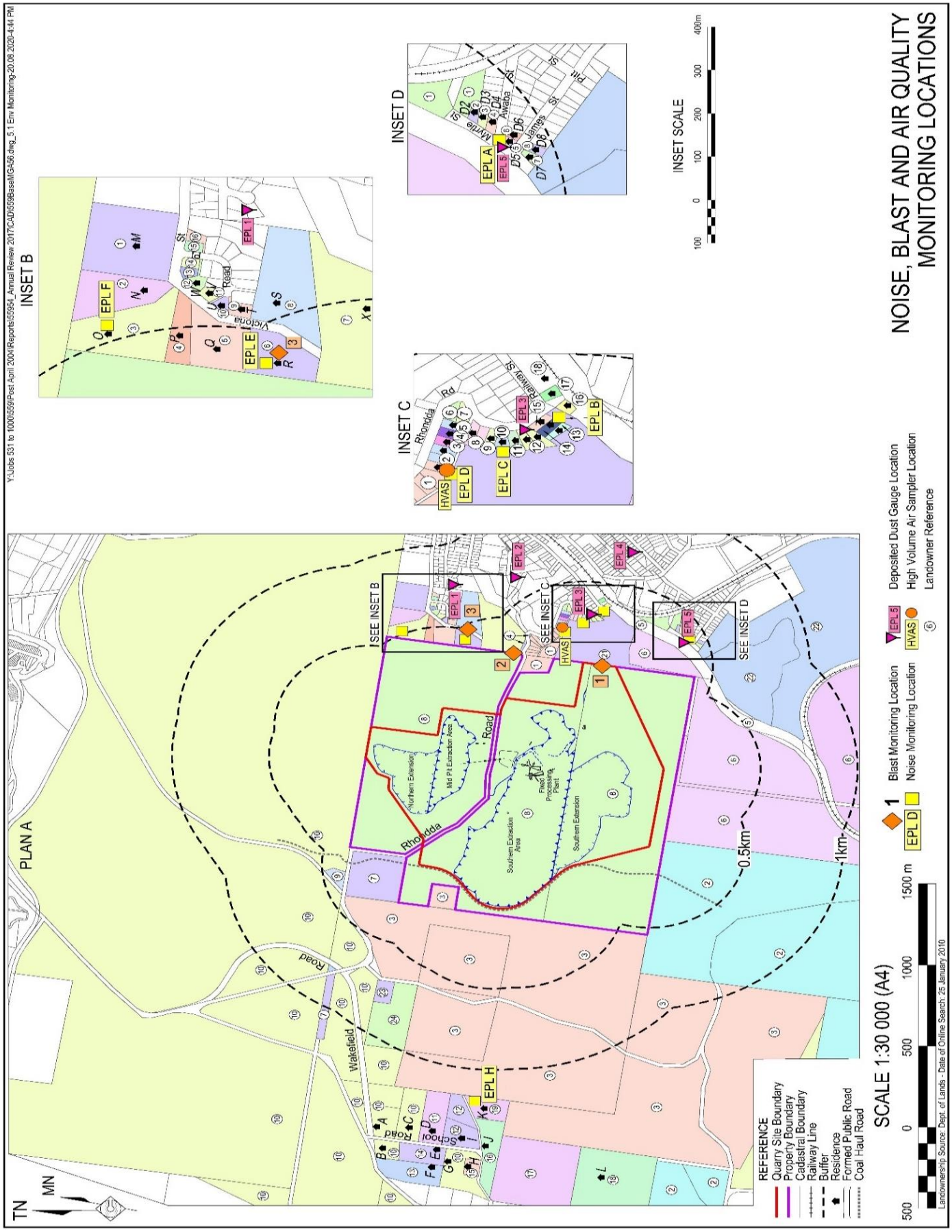
Teralba Quarry
Environmental Monitoring Summary

May 2024

Environmental Protection Licence (EPL):	536
Licensee:	Metromix Pty Limited
Licensee Address:	PO Box 1295 Parramatta, NSW 2124
Premises:	Metromix Pty Limited Teralba Quarry Rhondda Road Teralba, NSW 2284
Licensee Website:	https://www.metromix.com.au/
Licensee Website - Monitoring Results:	https://www.metromix.com.au/resources/#quarry
EPA Public Register:	https://www.epa.nsw.gov.au/licensing-and-regulation/public-registers
Prepared by:	R. W. Corkery & Co.
Sample Period:	May 2024
Date Last Data Received	13 June 2024
Date of Report	17 June 2024

