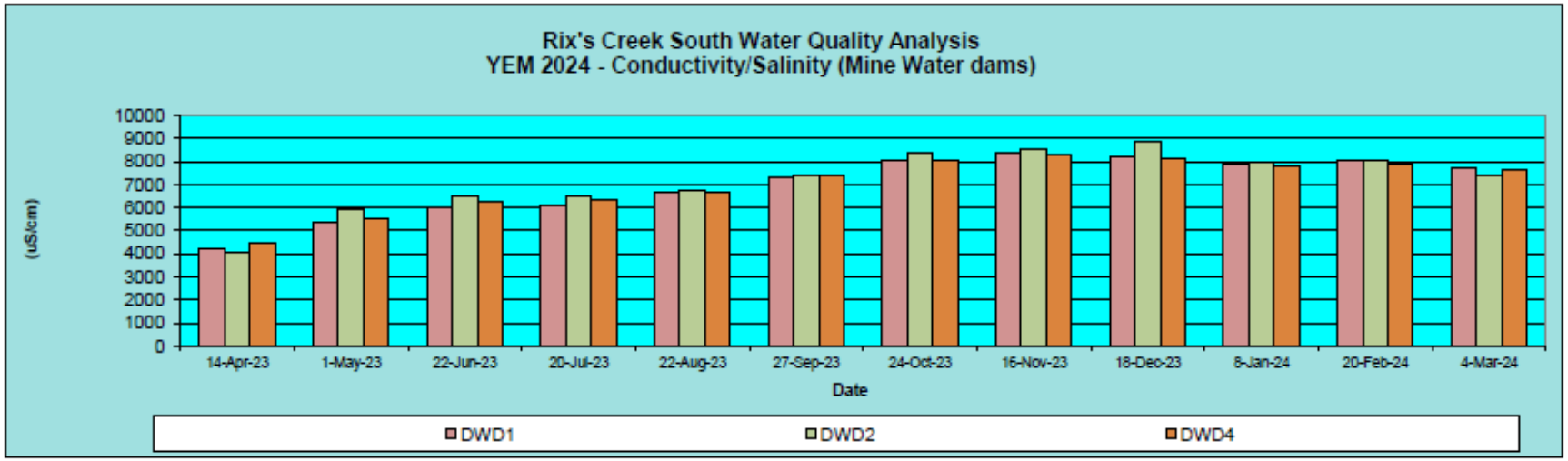

Monthly Water Monitoring
Total Dissolved Solids (W10, W12, W13) - Dams
TDS (mg/L)
2500
2000
1500
1000
500
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W10: Dam C4 (EPA Site)
W12: Dam C1
W13: Dam C6

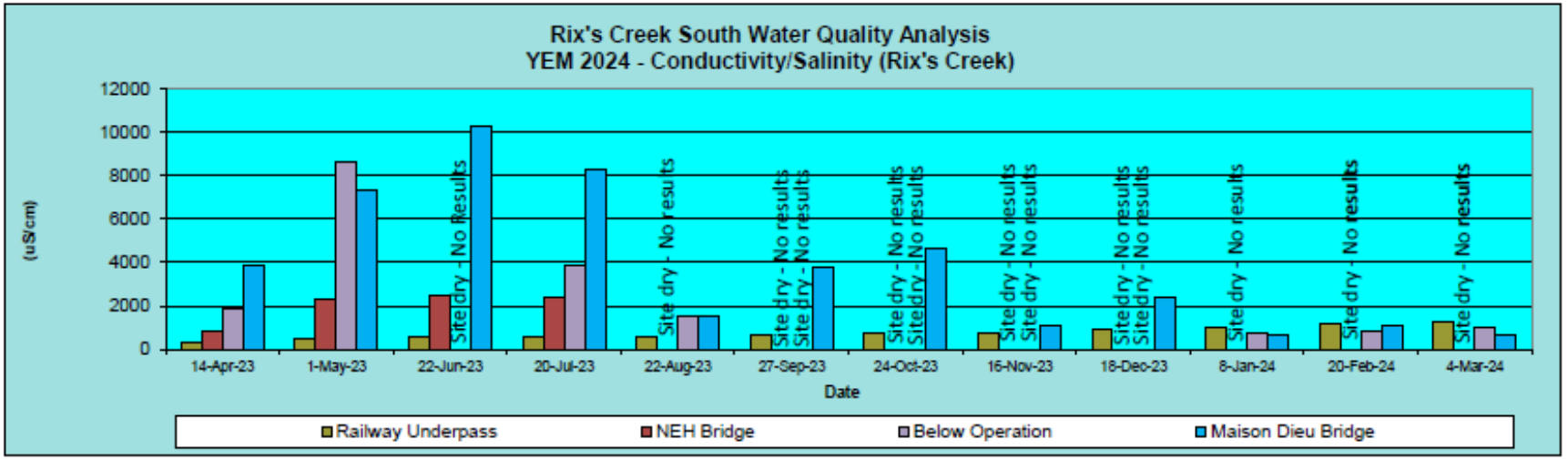

Monthly Water Monitoring
Total Dissolved Solids (W14, W15, W16) - Dams
TDS (mg/L)
4000
3000
2000
1000
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W14: Dam C3
W15: Dam C6A
W16: Dam C8 (South Pit)

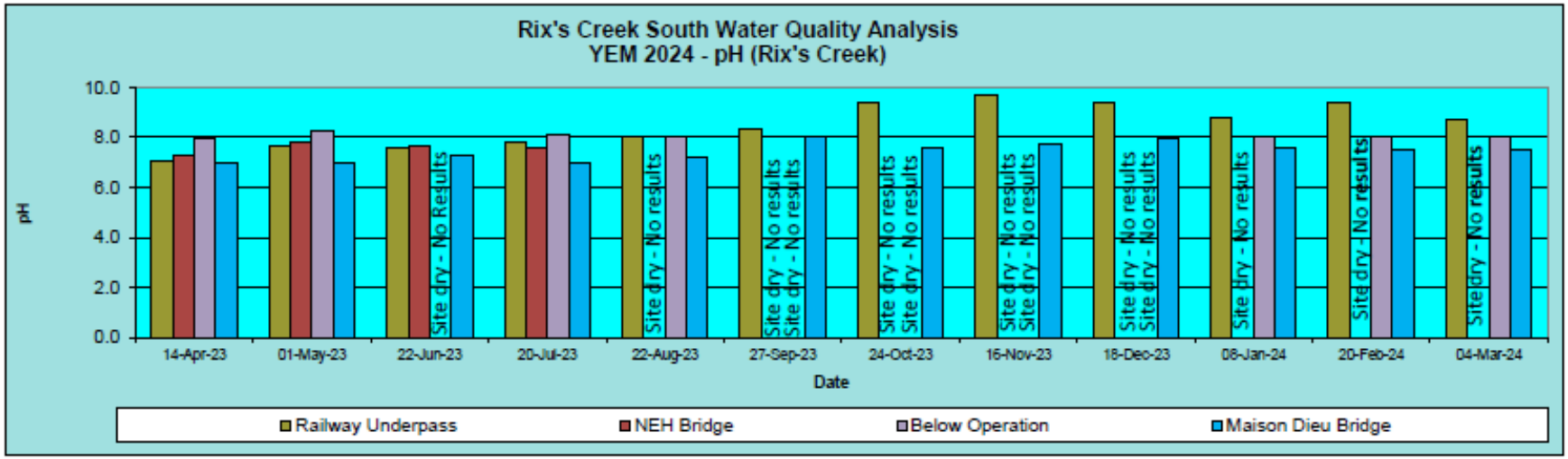

Monthly Water Monitoring
Total Dissolved Solids
(W17, W18, W19, W20, W21) - Dams
TDS (mg/L)
8000
6000
4000
2000
0
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
W17: Dam C2
W18: Dam C5
W19: Dam D1
W20: North Dam 1
W21: North Dam 2

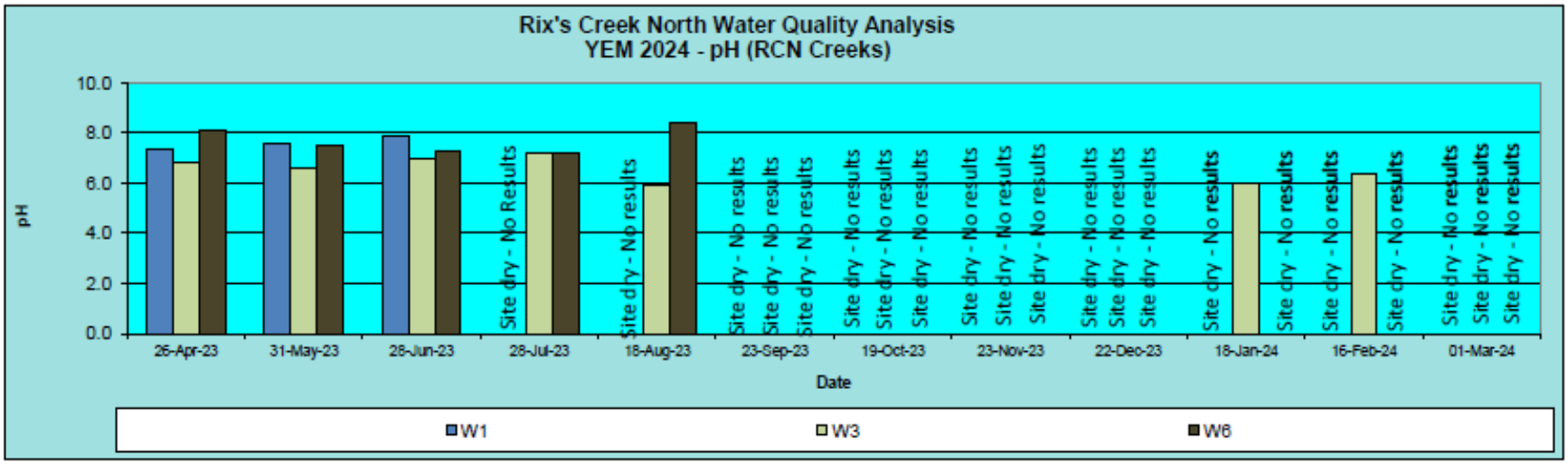

Rix's Creek North Water Quality Analysis
YEM 2024 - Conductivity/Salinity (RCN Creeks)
(uS/cm)
16000
14000
12000
10000
8000
6000
4000
2000
0
Site dry - No results
26-Apr-23
31-May-23
28-Jun-23
28-Jul-23
18-Aug-23
23-Sep-23
19-Oct-23
23-Nov-23
22-Dec-23
18-Jan-24
16-Feb-24
1-Mar-24
Date
W1
W3
W6

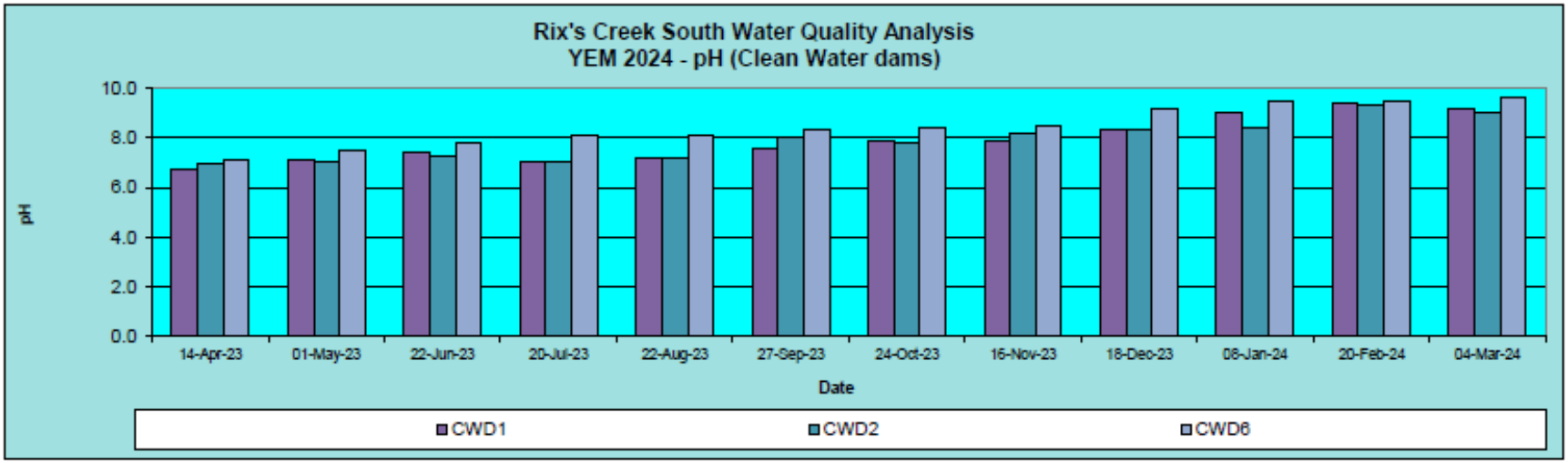

Rix's Creek South Water Quality Analysis
YEM 2024 - Conductivity/Salinity (Clean Water dams)
(uS/cm)
450
400
350
300
250
200
150
100
50
0
26-Apr-23
31-May-23
28-Jun-23
28-Jul-23
18-Aug-23
23-Sep-23
19-Oct-23
23-Nov-23
22-Dec-23
18-Jan-24
16-Feb-24
1-Mar-24
Date
CWD1
CWD2
CWD6

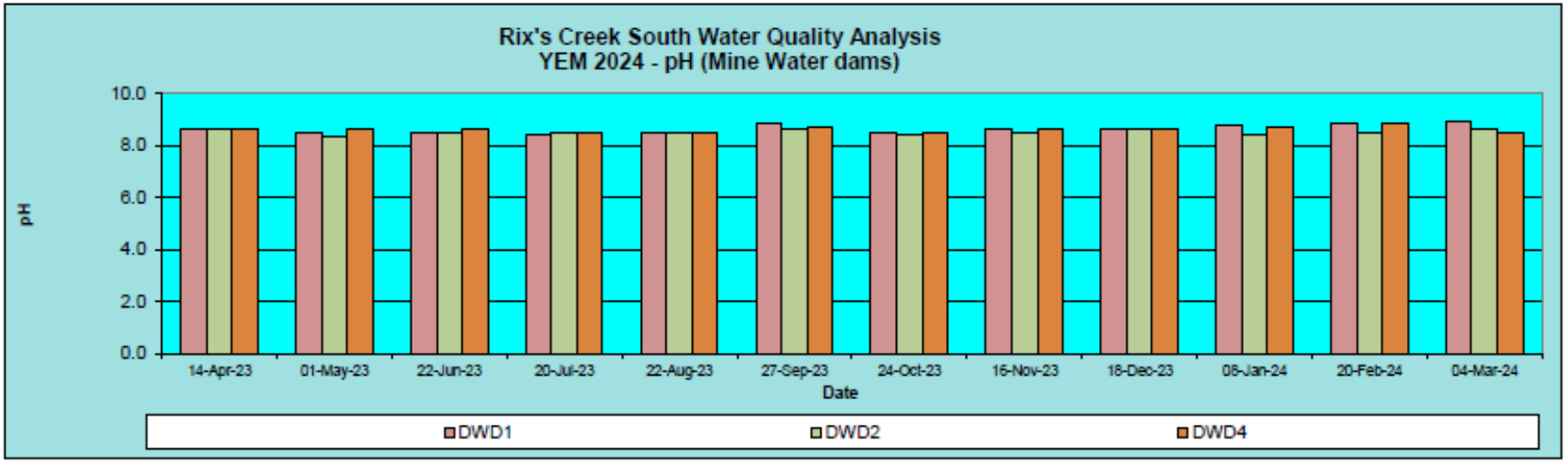

Rix's Creek South Water Quality Analysis
YEM 2024 - Conductivity/Salinity (Mine Water dams)
(uS/cm)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
14-Apr-23
1-May-23
22-Jun-23
20-Jul-23
22-Aug-23
27-Sep-23
24-Oct-23
16-Nov-23
18-Dec-23
8-Jan-24
20-Feb-24
4-Mar-24
Date
DWD1
DWD2
DWD4