Contents

1 Deposited Dust
2 Particulate Matter (PM_{10})
3 Water
4 Meteorological Conditions
5 Blasting
6 Waste


NOISE, BLAST AND AIR QUALITY MONITORING LOCATIONS
PLAN A
INSET B
INSET C
INSET D
INSET SCALE
SEE INSET B
SEE INSET C
SEE INSET D
EPL 1
EPL 2
EPL 3
EPL 4
EPL 5
EPL A
EPL B
EPL C
EPL D
EPL E
EPL F
EPL H
HVAS
Rhondda Road
Wakefield Road
School Road
Victoria Road
Railway St
Mid Pit Extraction Area
Northern Extension
Southern Extraction Area
Southern Extension
Fixed Plant Processing
0.5km
1km
Blast Monitoring Location
Noise Monitoring Location
Deposited Dust Gauge Location
High Volume Air Sampler Location
Landowner Reference
REFERENCE
Quarry Site Boundary
Property Boundary
Cadastral Boundary
Railway Line
Buffer
Residence
Formed Public Road
Coal Haul Road
SCALE 1:30 000 (A4)
TN
MN
Landownership Source: Dept. of Lands - Date of Online Search: 25 January 2010
Y:\Jobs 531 to 1000\559\Post April 2004\Reports\55954_Annual Review 2017\CAD\559BaseMG\A56.dwg_5.1 Env Monitoring-20.08.2020-4:44 PM

Deposited Dust

Sample Period Start: 01/05/2024
Sample Period End: 03/06/2024
Sample Frequency: 30 ± 2 days
Sample Collected By: Metromix - AL
Date Received by Laboratory: 03/06/2024
Date Results Received by Metromix: 12/06/2024

EPA Identification No.	Location	Criteria (g/m^2/month)	Insoluble Solids (g/m^2/month)	Ash Fraction (g/m^2/month)	% Ash Fraction
1	Hillside Crescent	4.0	0.3	0.2	67
8	Rodgers Street	4.0	0.7	0.6	86
9	Rhondda Road	4.0	0.5	0.3	60
11	Myrtle Street	4.0	1.6	1.0	63
23	York Street	4.0	0.2	0.2	100

Comments

No exceedances of the approved criteria were detected during the sample period.

Deposited Dust - Year to Date

	Rhondda Road			Myrtle Street			Hillside Crescent			Rodgers Street			York Street		
	Total Insoluble Solids	Ash Fraction	% Ash	Total Insoluble Solids	Ash Fraction	% Ash	Total Insoluble Solids	Ash Fraction	% Ash	Total Insoluble Solids	Ash Fraction	% Ash	Total Insoluble Solids	Ash Fraction	% Ash
Units	**g/m^2/month**	**g/m^2/month**		**g/m^2/month**	**g/m^2/month**		**g/m^2/month**	**g/m^2/month**		**g/m^2/month**	**g/m^2/month**		**g/m^2/month**	**g/m^2/month**	
EPA Approved Level	**4.0**			**4.0**			**4.0**			**4.0**			**4.0**		
January	0.3	0.2	67	0.5	0.3	60	1.7	0.1	6	0.2	0.1	50	0.6	0.2	33
February	0.6	0.3	50	1.3	0.4	31	0.8	0.4	50	0.5	0.2	40	1.2	0.6	50
March	0.3	0.1	33	0.5	0.2	40	1.6	0.6	38	0.2	0.1	50	0.3	0.1	33
April	0.8	0.3	38	0.8	0.4	50	0.5	0.2	40	0.6	0.3	50	1.1	0.4	36
May	0.5	0.3	60	1.6	1.0	63	0.3	0.2	67	0.7	0.6	86	0.2	0.2	100
June															
July															
August															
September															
October															
November															
December															
Annual Average	**0.5**	0.2	50	**0.9**	0.5	49	**1.0**	0.3	40	**0.4**	0.3	55	**0.7**	0.3	51
Annual Maximum	**0.8**	0.3	67	**1.6**	1.0	63	**1.7**	0.6	67	**0.7**	0.6	86	**1.2**	0.6	100
Annual Minimum	**0.3**	0.1	33	**0.5**	0.2	31	**0.3**	0.1	6	**0.2**	0.1	40	**0.2**	0.1	33

Particulate Matter (PM_{10})

Sample Location: EPA 3 - Rodgers Street
Sample Frequency: 6 days

Date Sample Taken (24-hr)	Collected by	Date Results Received	PM_{10} $\mu g/m^3$	Monthly Average Criteria ($\mu g/m^3$)	Annual Average Criteria ($\mu g/m^{3)}$
05/05/2024	CBased - TD	16/05/2024	3.7	50	
11/05/2024	CBased - TD	21/05/2024	5.1	50	
17/05/2024	CBased - TD	29/05/2024	15.8	50	
23/05/2024	CBased - TD	03/06/2024	8.5	50	
29/05/2024	CBased - TD	06/06/2024	17.1	50	
Monthly Average			10.0		25/30*

*Project Approval (PA 10_0183) outlines the annual average PM_{10} criteria to be 30$\mu g/m^3$. However, EPL 536 Condition R4.5a) requires that the air quality monitoring data is assessed against the Air Impact Assessment Criteria outlined in EPA's *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*. The most up to date version of this guideline was published in 2022 and outlines the annual average PM_{10} criteria to be 25$\mu g/m^3$. Metromix has considered both criteria for its review of particulate matter monitoring.

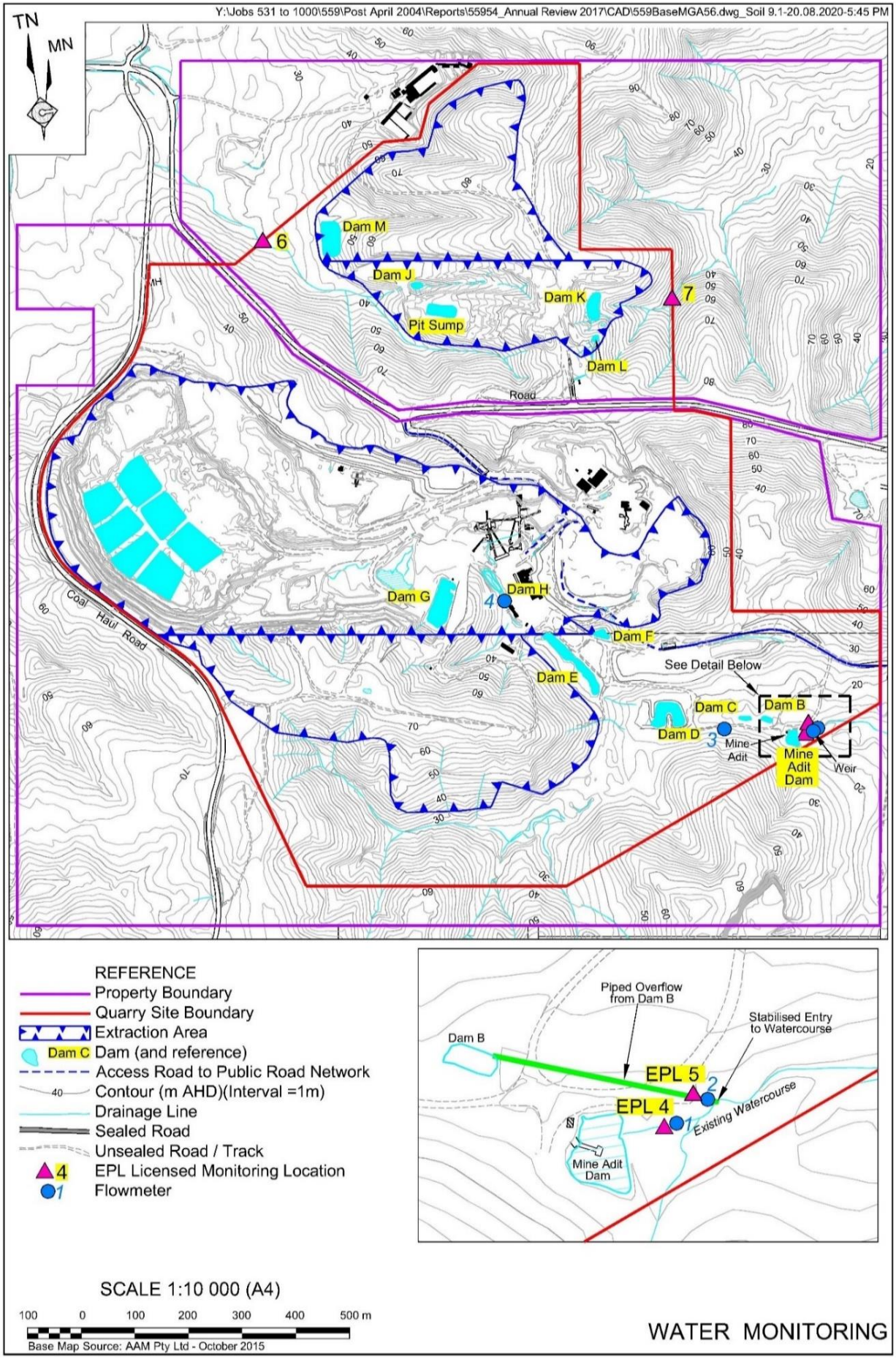
Comments

All PM_{10} results remained below the approved criteria for the sample period.

Particulate Matter (PM_{10}) - Year to Date

Date	PM_{10} ($\mu g/m^3$)	Monthly Average ($\mu g/m^3$)	Year to Date Average ($\mu g/m^3$)	24-Hr Criteria ($\mu g/m^3$)	Comments
06/01/2024	12.7	15.9	12.7	50	
12/01/2024	14.5		13.6	50	
18/01/2024	8.1		11.8	50	
24/01/2024	20.0		13.8	50	
30/01/2024	24.4		15.9	50	
05/02/2024	46.3	27.5	12.7	50	See comment in February 2024 Monitoring Summary.
11/02/2024	26.3		21.8	50	
17/02/2024	20.5		21.6	50	
23/02/2024	22.5		21.7	50	
29/02/2024	21.7		21.7	50	