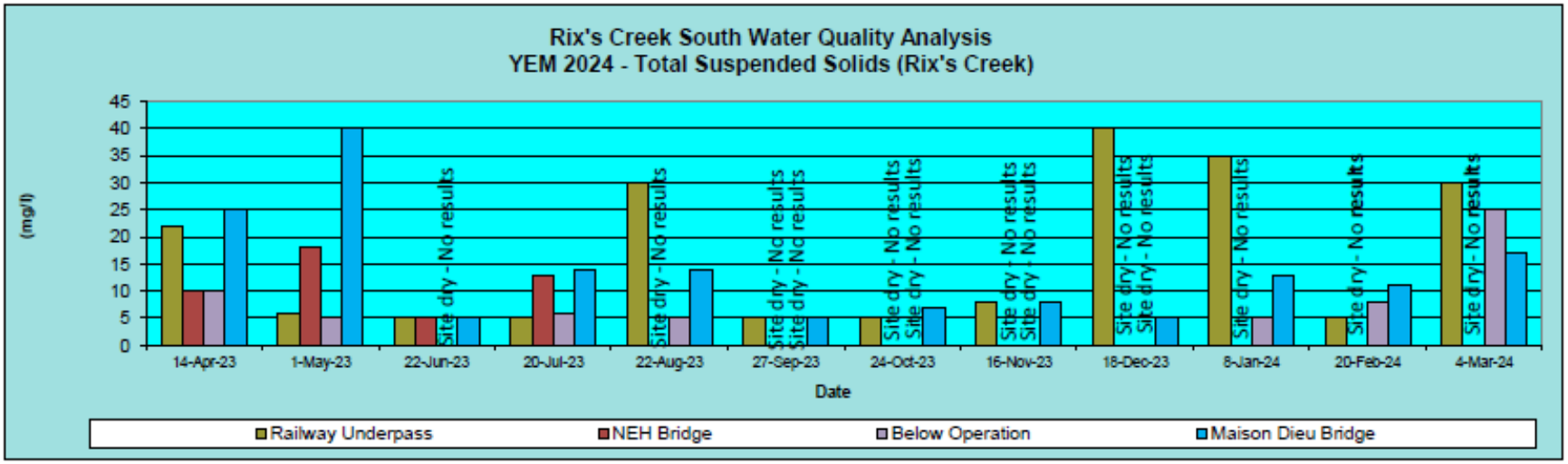

Rix's Creek South Water Quality Analysis
YEM 2024 - Conductivity/Salinity (Rix's Creek)
(uS/cm)
12000
10000
8000
6000
4000
2000
0
Site dry - No Results
Site dry - No results
14-Apr-23
1-May-23
22-Jun-23
20-Jul-23
22-Aug-23
27-Sep-23
24-Oct-23
16-Nov-23
18-Dec-23
8-Jan-24
20-Feb-24
4-Mar-24
Date
Railway Underpass
NEH Bridge
Below Operation
Maison Dieu Bridge

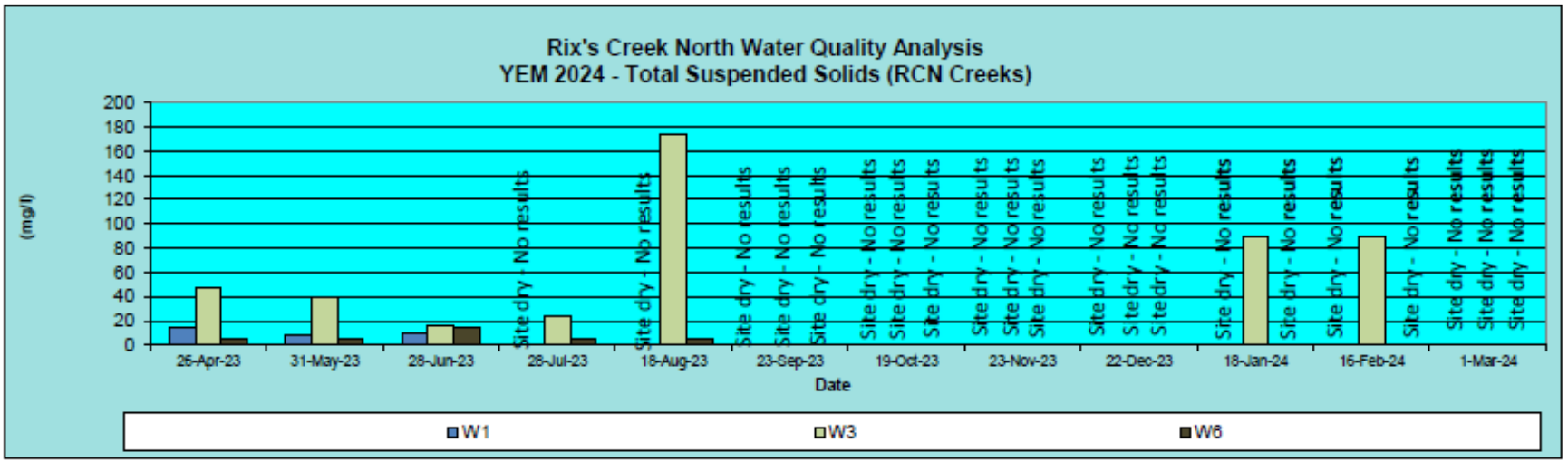

Rix's Creek South Water Quality Analysis
YEM 2024 - pH (Rix's Creek)
pH
10.0
8.0
6.0
4.0
2.0
0.0
14-Apr-23
01-May-23
22-Jun-23
20-Jul-23
22-Aug-23
27-Sep-23
24-Oct-23
16-Nov-23
18-Dec-23
08-Jan-24
20-Feb-24
04-Mar-24
Date
Site dry - No Results
Site dry - No results
Railway Underpass
NEH Bridge
Below Operation
Maison Dieu Bridge

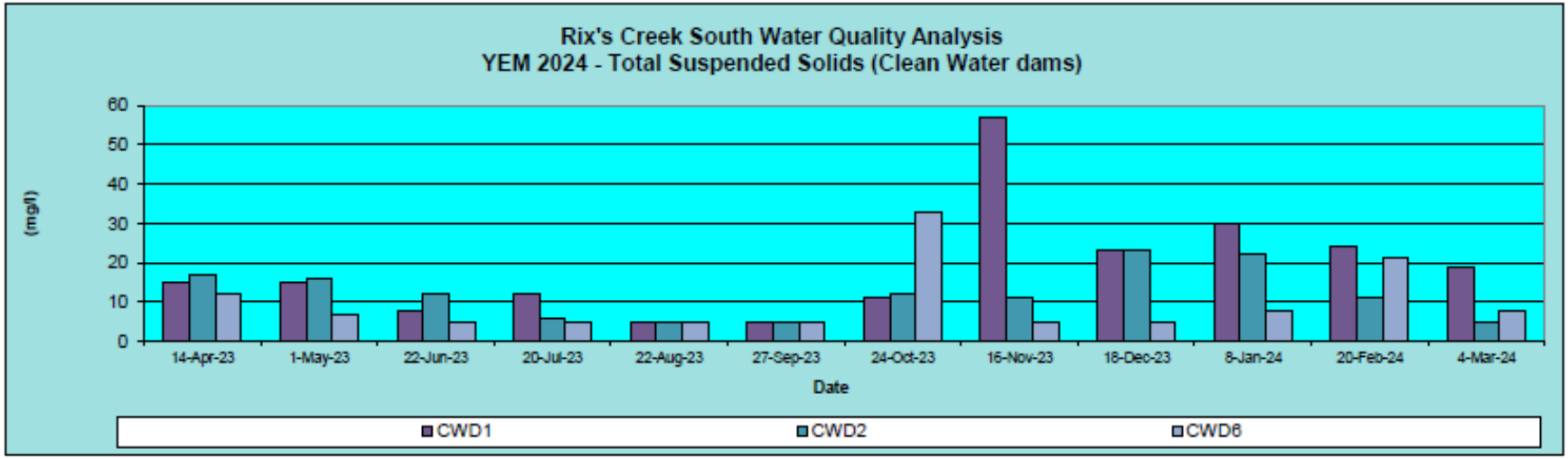

Rix's Creek North Water Quality Analysis
YEM 2024 - pH (RCN Creeks)
pH
10.0
8.0
6.0
4.0
2.0
0.0
26-Apr-23
31-May-23
28-Jun-23
28-Jul-23
18-Aug-23
23-Sep-23
19-Oct-23
23-Nov-23
22-Dec-23
18-Jan-24
16-Feb-24
01-Mar-24
Date
Site dry - No Results
Site dry - No results
W1
W3
W6

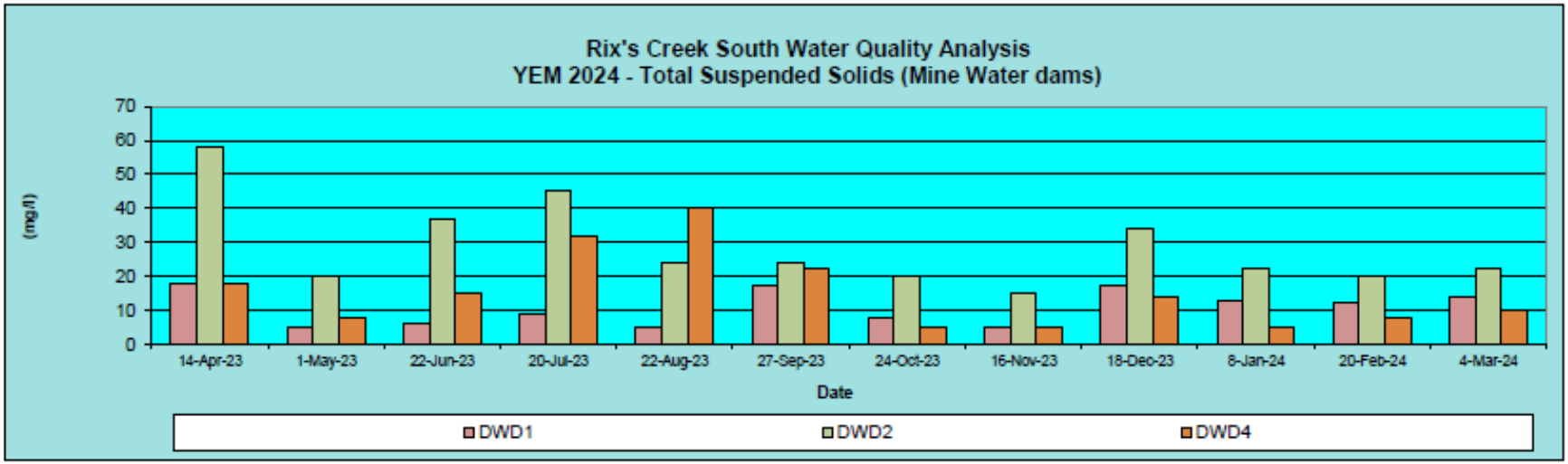

Rix's Creek South Water Quality Analysis
YEM 2024 - pH (Clean Water dams)
pH
10.0
8.0
6.0
4.0
2.0
0.0
14-Apr-23
01-May-23
22-Jun-23
20-Jul-23
22-Aug-23
27-Sep-23
24-Oct-23
16-Nov-23
18-Dec-23
08-Jan-24
20-Feb-24
04-Mar-24
Date
CWD1
CWD2
CWD6

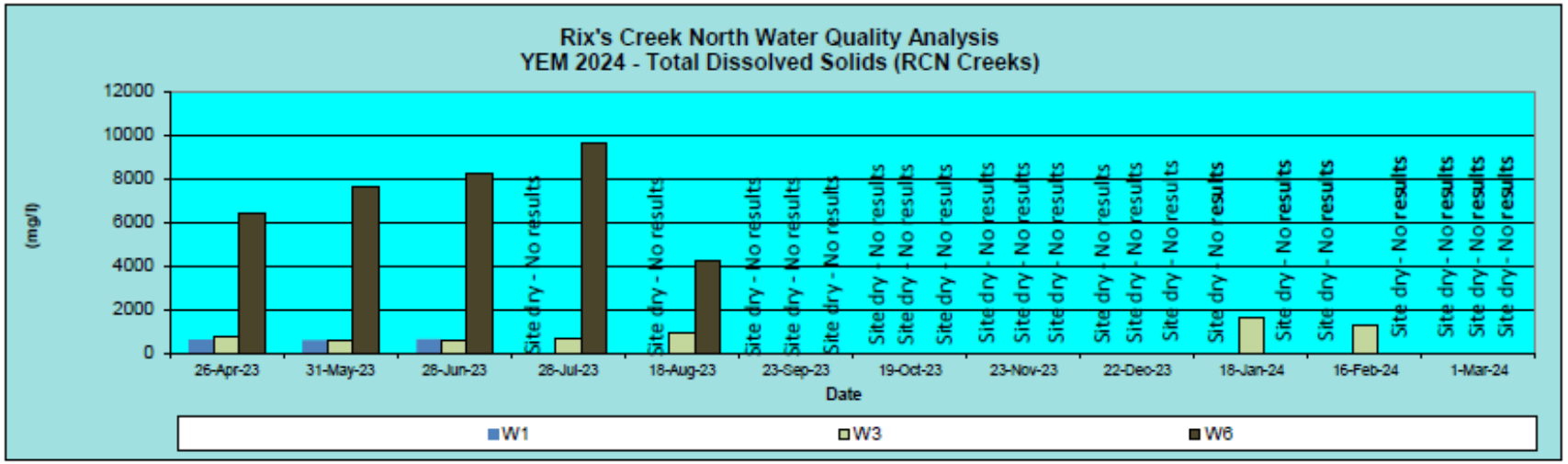

Rix's Creek South Water Quality Analysis
YEM 2024 - pH (Mine Water dams)
pH
10.0
8.0
6.0
4.0
2.0
0.0
14-Apr-23
01-May-23
22-Jun-23
20-Jul-23
22-Aug-23
27-Sep-23
24-Oct-23
16-Nov-23
18-Dec-23
08-Jan-24
20-Feb-24
04-Mar-24
Date
DWD1
DWD2
DWD4