06/03/2024	18.9	14.3	21.4	50	
12/03/2024	22.0		21.5	50	
18/03/2024	8.5		20.5	50	
24/03/2024	9.4		19.7	50	
30/03/2024	12.7		19.2	50	
05/04/2024	9.1	11.1	18.6	50	
11/04/2024	12.0		18.2	50	
17/04/2024	14.9		18.0	50	
23/04/2024	9.6		17.6	50	
29/04/2024	10.0		17.2	50	
05/05/2024	3.7	10.0	16.6	50	
11/05/2024	5.1		16.0	50	
17/05/2024	15.8		16.0	50	
23/05/2024	8.5		15.7	50	
29/05/2024	17.1		15.8	50	

Minimum	3.7
Maximum	46.3
Average	15.8
Standard Deviation	8.9
24-hr Criteria	50
Number of Exceedences	0
Annual Average Criteria	25/30*
Annual Average Criteria Exceeded	No
*See explanation on previous page.	


Y:\Jobs 531 to 1000\559\Post April 2004\Reports\55954_Annual Review 2017\CAD\559BaseMGA56.dwg_Soil 9.1-20.08.2020-5:45 PM
TN
MN
Dam M
Dam J
Dam K
Pit Sump
Dam L
Road
Dam G
Dam H
Dam F
Dam E
Coal Haul Road
See Detail Below
Dam C
Dam B
Dam D
Mine Adit
Mine Adit Dam
Weir
REFERENCE
Property Boundary
Quarry Site Boundary
Extraction Area
Dam C Dam (and reference)
Access Road to Public Road Network
Contour (m AHD)(Interval =1m)
Drainage Line
Sealed Road
Unsealed Road / Track
4 EPL Licensed Monitoring Location
1 Flowmeter
Piped Overflow from Dam B
Stabilised Entry to Watercourse
EPL 5
EPL 4
Existing Watercourse
Mine Adit Dam
SCALE 1:10 000 (A4)
100 0 100 200 300 400 500 m
Base Map Source: AAM Pty Ltd - October 2015
WATER MONITORING

Water

Water Monitoring

EPL Point 4 - Monthly Monitoring

Date	Time	Sampled By	Date Results Received		pH	EC	TSS	Oil & Grease	Comments
				Units	pH Units	µS/cm	mg/L	mg/L	
				EPL Criterion*	6.5-8.5	NA	<50	10	
				ANZECC Water Quality Limits	6.5-8.5	125-2200	<50	-	
01/05/2024	7:00am	Metromix - AL	8/05/2024		7.2	1670	5	<5	