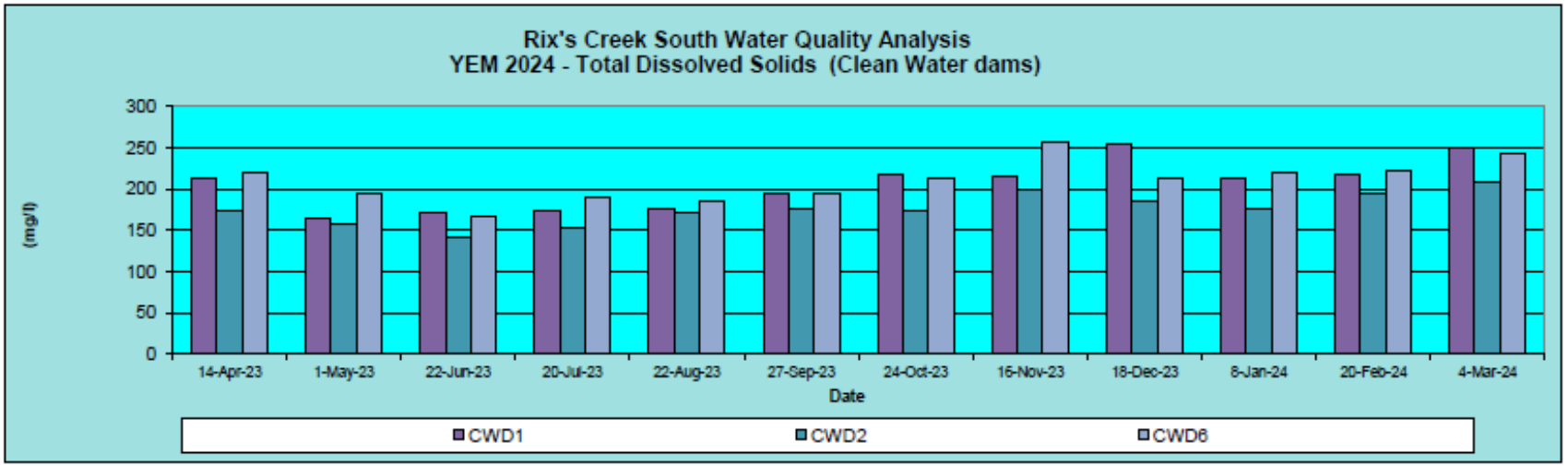

Rix's Creek South Water Quality Analysis
YEM 2024 - Total Suspended Solids (Rix's Creek)
(mg/l)
45
40
35
30
25
20
15
10
5
0
Site dry - No results
14-Apr-23
1-May-23
22-Jun-23
20-Jul-23
22-Aug-23
27-Sep-23
24-Oct-23
16-Nov-23
18-Dec-23
8-Jan-24
20-Feb-24
4-Mar-24
Date
Railway Underpass
NEH Bridge
Below Operation
Maison Dieu Bridge

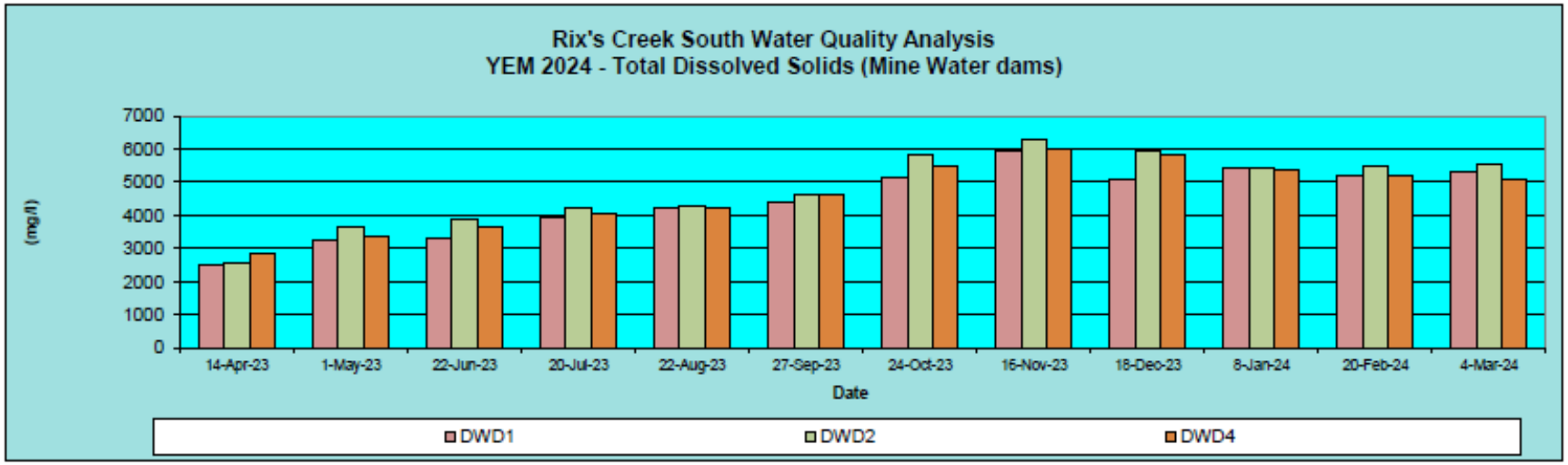

Rix's Creek North Water Quality Analysis
YEM 2024 - Total Suspended Solids (RCN Creeks)
(mg/l)
200
180
160
140
120
100
80
60
40
20
0
Site dry - No results
26-Apr-23
31-May-23
28-Jun-23
28-Jul-23
18-Aug-23
23-Sep-23
19-Oct-23
23-Nov-23
22-Dec-23
18-Jan-24
16-Feb-24
1-Mar-24
Date
W1
W3
W6

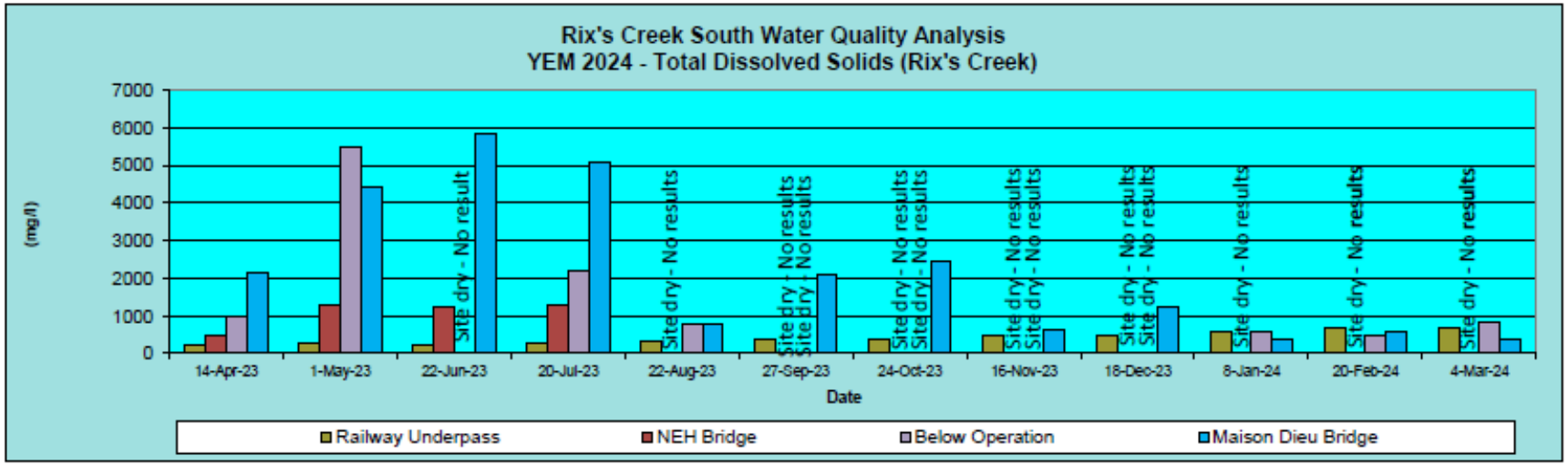

Rix's Creek South Water Quality Analysis
YEM 2024 - Total Suspended Solids (Clean Water dams)
(mg/l)
60
50
40
30
20
10
0
14-Apr-23
1-May-23
22-Jun-23
20-Jul-23
22-Aug-23
27-Sep-23
24-Oct-23
16-Nov-23
18-Dec-23
8-Jan-24
20-Feb-24
4-Mar-24
Date
CWD1
CWD2
CWD6


Rix's Creek South Water Quality Analysis
YEM 2024 - Total Suspended Solids (Mine Water dams)
(mg/l)
70
60
50
40
30
20
10
0
14-Apr-23
1-May-23
22-Jun-23
20-Jul-23
22-Aug-23
27-Sep-23
24-Oct-23
16-Nov-23
18-Dec-23
8-Jan-24
20-Feb-24
4-Mar-24
Date
DWD1
DWD2
DWD4


Rix's Creek North Water Quality Analysis
YEM 2024 - Total Dissolved Solids (RCN Creeks)
(mg/l)
12000
10000
8000
6000
4000
2000
0
Site dry - No results
26-Apr-23
31-May-23
28-Jun-23
28-Jul-23
18-Aug-23
23-Sep-23
19-Oct-23
23-Nov-23
22-Dec-23
18-Jan-24
16-Feb-24
1-Mar-24
Date
W1
W3
W6


Rix's Creek South Water Quality Analysis
YEM 2024 - Total Dissolved Solids (Clean Water dams)
(mg/l)
300
250
200
150
100
50
0
14-Apr-23
1-May-23
22-Jun-23
20-Jul-23
22-Aug-23
27-Sep-23
24-Oct-23
16-Nov-23
18-Dec-23
8-Jan-24
20-Feb-24
4-Mar-24
Date
CWD1
CWD2
CWD6

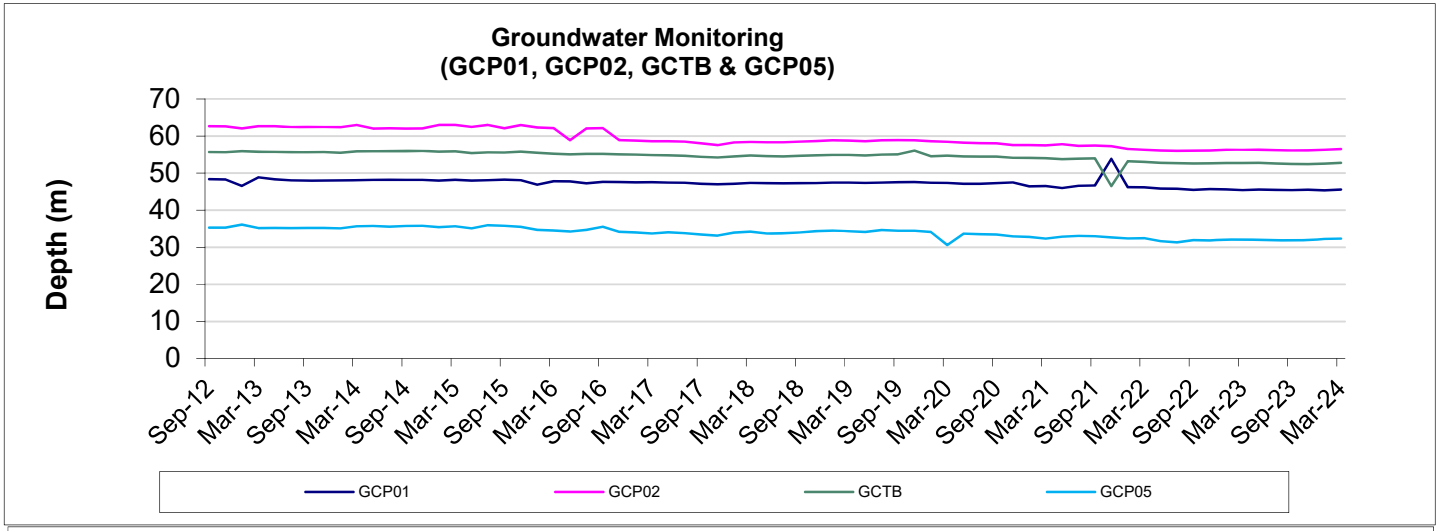

Rix's Creek South Water Quality Analysis
YEM 2024 - Total Dissolved Solids (Mine Water dams)
(mg/l)
7000
6000
5000
4000
3000
2000
1000
0
14-Apr-23
1-May-23
22-Jun-23
20-Jul-23
22-Aug-23
27-Sep-23
24-Oct-23
16-Nov-23
18-Dec-23
8-Jan-24
20-Feb-24
4-Mar-24
Date
DWD1
DWD2
DWD4

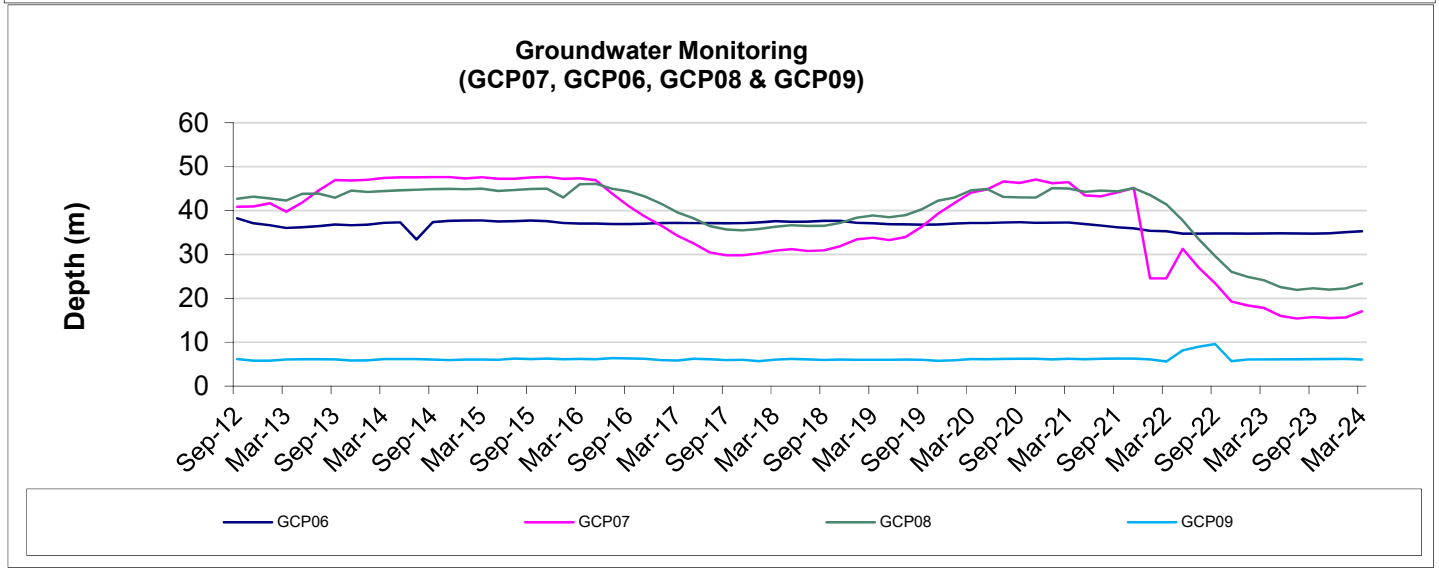

Rix's Creek South Water Quality Analysis
YEM 2024 - Total Dissolved Solids (Rix's Creek)
(mg/l)
7000
6000
5000
4000
3000
2000
1000
0
Site dry - No result
Site dry - No results
14-Apr-23
1-May-23
22-Jun-23
20-Jul-23
22-Aug-23
27-Sep-23
24-Oct-23
16-Nov-23
18-Dec-23
8-Jan-24
20-Feb-24
4-Mar-24
Date
Railway Underpass
NEH Bridge
Below Operation
Maison Dieu Bridge

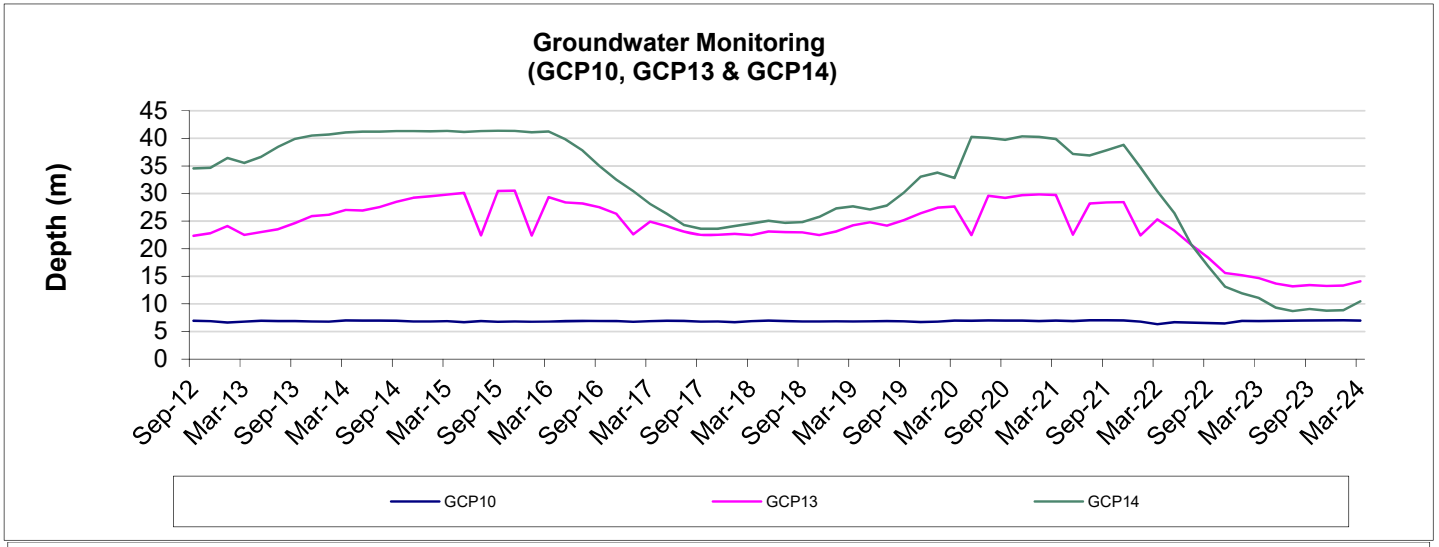
Appendix 2

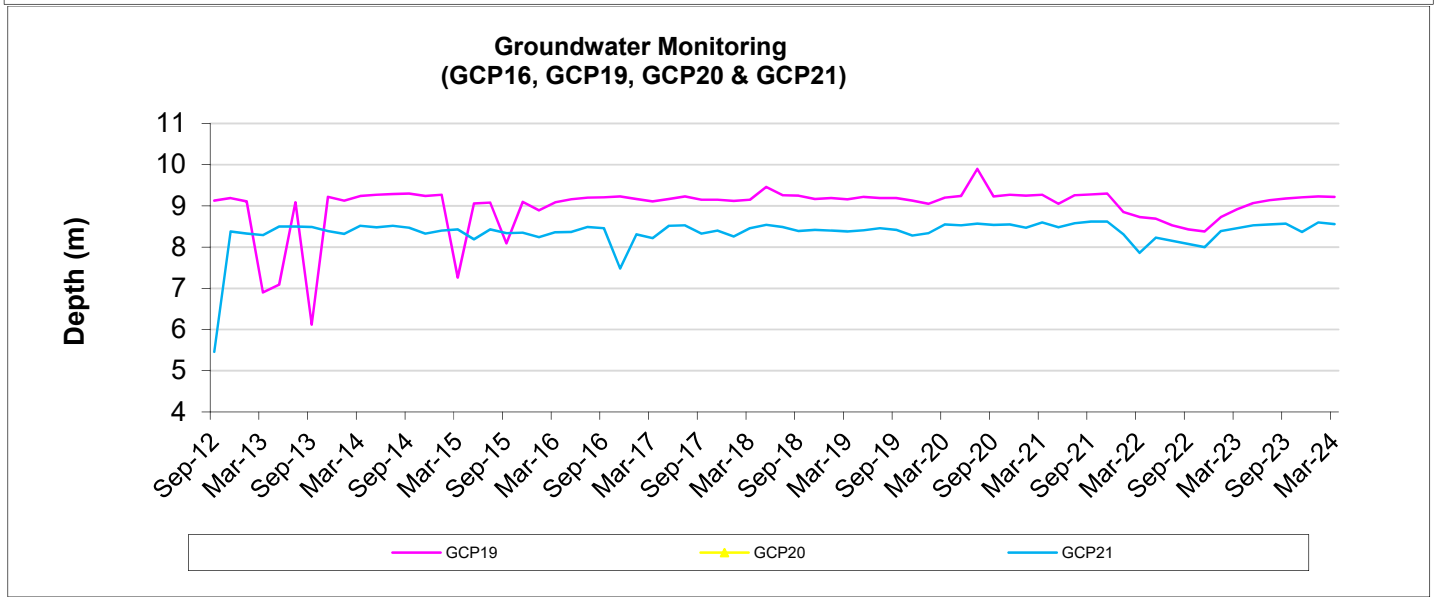
Rix's Creek Mine Ground Water Sampling Results

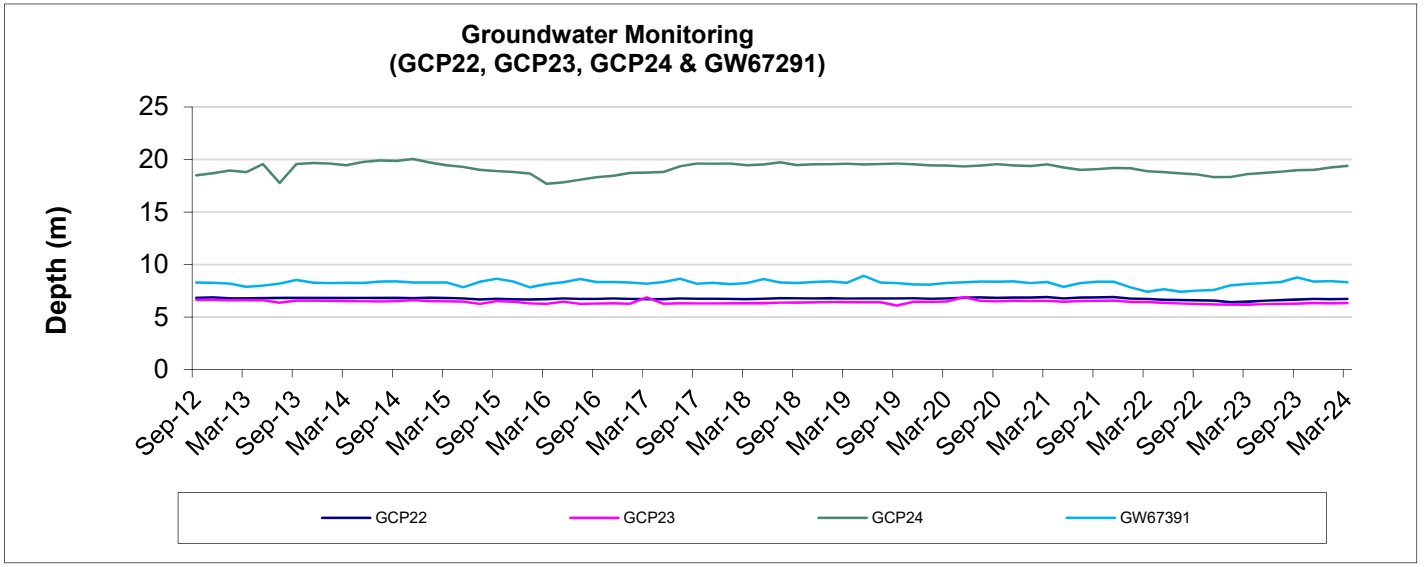
RCN Basement Ground Waters

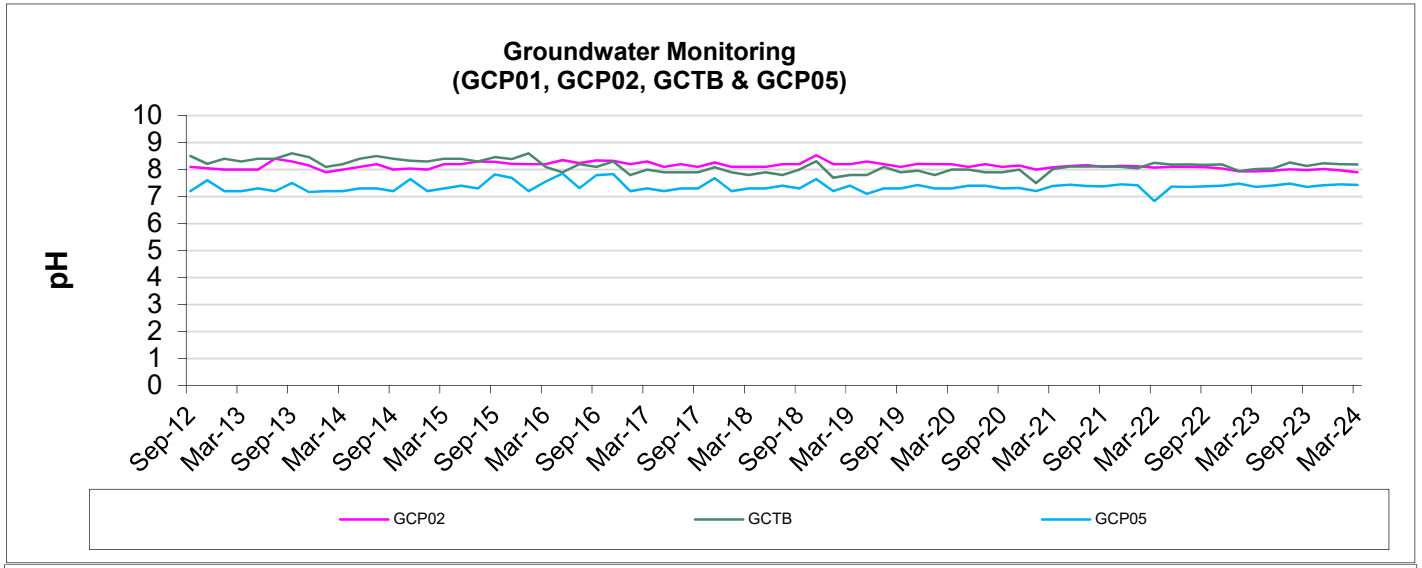


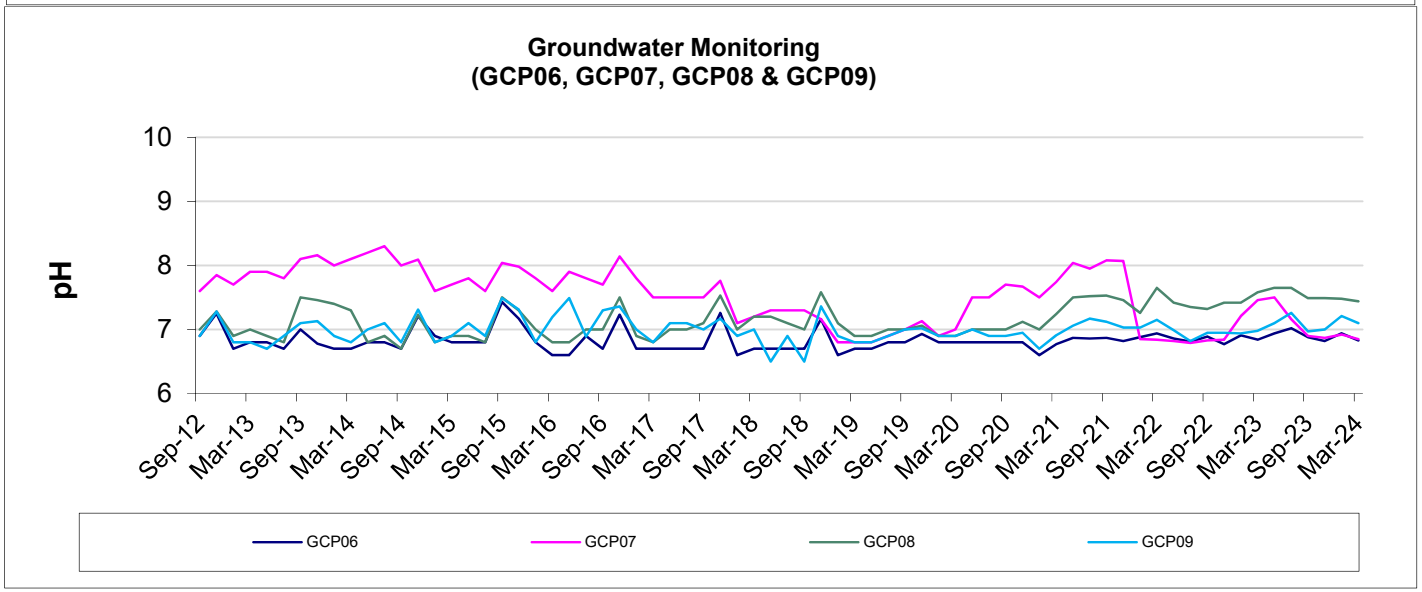


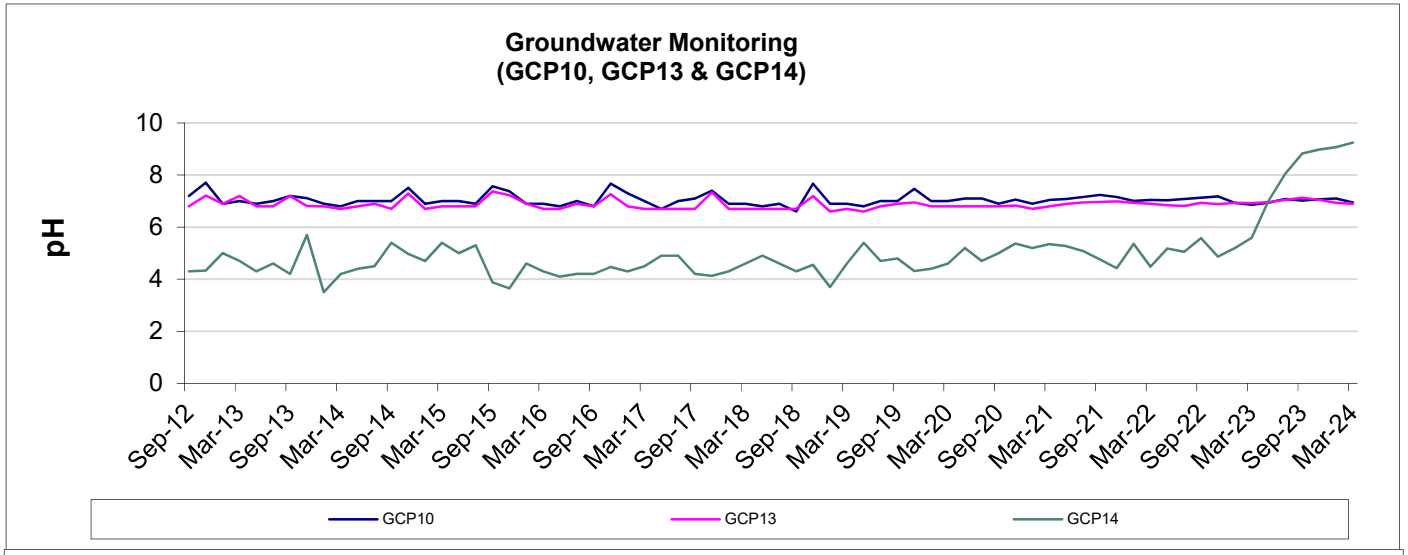

Groundwater Monitoring
(GCP10, GCP13 & GCP14)
Depth (m)
45
40
35
30
25
20
15
10
5
0
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23
Mar-24
GCP10
GCP13
GCP14