EPL Point 5 - Monitoring Daily During Discharge

Date	Time	Sampled By	Date Results Received		pH	EC	TSS	Oil & Grease	Comments
				Units	pH Units	µS/cm	mg/L	mg/L	
				EPL Criterion*	6.5-8.5	NA	<50	10	
				ANZECC Water Quality Limits	6.5-8.5	125-2200	<50	-	
01/05/2024	7:05am	Metromix - AL	8/05/2024		6.9	758	<5	<5	

EPL Point 6 - Monthly Monitoring

Date	Time	Sampled By	Date Results Received		pH	EC	TSS	Oil & Grease	Comments
				Units	pH Units	µS/cm	mg/L	mg/L	
				EPL Criterion*	6.5-8.5	NA	<50	10	
				ANZECC Water Quality Limits	6.5-8.5	125-2200	<50	-	
No discharge occurred at this location and therefore no monitoring was required.									

EPL Point 7 - Monthly Monitoring

Date	Time	Sampled By	Date Results Received		pH	EC	TSS	Oil & Grease	Comments
				Units	pH Units	µS/cm	mg/L	mg/L	
				EPL Criterion*	6.5-8.5	NA	<50	10	
				ANZECC Water Quality Limits	6.5-8.5	125-2200	<50	-	
No discharge occurred at this location and therefore no monitoring was required.									

Flow Meter Records

EPA Identified Point	Location	Description	Sample Period	Daily Average Flow ML	Monthly Total Flow ML
4	Adit Dam	Adit Dam to Creek (off site)	01/05/2024 - 01/06/2024	1.02	31.6
5	Dam B	Discharge from Dam B (from Quarry)	01/05/2024 - 01/06/2024	0.89	27.5
4	Adit Dam	Water pumped from Adit Dam to Dam G (processing use)	01/05/2024 - 03/06/2024	3.59	118.4

Comments

All water monitoring results remained within the approved criteria levels during the monitoring period.

Water - Year to Date

EPL Point 4 : Monthly Monitoring

	pH	EC	TSS	Oil & Grease	Comments
Units	pH Units	µS/cm	mg/L	mg/L	-
EPL Criterion*	6.5-8.5	NA	<50	10	-
ANZECC Water Quality Limits	6.5-8.5	125-2200	<50	-	-
January	7.3	2090	<5	6	-
February	-	-	-	-	No discharge occurred at this location and no monitoring was undertaken (see February 2024 monitoring summary).
March	8.3	2100	<5	<5	-
April	7.4	2100	<5	<5	-
May	7.2	1670	5	<5	-
June					
July					
August					
September					
October					
November					
December					

EPL Point 5 : Monitoring During Discharge

	pH	EC	TSS	Oil & Grease	Comments
Units	pH Units	µS/cm	mg/L	mg/L	
EPL Criterion*	6.5-8.5	NA	<50	10	
ANZECC Water Quality Limits	6.5-8.5	125-2200	<50	-	
8 April	6.9	798	5	<5	-
1 May	6.9	758	<5	<5	-

Flow Meter Records

EPA Identifier	Location	Description	Date	Monthly
4	Adit Dam	Water pumped from Adit Dam to Dam G (processing use)	02/01/2024 - 01/02/2024	0.2
			01/02/2024 - 01/03/2024	72.2
			01/03/2024 - 02/04/2024	76.0
			02/04/2024 - 01/05/2024	86.2
			01/05/2024 - 03/06/2024	118.4