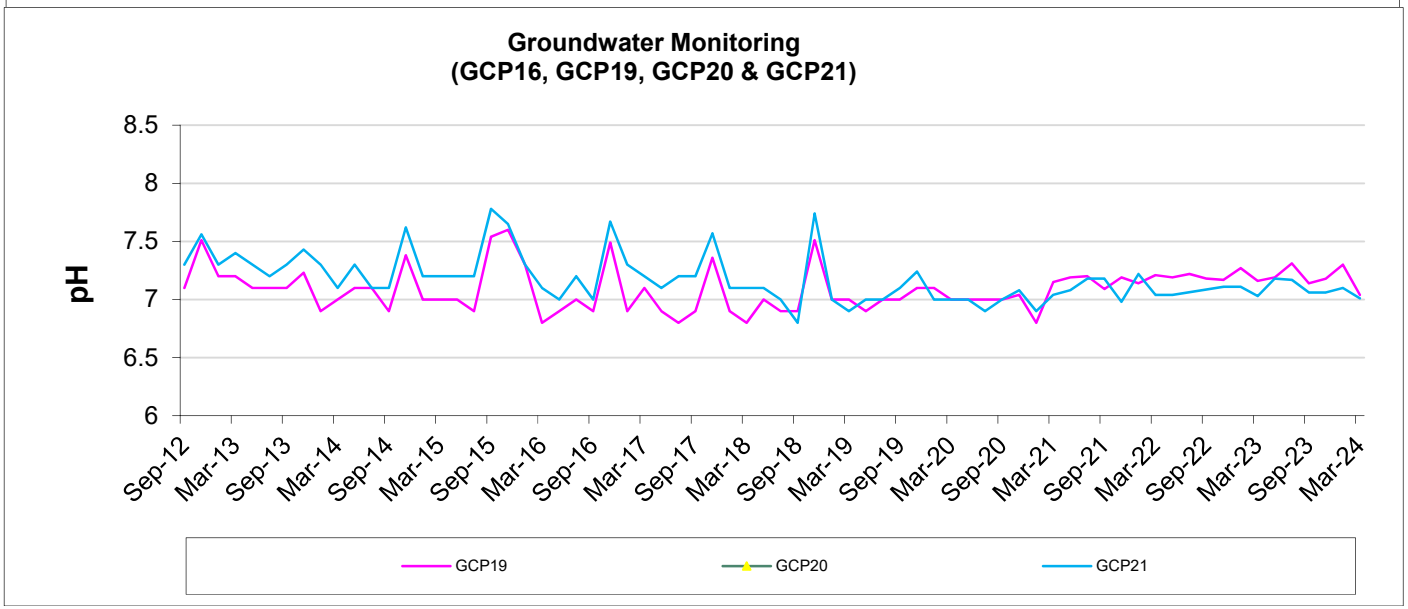

Groundwater Monitoring
(GCP16, GCP19, GCP20 & GCP21)
Depth (m)
11
10
9
8
7
6
5
4
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23
Mar-24
GCP19
GCP20
GCP21


Groundwater Monitoring
(GCP22, GCP23, GCP24 & GW67291)
Depth (m)
25
20
15
10
5
0
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23
Mar-24
GCP22
GCP23
GCP24
GW67391

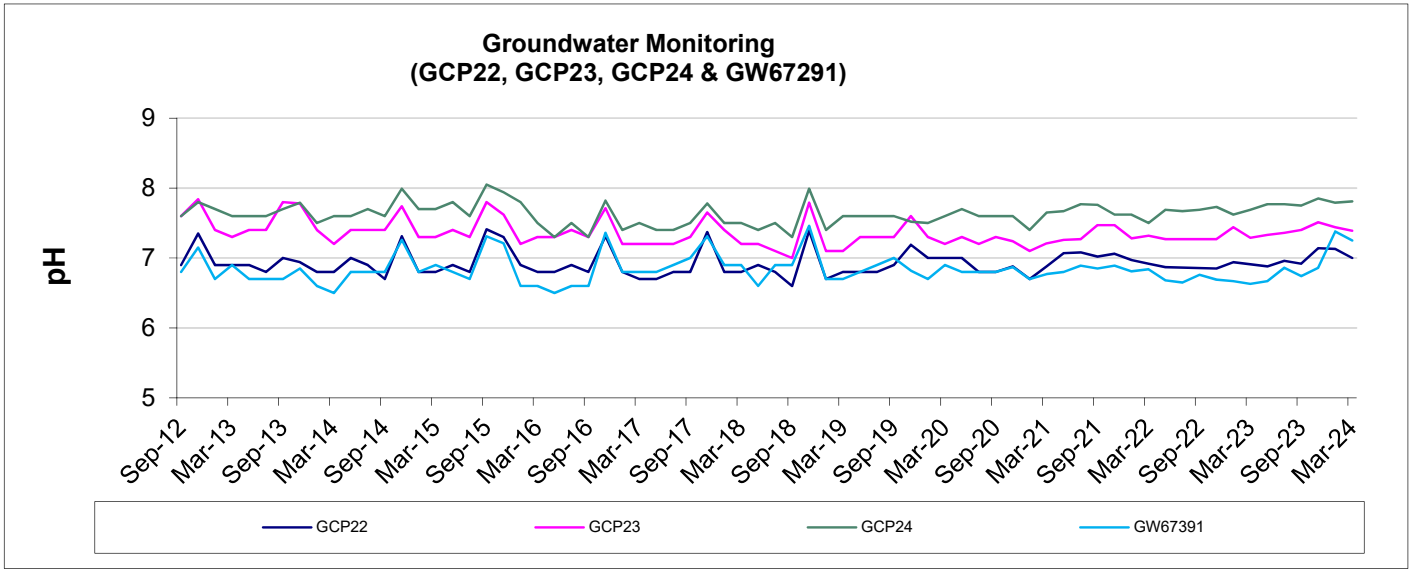

Groundwater Monitoring
(GCP01, GCP02, GCTB & GCP05)
pH
10
9
8
7
6
5
4
3
2
1
0
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23
Mar-24
GCP02
GCTB
GCP05


Groundwater Monitoring
(GCP06, GCP07, GCP08 & GCP09)
pH
10
9
8
7
6
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23
Mar-24
GCP06
GCP07
GCP08
GCP09

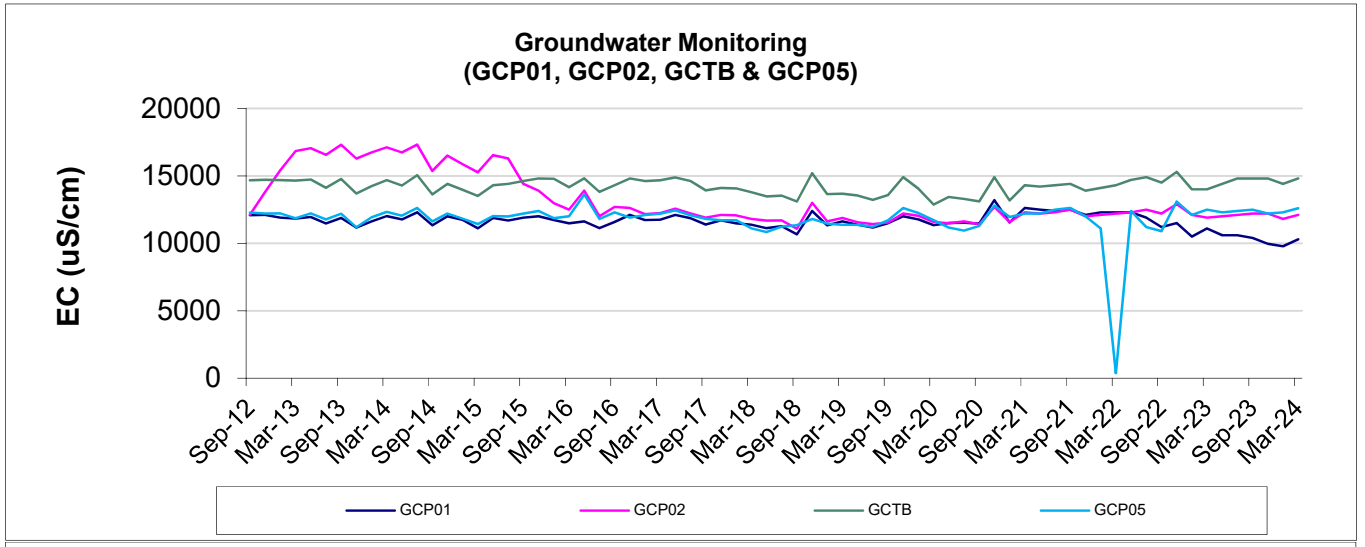

Groundwater Monitoring
(GCP10, GCP13 & GCP14)
pH
10
8
6
4
2
0
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23
Mar-24
GCP10
GCP13
GCP14

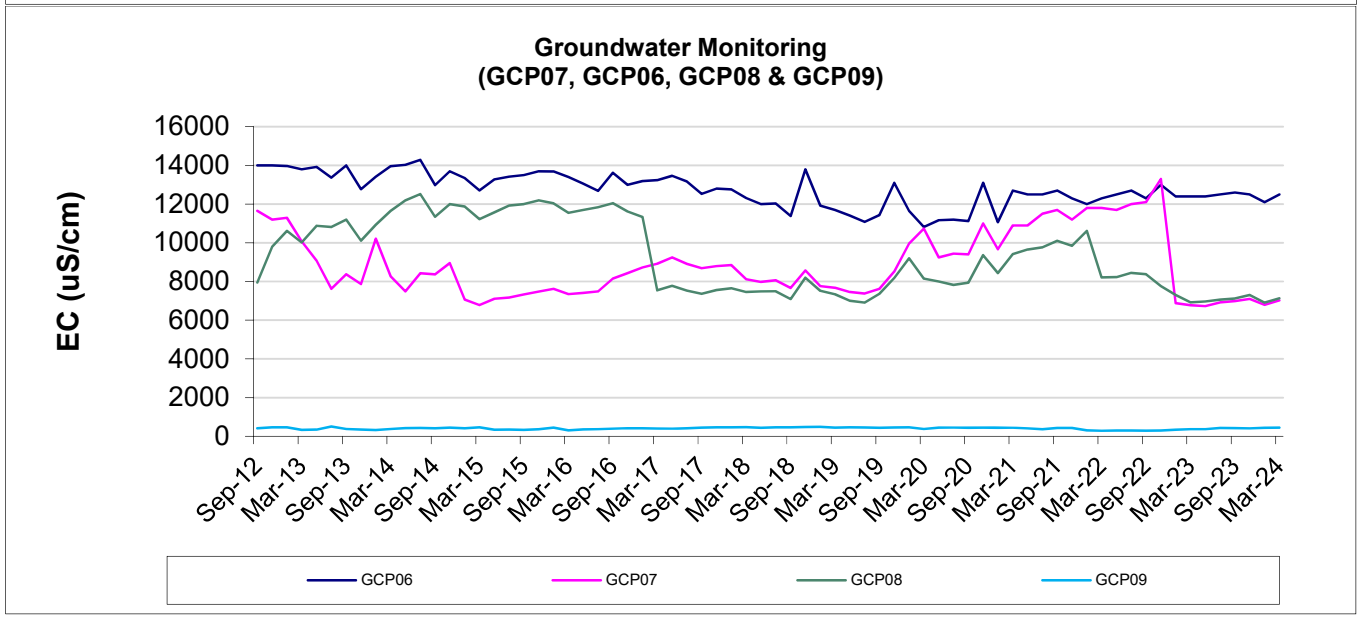

Groundwater Monitoring
(GCP16, GCP19, GCP20 & GCP21)
pH
8.5
8
7.5
7
6.5
6
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23
Mar-24
GCP19
GCP20
GCP21

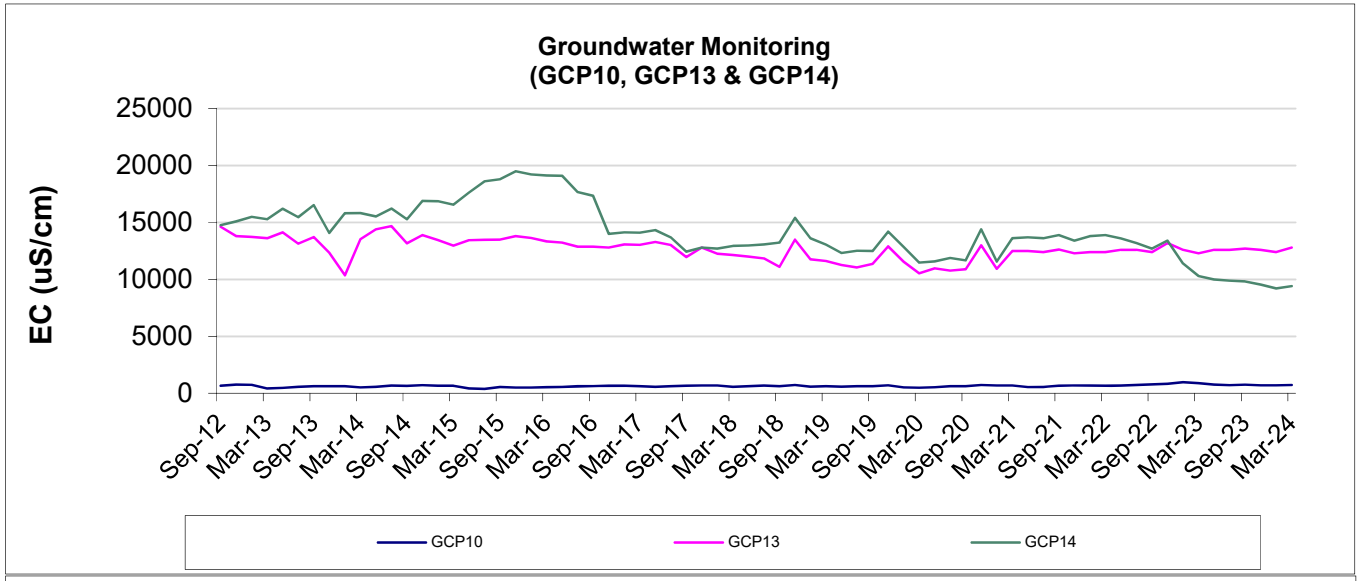
Rixs Creek North & Rixs Creek South

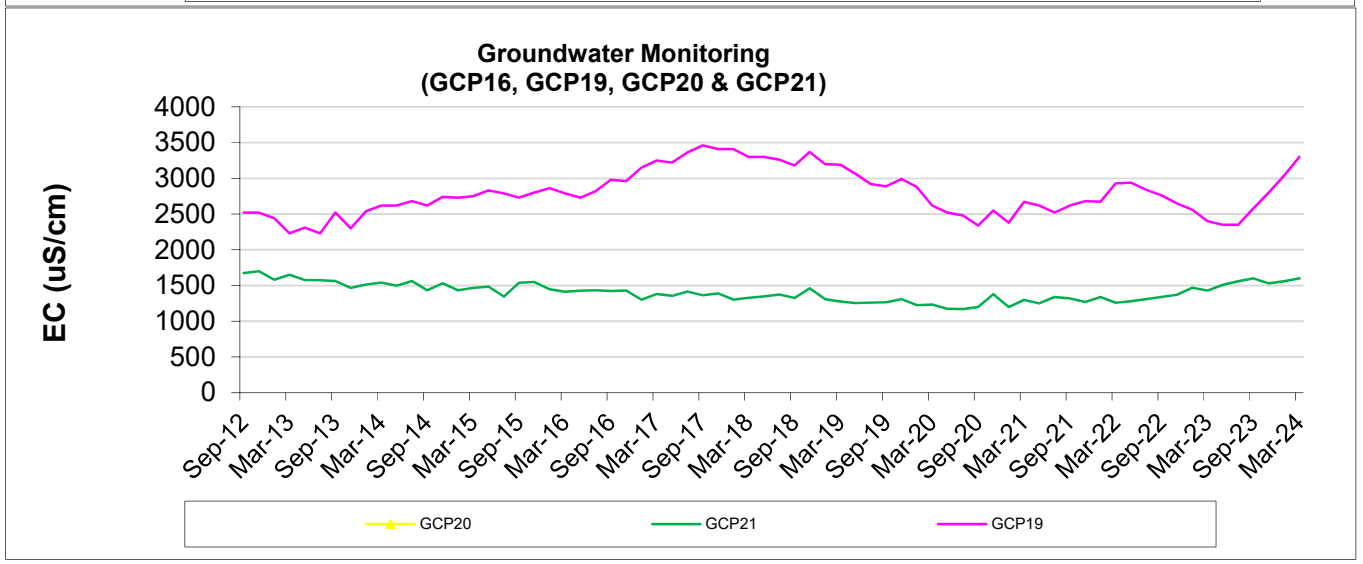


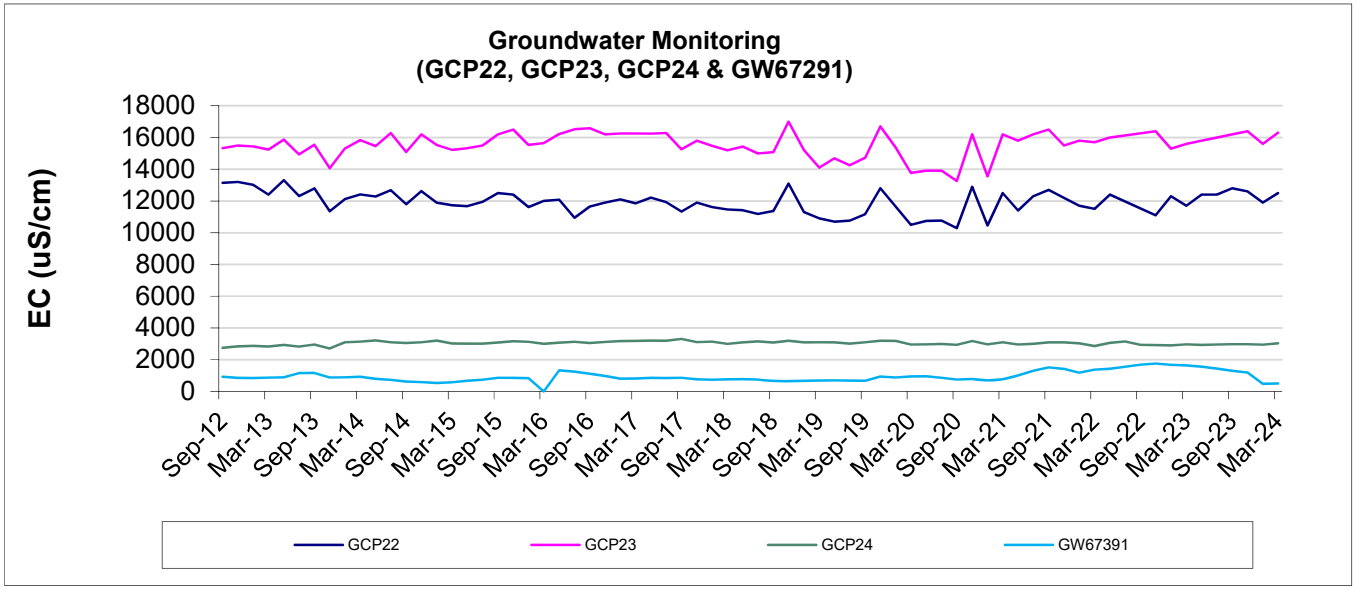
Rixs Creek North & Rixs Creek South



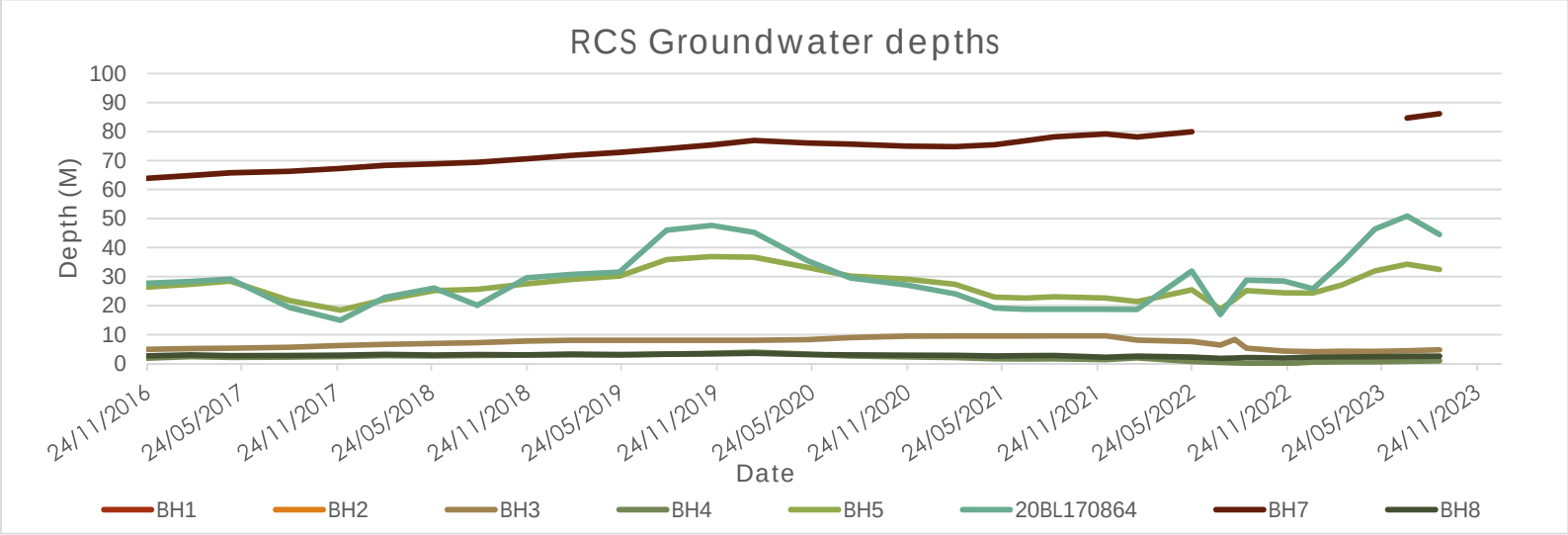


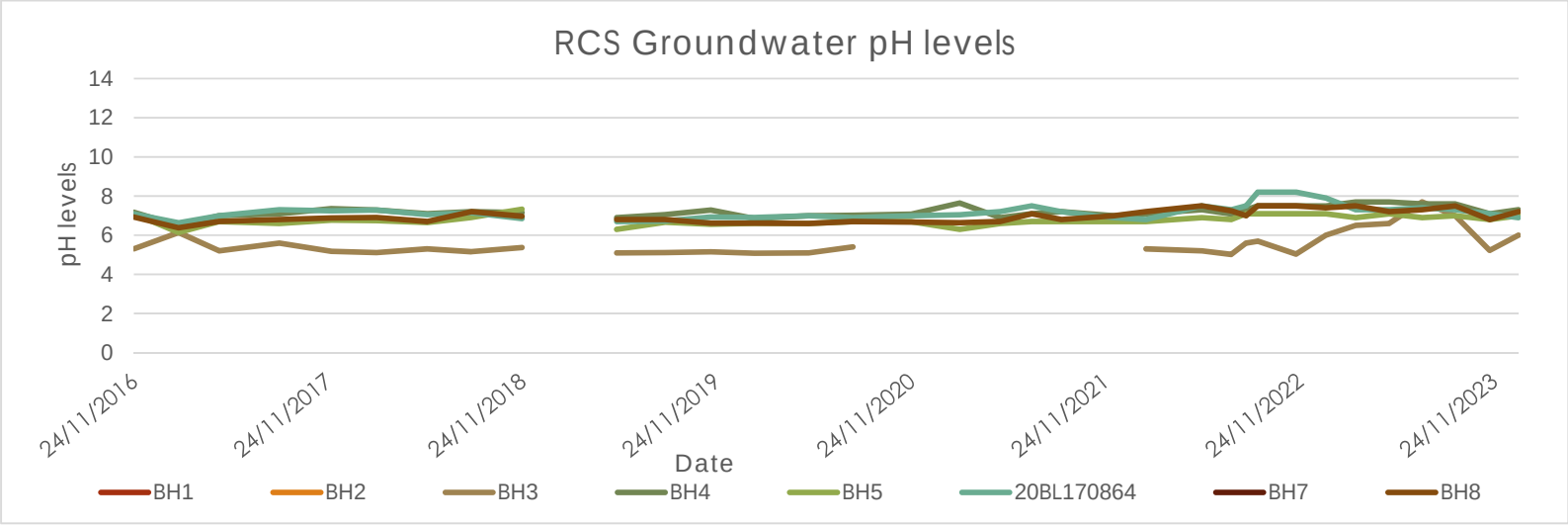

Groundwater Monitoring
(GCP10, GCP13 & GCP14)
EC (uS/cm)
25000
20000
15000
10000
5000
0
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23
Mar-24
GCP10
GCP13
GCP14

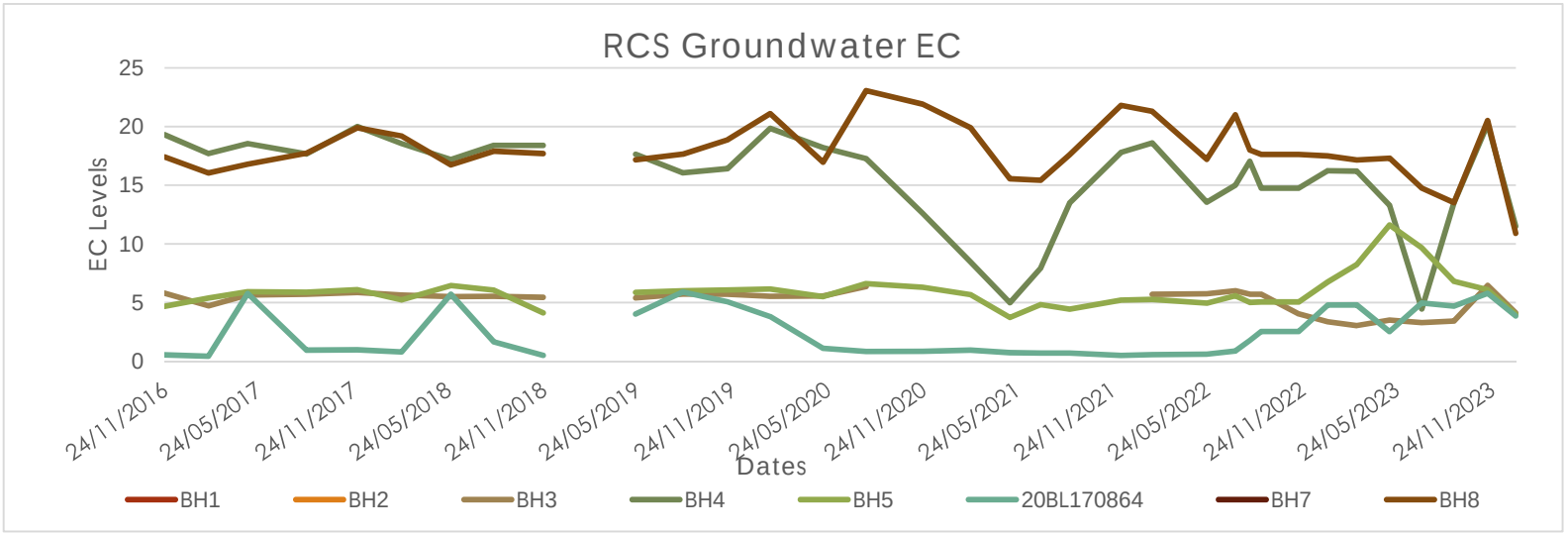

Groundwater Monitoring
(GCP16, GCP19, GCP20 & GCP21)
EC (uS/cm)
4000
3500
3000
2500
2000
1500
1000
500
0
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23
Mar-24
GCP20
GCP21
GCP19


Groundwater Monitoring
(GCP22, GCP23, GCP24 & GW67291)
EC (uS/cm)
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23
Mar-24
GCP22
GCP23
GCP24
GW67391

RCS Ground Water Results






RCS Groundwater EC
EC Levels
25
20
15
10
5
0
24/11/2016
24/05/2017
24/11/2017
24/05/2018
24/11/2018
24/05/2019
24/11/2019
24/05/2020
24/11/2020
24/05/2021
24/11/2021
24/05/2022
24/11/2022
24/05/2023
24/11/2023
Dates
BH1
BH2
BH3
BH4
BH5
20BL170864
BH7
BH8

Appendix 3

Rix's Creek Mine Community Complaints YEM 2024

THE Bloomfield GROUP

WE CARE. WE DELIVER.

Rix's Creek Mine

Complaints Register

Year ending March 2024

Number	Date Received	Site	Nature of Complaint	Location	How received	Action taken and findings
April 2023						
1	08/04/2023	Rix's Creek North	Dust	Bridgman	Rix's Creek Community and Blasting Hotline	**Actions:** Open Cut Examiner (OCE) returned the Complainants call and explained that we had severely reduced operations due to the public holidays. Water carts in operation watering roads. **Findings:** With constantly high Northwest winds, the water carts were focused on the active haul cycles that were in use. There was reduced operation and crew due to the Public Holidays. No further action required.
2	09/04/2023	Rix's Creek North	Dust	Bridgman	Rix's Creek Community and Blasting Hotline	**Actions:** Open Cut Examiner (OCE) returned the Complainants call and explained that we had severely reduced operations due to the public holidays. Water carts in operation watering roads. **Findings:** With constantly high Northwest winds, the water carts were focused on the active haul cycles that were in use. There was reduced operation and crew due to the Public Holidays. No further action required.