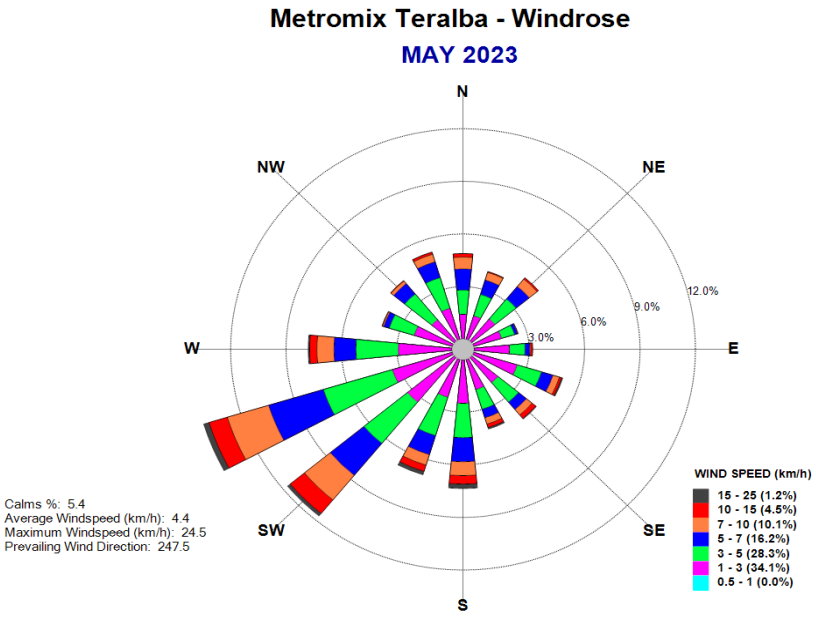
EPA Identifier	Location	Description	Date	Monthly
5	Dam B	Discharge from Dam B (from Quarry)	02/01/2024 - 01/02/2024	0.0
			01/02/2024 - 01/03/2024	0.9
			01/03/2024 - 02/04/2024	0.0
			02/04/2024 - 01/05/2024	11.4
			01/05/2024 - 01/06/2024	27.5

EPA Identifier	Location	Description	Date	Monthly
4	Adit Dam	Adit Dam to Creek (off site)	02/01/2024 - 01/02/2024	20.3
			01/02/2024 - 01/03/2024	0.9
			01/03/2024 - 02/04/2024	2.8
			02/04/2024 - 01/05/2024	45.1
			01/05/2024 - 01/06/2024	31.6

Meteorological Conditions

Monitoring Location: Mid-Pit Entrance
Monitoring Frequency: Continuous

Windrose



Monthly Summary

Date	Mean Wind Direction (°)	Mean Wind Speed (km/h)	Daily Rainfall (mm)	Mean Sigma Theta	Max Temperature (°C) at 2m	Min Temperature (°C) at 2m
01/05/24	229	6.4	28.4	29.2	16.0	12.8
02/05/24	186	4.5	4.2	36.4	20.6	12.8
03/05/24	194	3.9	1.4	44.5	20.6	12.6
04/05/24	204	3.3	9.4	30.9	20.4	13.6
05/05/24	199	5.3	30.4	29.7	16.8	12.0
06/05/24	158	7.0	56.8	36.5	17.8	14.0
07/05/24	185	3.5	3.4	33.4	22.2	12.8
08/05/24	181	3.6	1.4	28.5	21.2	13.2
09/05/24	167	3.6	0.2	28.4	21.8	14.2
10/05/24	160	2.8	2.4	28.0	21.2	13.6
11/05/24	135	3.3	22.8	27.7	17.4	13.6
12/05/24	229	4.6	1.0	24.1	20.6	12.8
13/05/24	243	6.6	2.2	22.1	19.8	13.4
14/05/24	243	3.4	0.0	27.8	23.8	13.2
15/05/24	192	3.0	0.0	27.8	23.0	15.0
16/05/24	163	2.3	0.0	24.8	21.6	12.2
17/05/24	217	3.7	0.0	23.5	21.6	13.0
18/05/24	216	10.1	10.4	33.0	15.8	9.4
19/05/24	237	6.5	0.2	26.6	18.4	9.2
20/05/24	247	5.5	3.8	30.0	17.6	7.6
21/05/24	217	6.0	6.6	31.3	16.4	11.4
22/05/24	232	5.6	0.0	27.8	19.2	10.6
23/05/24	222	3.2	0.0	27.0	20.6	10.4
24/05/24	219	2.8	0.0	25.3	20.2	9.9
25/05/24	192	2.7	0.0	36.2	19.6	12.2
26/05/24	235	2.9	0.0	25.3	22.4	12.2
27/05/24	216	2.8	0.0	28.6	20.2	10.0
28/05/24	213	3.7	0.0	22.9	22.2	10.6
29/05/24	145	4.6	0.0	18.9	22.0	8.8
30/05/24	118	5.7	0.0	21.2	23.6	11.0
31/05/24	110	5.7	4.0	21.4	18.6	15.4