May 2023						
3	03/05/2023	Rix's Creek North	Dust	Bridgman	Bloomfield Community and Blasting Hotline	**Actions:** Environment Superintendent (ES) returned the Complainants call and advised of actions that would be initiated. **Findings:** Undertake review of dust management at Tailings Dam to find additional methods of dust suppression. No further actions required.
4	15/5/2023	Rix's Creek North	Other	Bridgman	Email Notification	**Actions:** Environment Superintendent (ES) phoned complainant to discuss the 1080 dog-baiting program and provided a notification letter. **Findings:** Undertake review on property agent mailing list to ensure that it is updated and reviewed accordingly. No further actions required.
5	26/5/2023	Rix's Creek North	Dust	Bridgman	Rix's Creek Community and Blasting Hotline	**Actions:** Environment Superintendent (ES) phoned complainant to discuss the issue, relaying meteorological conditions have not been favourable with high NW winds. **Findings:** ES found that water carts where in use on active haul cycles and upper dumps along with tailings dam spigots being utilised. No further actions required.

July 2023						
9	06/07/2023	Rix's Creek South	Blast	Maison Dieu	Phone	**Actions:** Environment Superintendent (ES) phoned Complainant to discuss the blast. ES explained that all appropriate precautions were taken and weather conditions were favourable. **Findings:** ES explained the blasting process and conducted a review with the Blast team. Review found that the blast was within all compliance requirements. No further actions required.
10	10/07/2023	Rix's Creek South	Other	Rixs Creek	Text	**Actions:** Environment Manager (EM) returned Complainants text advising that RCM had received approval to transport coal using road trucks via Rix's Creek South access road. **Findings:** EM explained that truck movements were limited to daylight hours and 10 trucks per day, with a Code of Conduct, which requires reduced braking and obeying speed limits. No further action required.

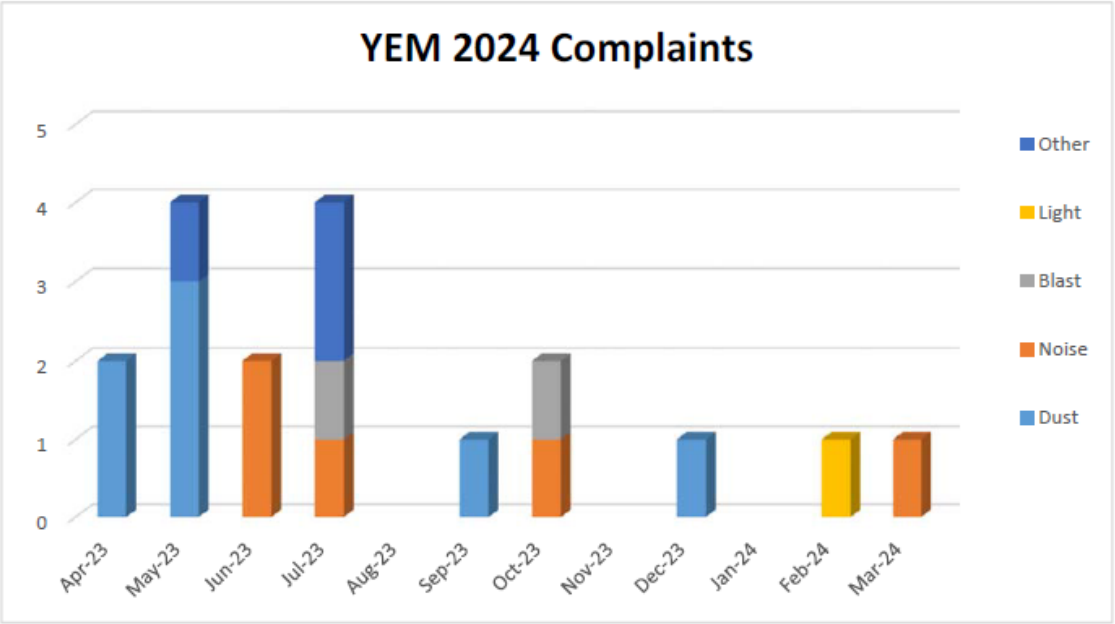
October 2023						
14	8/10/2023	Rix's Creek	Noise	Maison Dieu	OCE's Mobile	**Actions:** OCE (Open Cut Examiner) phoned Environment Noise Technician (ENT) and requested that they conduct noise readings immediately. **Findings:** ENT conducted two readings that were within limits. ENT continued to monitor with in the area till end of shift. No further action required.
15	30/10/2023	Rix's Creek	Blast	Wattle Ponds	Rix's Creek Community and Blasting Hotline	**Actions:** Environmental Superintendent (ES) returned complainants call. ES provided blast results from the closest monitor explaining vibration and air blast overpressure. **Findings:** ES reviewed the blast with the blast supervisor and the shot was within compliance. No further action required.
November 2023						
December 2023						
16	15/12/2023	Rix's Creek	Dust	Camberwell	Email	**Actions:** Environmental Superintendent (ES) provided email to complainant. **Findings:** ES reviewed Air quality data finding that all levels were within compliance. No further action required.
January 2024						

February 2024						
17	18/02/2024	Rix's Creek	Light	Wattle Ponds	Phone	**Actions**: Environmental Manager (EM) received an SMS regarding lighting. EM contacted RCM Open Cut Examiner (OCE) resulting in a lighting plant's location being altered Environmental Superintendent (ES) provided email to complainant. **Findings**: Light identified on visible dump, lighting location was altered. Communicate with OCE the importance of lighting plant locations. No further action required.
March 2024						
18	7/03/2024	Rix's Creek	Noise	Long Point	Phone	**Actions**: Environmental Noise Technetium (ENT) Notified RCS-OCE about the complaint. ENT returned a phone call to the complainant and left a message **Findings**: ENT continued monitoring in the area and found that all readings were within compliance limits.

YEM 2024 Complaints Summary

	Blast	Noise	Dust	Water	Lights	Odour	Other
Summary	2	5	7	0	1	0	3
YEM 2024 Total Complaints	18						

Data updated 1/04/2024.



Appendix 4

Rix's Creek Mine Annual Rehabilitation Report

https://www.bloomcoll.com.au/sustainability/environmental-management/rixs-creek-assessments/mining-lease

YEM 2024

NSW GOVERNMENT

NSW Resources Regulator

ARR0001281

RIXS CREEK MINE ANNUAL REHABILITATION REPORT

Saturday 1 April 2023 to Sunday 31 March 2024

Contents

Summary table

DETAIL	
Mine	Rixs Creek Mine
Reference	ARR0001281
Annual report period commencement date	Saturday 1 April 2023
Annual report period end date	Sunday 31 March 2024
Forward program	
Mining leases	CL 352 (1973), ML 1649 (1992), ML 1803 (1992), ML 1648 (1992), CL 357 (1973), ML 1725 (1992), ML 1650 (1992), ML 1651 (1992), ML 1630 (1992), ML 1432 (1992)
Lease holder(s)	BLOOMFIELD COLLIERIES PTY LTD
Contact	Chris Quinn
Date of submission	Wednesday 29 May 2024

Important

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

Mine details

Project description

Rix's Creek Mine is wholly owned and operated by Bloomfield Collieries Pty Limited (BCL) an Australian owned company. The mine consists of Rix's Creek North (RCN) and Rix's Creek South (RCS) which are formally two separate mines. Each includes an approved open cut operation and CHPP facilities, with a rail loop located at RCN.

Life of mine

16 years

Current development consents, leases and licences

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

PA08-0102 (MOD9)
PA08-0102 (MOD9)
PA08-0102 (MOD9)
PA08-0102 (MOD9)
PA08-0102 (MOD9)
PA08-0102 (MOD9)
PA08-0102 (MOD9)
PA08-0102 (MOD9)
PA08-0102 (MOD9)
PA08-0102 (MOD9)
PA08-0102 (MOD9)
PA08-0102 (MOD9)
PA08-0102 (MOD9)
PA08-0102 (MOD9)
PA08-0102 (MOD9)
SSD6300 (MOD1)
SSD6300 (MOD1)
SSD6300 (MOD1)
SSD6300 (MOD1)
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SSD6300 (MOD1)
SSD6300 (MOD1)
SSD6300 (MOD1)
SSD6300 (MOD1)
SSD6300 (MOD1)
SSD6300 (MOD1)
PA08-0102 (MOD9)

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

CL 352 (1973), ML 1649 (1992), ML 1803 (1992), ML 1648 (1992), CL 357 (1973), ML 1725 (1992), ML 1650 (1992), ML 1651 (1992), ML 1630 (1992), ML 1432 (1992)

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

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

N/A

Changes to land ownership and land use

Bloomfield Collieries Pty Ltd purchased Lot65 DP752499 for the purpose of cropping and farming.

Surface disturbance and rehabilitation activities during the reporting period

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

During the reporting period Rix's Creek Mine progressed with the disturbance of the Western out of Pit dump area (WOOPD) and WH11 near the high-wall. 56.5ha of land was disturbed as per the land disturbance procedure. The planned disturbance for the Year Ending March (YEM) 2024 reporting period was scheduled to be 98.02ha. The Dulwich pre-strip block in Camberwell Pit and Western out of pit dump (WOOPD) was progressed in YEM24. A small section of the WS13 block was disturbed during the reporting period. The Eastern side of the WOOPD was not disturbed during the reporting period and is planned to be completed in YEM25. During the reporting period, 8.43 ha of rehabilitation occurred at Arties Pit North East, 7.79ha of rehabilitation occurred at Arties Pit SE, 3.9ha was completed at the Western out of pit dump (WOOPD) and 1.55 hectares was completed at The Old North Pit Void. A total 21.69 ha of rehabilitation occurred during the reporting period. This was greater than the 13.4ha specified in the Year 1 forward program. Larger areas were completed in the Arties Pit South and Arties Pit North with an additional area being completed in the Old North Pit Areas.

Rehabilitation planning activities that were conducted, including any specialist studies

A Quality Assurance and Quality Control rehabilitation process continued to be implemented during the reporting period. The QA/QC system provides an integrated process for the design, approval, construction and documentation to meet the requirements of the rehabilitation records guideline. Further refinements to the QA/QA system will continue to improve the rehabilitation process. Biosolid pre-application reports for Arties Pit and Western out of pit dump (WOOPD) rehabilitation were completed to determine rates of biosolid application. Rix's Creek Mine applies biosolids to boost organic matter, soil nutrient levels and improve vegetation growth and groundcover. RCM engaged a consultant to undertake preliminary screening, material characterisation and erosion modelling of the materials available for landform construction (reshaping) and surface capping / topdressing.

Overview of subsidence repair and/or remediation works undertaken

No subsidence repairs were required during the reporting period.

Overview of rehabilitation management and maintenance activities

Weed management was undertaken during the period. A weed action plan was undertaken with a land management service provider completing weed management focusing on Galenia,

Acacia Saligna, Coolatai grass, African boxthorn prickly pear. Other common species of weeds were also targeted during the year. Wild Dog and Fox baiting was undertaken during the reporting period. 120 baits were presented over 30 monitoring stations with 10 takes from foxes and 19 takes from wild dogs based on the animal sign left on the mound and surrounding areas.

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

On the 22/12/2023 Resources Regulator issued Rix's Creek Mine an official caution for late submission of the Rehabilitation Cost Estimate (RCE) for 2023 reporting period. Rix's Creek Mine has put in place systems to ensure that the RCE is submitted with future Forward Programs and Annual Rehabilitation Reports.

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

As per Clause 6 Schedule *A to the Mining Regulation 2016, the Resource Regulator has not signed off on rehabilitation areas that have achieved final land use during the reporting period.

Key production milestones

MATERIAL	UNIT	YEAR 1	THIS REPORT
Stripped topsoil (if applicable)	(m^3)	0	46,025
Rock/overburden	(m^3)	0	16,069,581
Ore	(Mt)	0	4.18
Reject material[1]	(Mt)	0	2.61
Product	(Mt)	0	1.57

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

Disturbance and rehabilitation statistics

Current disturbance and rehabilitation progression

	ELEMENT	UNIT	THIS REPORT
A	**Total surface disturbance footprint**	(ha)	2,238.21
B	**Total active disturbance**	(ha)	1,400.67
C	**Land prepared for rehabilitation**	(ha)	21.69
D	**Ecosystem and land use establishment**	(ha)	49.89
E	**Ecosystem and land use development**	(ha)	765.96
F	**Rehabilitation completion**	(ha)	0

Rehabilitation key performance indicators (KPIs)

	ELEMENT	UNIT	THIS REPORT
G	**Total new active disturbance area**	(ha)	NA - this value will display after 2nd year ARR submission as calculation relies on comparison between sequential yearly ARR data
H	**New rehabilitation commenced during annual reporting period**	(ha)	NA - this value will display after 2nd year ARR submission as calculation relies on comparison between sequential yearly ARR data
I	**Established rehabilitation**	(ha)	765.96
J	**Annual rehabilitation to disturbance ratio**	%	NA - this value will display after 2nd year ARR submission as calculation relies on comparison between sequential yearly ARR data
K	**Rehabilitated land to total mine footprint**	%	34.22

Progressive achievement of established rehabilitation

	ELEMENT	UNIT	THIS REPORT
L	**Established rehabilitation - agricultural final land uses**	%	98.7
M	**Established rehabilitation - native ecosystem final land uses**	%	0
N	**Established rehabilitation - other/non-vegetated final land uses**	%	1.3

Variation to the rehabilitation schedule

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

N/A

Key factors that delayed progressive rehabilitation

N/A

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

N/A

Rehabilitation monitoring and research findings

Rehabilitation monitoring

The rehabilitation monitoring carried out in the annual reporting period

In order to refine the design criteria needed to ensure long-term erosional stability of future amendments to the final landform, RCM engaged a consultant to undertake preliminary screening, material characterisation and erosion modelling of the materials available for landform construction (reshaping) and surface capping / topdressing. Materials chosen for additional erodibility testing and modelling included an area of rehabilitation in the Arties Pit (Rehab3), a topsoil stockpile, sub soil stockpile, Brown waste and Grey waste. Results identified that the Rehab3 soil was non-sodic and non- dispersive, highlighting the benefits of soil structure and functioning from the RCM topdressing amelioration strategy. Enhanced microbial productivity may improve erosion resistance is encouraging and provides additional support for the adopted rehabilitation strategy at RCM of adding biological amendments (e.g., biosolids, mulch, gypsum) to improve the vegetative growth quality of the topdressing growth medium. The two distinct waste spoil materials at RCM, designated as Grey waste and Brown Waste. Grey Waste material at Rix's Creek Mine should be prioritised exclusively for use on the steeper sections of the rehabilitation design. The Brown waste is better placed on flatter areas of rehabilitation, such as the bunded tops of the landforms, or low relief connecting corridors.

Status of performance against rehabilitation objectives and rehabilitation completion criteria

The monitoring program that has been implemented

The rehabilitation monitoring program was undertaken in accordance with the Bloomfield Group's monitoring protocol as specified in the RMP. The monitoring protocol included the assessment of a range of performance metrics relating to ground cover, landscape function, erosion, vegetation, weeds and soil properties. Based on the analysed and interpreted field collected data, an overall assessment of rehabilitation performance was undertaken against the relevant rehabilitation objectives and completion criteria defined in Rix's Creek Mine RMP. The monitoring program is based on the Landscape Function Analysis (LFA). LFA is the core of the monitoring procedures and uses visually assessed indicators of soil surface processes that gauge how effectively a hillslope is operating as a biophysical system. It is mainly based on processes involved in surface hydrology: rainfall, infiltration, runoff, erosion, plant growth and nutrient cycling. In addition to LFA monitoring, the monitoring program also assesses the performance of rehabilitated lands in terms of ground cover protection, erosion, vegetation community composition and structure, soil properties and pasture productivity.