Meteorological Conditions - Year to Date

Monitored Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Total Rainfall (mm)	33.0	165.8	27.6	335.8	189.0								751.2
Average Minimum Temperature (°C) at 2m	17.0	16.4	15.0	12.0	7.6								13.6
Average Maximum Temperature (°C) at 2m	42.2	41.2	36.8	30.0	23.8								34.8
Average Minimum Temperature (°C) at 10m	17.4	16.2	15.4	12.2	8.9								14.0
Average Maximum Temperature (°C) at 10m	41.0	40.3	35.5	28.6	23.2								33.7
Average Sigma Theta	33.3	34.6	32.5	30.3	28.3								31.8
Average Solar Radiation (W/m^2)	192.0	160.7	159.0	127.4	88.3								145.5
Average Relative Humidity (%)	70.0	75.0	74.0	73.0	77.0								73.8

Blasting

Monitoring Frequency Each Blast

Blast Monitoring Completed By MAXAM

Shot #	Day	Month	Time	Location	Location 1		Location 2		Location 3		Comments
					Overpressure	Vibration	Overpressure	Vibration	Overpressure	Vibration	
					dB(L)	mm/s	dB(L)	mm/s	dB(L)	mm/s	
1	10	January	13:14:00	Stage 2B-1	103.3	0.17	102.7	0.08	NM	NM	
2	19	January	11:52:39	Stage 2B-2	96.3	0.33	99.9	0.06	NM	NM	
3	29	January	11:51:27	Stage 2B	90.9	0.32	96.7	0.09	NM	NM	
4	7	February	11:38:31	Stage 2B-3	106.7	0.26	97.6	0.07	NM	NM	
5	26	February	1:49:00	Stage 2B-3	100.1	0.34	105.2	0.08	NM	NM	
6	29	February	10:47:00	Stage 2B	112.1	0.38	108.2	0.06	NM	NM	
7	14	March	12:59:31	Stage 1C	102.3	0.18	NT	NT	NM	NM	
8	2	April	12:43;14	Stage 2B-3	109.5	0.30	101.7	0.08	NM	NM	
9	12	April	12:09:28	Stage 1C	NT	NT	NT	NT	NM	NM	
10	29	April	13:15:28	Stage 2B-3	105.2	0.30	NT	NT	NM	NM	
11	13	May	1:28:00	Stage 2B-3	NT	NT	NT	NT	NM	NM	
12	22	May	2:17:00	Stage 1C	101.6	0.36	NT	NT	NM	NM	

NT Not Triggered

NM Not Monitored

Blasting Criteria

Parameter	Units of Measure	Limit	
		95% of blasts per year	100% of blasts
Airblast Overpressure (Linear Peak)	decibels (dBL)	115	120
Ground Vibration (Peak Particle Velocity)	millimeters per second	5	10

Comments

Two blasting events occurred during the monitoring period. All blast monitoring results were within the approved criteria.

Waste Management

Waste Removal Summary

Month	January	February	March	April	May	June	July	August	September	October	November	December
Item	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity
General Waste Bin (10m^3)	-	-	-	-	-							
General Waste Bin (4.5m^3)	-	-	-	-	-							
General Waste Bin (6m3)	-	-	-	-	-							
General Waste Bin (20m^3)	1	-	1	1	1							
Paper & Cardboard Bin (3m^3)	2	1	2	1	1							
Shredded Paper Bin (240L)	-	-	-	-	-							
Co Mingled Recycling (2 x 240 L)	2	4	4	4	4							
Tonner Cartridges	49	-	-	-	-							
Waste Oil (L)	-	-	-	-	-							
Scrap Steel (t)	2.86	-	3.28	2.66	-							
Timber (m^3)	-	-	-	-	-							
Engine Coolant (L)	-	-	-	-	-							
Oil Filters (240L bin)	-	3	-	-	4							
Batteries	-	-	-	-	-							
Oily Rags (240L bin)	-	-	-	-	-							
Aerosols (120L bin)	-	-	-	-	-							
Tyres	-	-	-	-	-							
Other	-	-	-	-	-							
Oily Water (L)	-	-	-	-	-							
Grease Waste (L)	-	-	-	-	-							