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

Yes

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

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

The continued monitoring of rehabilitation performance through the monitoring methodology is allowing Rix's Creek Mine to improve soil and land quality of rehabilitated sites across the mine lease area. Land improvements and supporting scientific data provide a strong case to regulators that successful land relinquishment is being achieved through current management.

Appraisal description

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

Rehabilitation monitoring program findings

Rehabilitation monitoring was conducted by an independent Consultant in December 2023. Key findings of the rehabilitation monitoring program include the following: Land and soil capability were generally quite good across all rehabilitated areas. Rehabilitated sites performed similar to, or better than Analogue Sites and generally within acceptable completion criteria; All rehabilitation monitoring site exceeded their benchmark criteria for Infiltration and Nutrient cycling; Ground cover percentage has increased significantly in 2023 compared to 2021; Species diversity within the tree and shrub layers of monitoring sites matched or exceeded reference sites; Landscape function pasture results indicated that rehabilitated areas overall performed positively and comparatively to the pasture analogue sites. Overall, all sites are meeting benchmark completion criteria, aside from the 10 sites which fell below 50% stability which can be attributed to the drier climatic conditions at the time of survey. The majority of sites with mid and upper storeys appeared to be in good health and condition however did not exhibit obvious signs of natural regeneration. Recruitment was not apparent at 6 monitoring sites. Stands of Spotted Gum (Corymbia) generally showed little to no evidence of recruitment compared to sites with other species. Eucalyptus and Acacia showed the most prolific recruitment and produced the highest stem/ha counts. All sites were identified to fall within the completion criteria for the respective to topsoil cover. All sites displayed good soil characteristics in terms of soil acidity, salinity and sodicity. Soil dispersion benchmarks were not achieved at all sites however this does not appear to have had an impact on vegetative performance. Additional weeds have been identified and as such require control. Particular note for control of Coolatai grass,

Balloon Cotton and Spear thistle. Continuation of previous year monitoring weed control is recommended. Rix's Creek Mine has prepared a weed management plan to reduce weeds onsite. Pasture performance was improved in 2023. Pasture sites were above the recommended heights by Meat and livestock Australia (MLA). It is recommended that such sites are grazed or continue to be slashed.

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

Additional weeds have been identified and as such require control. Particular note for control of Coolatai grass, Balloon Cotton and Spear thistle. Continuation of previous year monitoring weed control is recommended. Rix's Creek Mine has prepared a weed management plan to reduce weeds onsite. Pasture performance was improved in 2023. Pasture sites were above the recommended heights by Meat and livestock Australia (MLA). It is recommended that such sites are grazed or continue to be slashed.

Outcomes of rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS	ON TRACK?
RRT0001025	Grazing Land Monitoring Trial	Monitoring the productivity of rehabilitated pasture through grazing.	Measurements of soil sustainability and productivity (and to determine soil amelioration and fertiliser requirements) Measurements and indicators of the health and productivity of vegetation/pasture growth on the land. Develop some key indicators of and best management practices for pastures on rehabilitated land. Provide recommendations for best management practices for future grazing. Provide a comparison of the grazing potential of the rehabilitated land and the adjacent analogue n	29 Jan 2040	Ongoing	Yes
RRT0001026	Project C34025 investigating a new landscape evolution model	investigating a new landscape evolution model for assessing rehabilitation designs.	The model development is the refinement of the State-Space Soil Production and Assessment Model (SSSPAM) and looks at optimising the existing model.	29 Jan 2025	Ongoing	Yes
RRT0001027	Rix's Creek Pasture Assessment Trial	The purpose of this trial was to assess the quality and quantity of pasture produced on mine rehabilitation sites and determines the suitability of the site for the intended agricultural end use.	Improved pasture was sown on four treatments, which included a Control using conventional fertiliser, Biosolids, and two Alternate Waste Treatment (AWT) Compost treatments. An un-grazed Native Pasture area	29 Jul 2022	Complete	Yes

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS	ON TRACK?
			was also sampled to gather comparable baseline data. Random quadrats were assessed along transect lines in each treatment for species diversity, herbage mass and forage quality. Data was collected annually for 4 years, commencing 12 months after sowing.			

Outcomes of completed trials and research

N/A

Attachment 1 – Reporting Definitions

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

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

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

Attachment 2 – Definitions

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

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

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

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

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

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

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

Attachment 3 – Rehabilitation Complaints

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

Attachment 4 – Stakeholder consultation

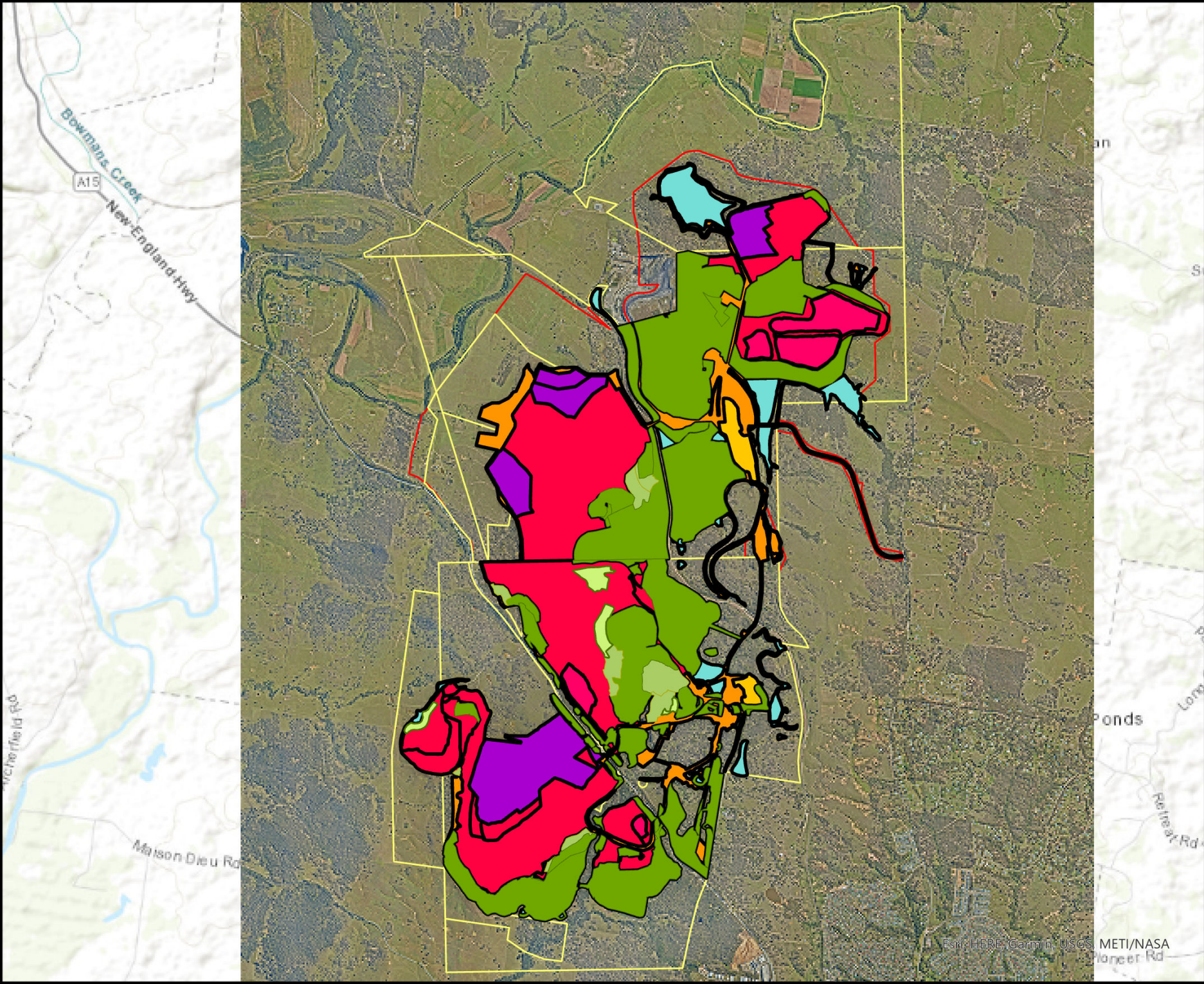
DATE	STAKEHOLDER	CONSULTATION ACTIVITIES AND FORMS	MATTERS SUBJECT TO CONSULTATION	ACTIONS TAKEN
18 Oct 2023	Community Consultative Committee	Upper Hunter Mining Dialogue provided an overview of the annual rehabilitation reporting project noting of the results published	Rehabilitation reforms and rehabilitation cerfication and relinquishment.	Community member asked about timeframes from rehabilitation to be certified and relinquished. It was agreed to provide an update on the rehabilitation reforms as well as buffer land management including farming operations at the next meeting.
22 Dec 2023	NSW Resources Regulator	Offical Caution for late submission of Rehabilitation Cost Estimate (RCE).	Submission of Rehabiltiation Cost Estimate for 2023 period.	Rix's Creek Mine has put in place systems to ensure that the RCE is submitted with future Forward Programs and Annual Rehabilitation Reports.
5 Apr 2024	-	-	-	-
11 May 2023	Community Consultative Committee	Consultation during. Reporting period included: Issue of community newsletter; Website update; CCC meetings; Bloomfield Family Day Rehabilitation inspections; Upper Hunter Mining Dialogue school tours;	Rehabilitation progress which involved a review of progress with rehabilitation requirements.	The CCC requested a breifing on the rehabilitation reforms including any areas that have been signed off by the Bloomfield Group.
16 Nov 2023	Department of Planning and Environment	Inspection of site operations	site inspection of rehabilitation areas and water management area.	No formal correspondence was received regarding rehabilitation.

DATE	STAKEHOLDER	CONSULTATION ACTIVITIES AND FORMS	MATTERS SUBJECT TO CONSULTATION	ACTIONS TAKEN
8 Feb 2024	Community	letter box drop	operations update and modification 10 progress update	No action or correspondence recevied after letter box drop.

Attachment 5 – Plans

Plan 1A - Current status of mining and rehabilitation 2024.pdf

Plan 1B - Current landform contours at completion of annual reporting period 2024.pdf



N

Legend

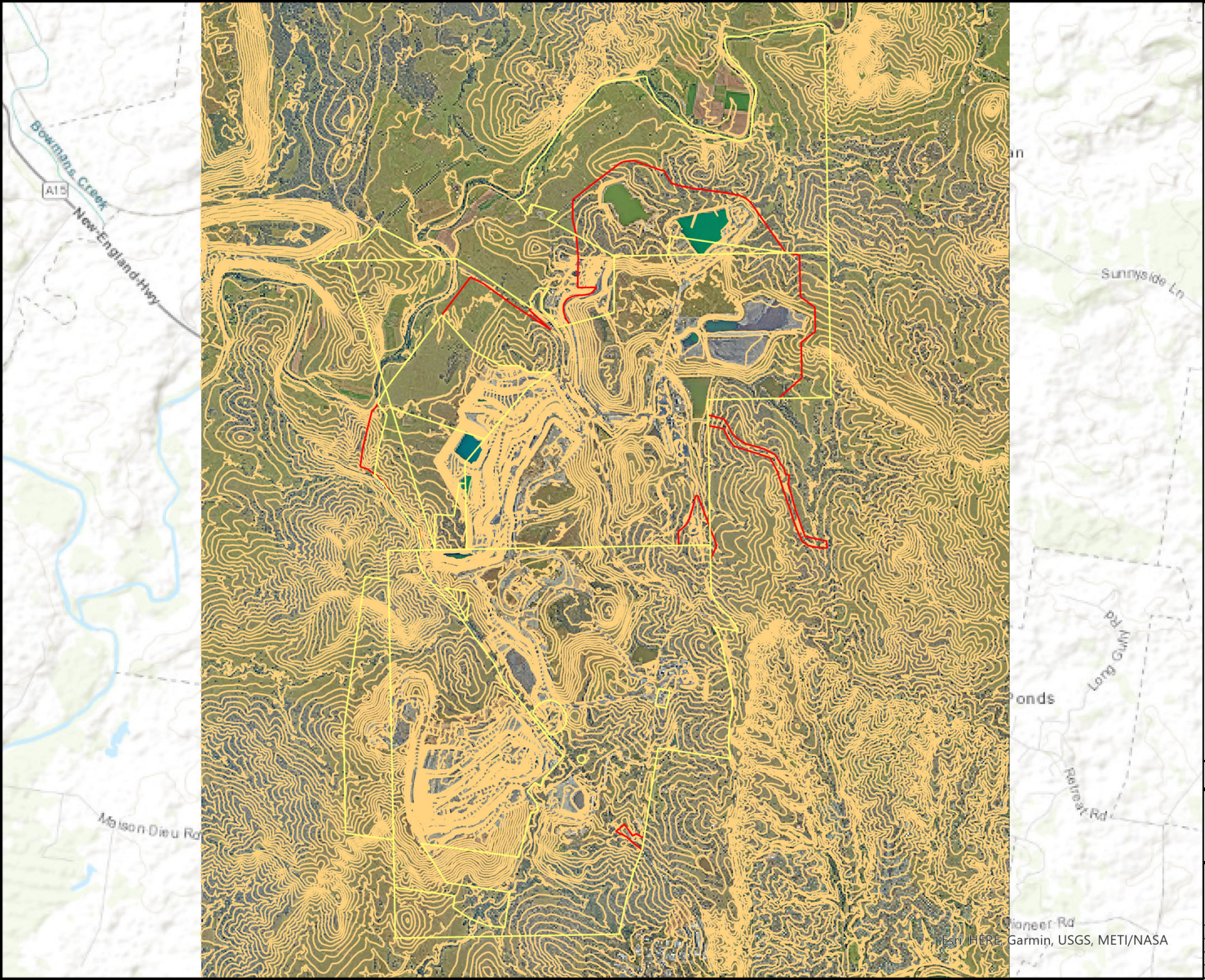
- Project approval boundary
- Current Authorisations
- Decommissioning
- Landform Establishment
- Growth Media Development
- Ecosystem and Land Use Establishment
- Ecosystem and Land Use Development
- Relinquishment (Rehabilitated)
- Rehabilitation Completion
- Beneficiation Facility
- Infrastructure Area
- Other
- Overburden Emplacement Area
- Tailings Storage Facility
- Underground Mining Area (SMP)
- Active Mining Area (Open cut void)
- Water Management Area

0 0.17 0.35 0.7 1.05 1.4 km

Plan 1A: Current status of mining and rehabilitation
Portal ID: 7889, 7890, 7926

THE Bloomfield GROUP
WE CARE. WE DELIVER.

Author:
Scale: 1:40,000
Date: 13/05/2024
File: Rehabilitation



N

Legend

- Current Authorisations
- Project approval boundary
- Current Landform Contours 2024

0 0.17 0.35 0.7 1.05 1.4 km

Plan 1B - Current landform contours
Portal ID: 7894,7926,

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WE CARE. WE DELIVER.

Author:	
Scale:	1:40,000
Date:	13/05/2024
File:	Rehabilitation