



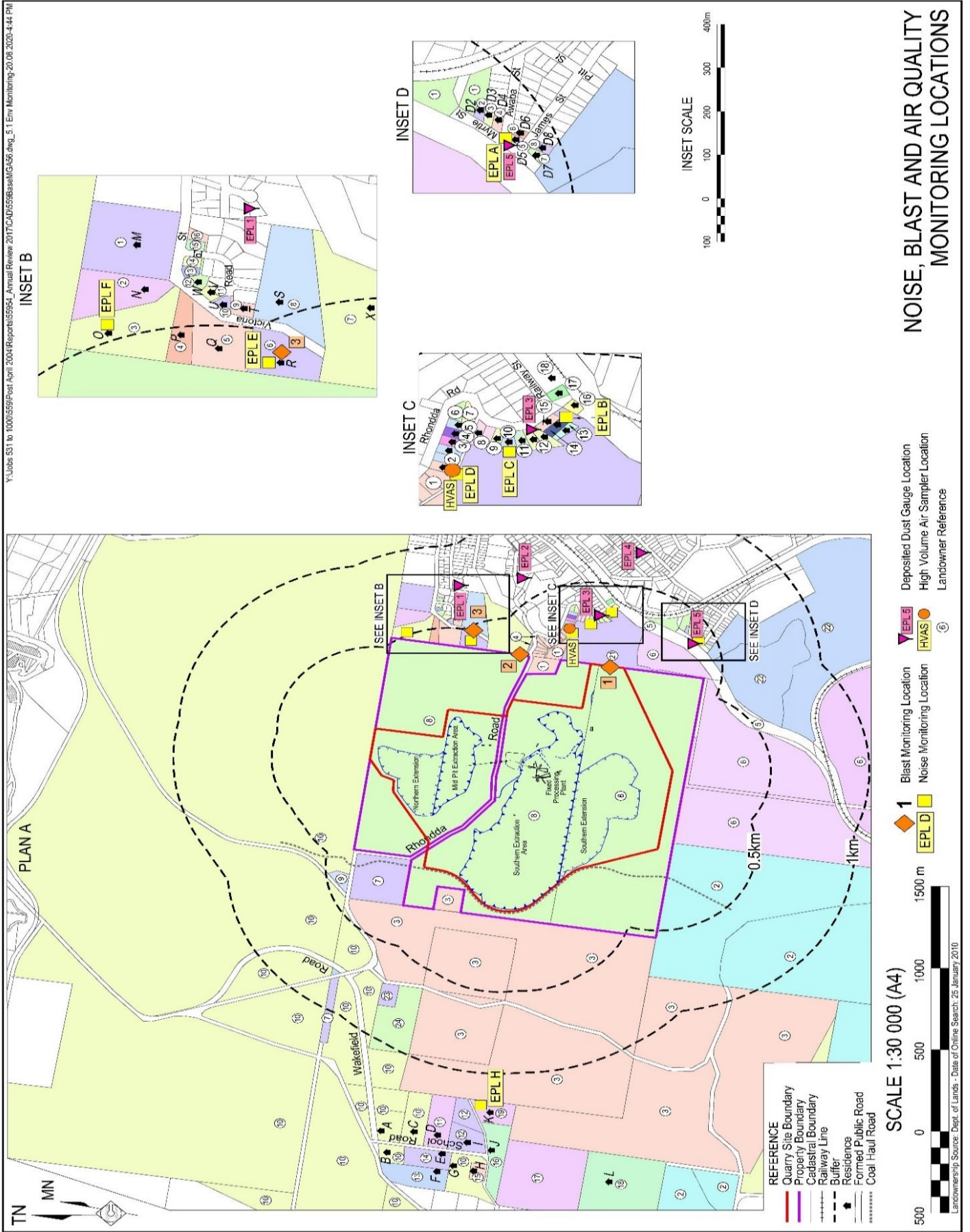
# Teralba Quarry Environmental Monitoring Summary

August 2022

<b>Environmental Protection Licence (EPL):</b>	536
<b>Licensee:</b>	Metromix Pty Limited
<b>Licensee Address:</b>	PO Box 1295 Parramatta, NSW 2124
<b>Premises:</b>	Metromix Pty Limited Teralba Quarry Rhondda Road Teralba, NSW 2284
<b>Licensee Website:</b>	<a href="https://www.metromix.com.au/">https://www.metromix.com.au/</a>
<b>Licensee Website - Monitoring Results:</b>	<a href="https://www.metromix.com.au/resources/#quarry">https://www.metromix.com.au/resources/#quarry</a>
<b>EPA Public Register:</b>	<a href="https://www.epa.nsw.gov.au/licensing-and-regulation/public-registers">https://www.epa.nsw.gov.au/licensing-and-regulation/public-registers</a>
<b>Prepared by:</b>	R. W. Corkery & Co.
<b>Sample Period:</b>	July 2022
<b>Date Last Data Received</b>	9 September 2022
<b>Date of Report</b>	13 September 2022

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**Deposited Dust**

Sample Period Start: 1/08/2022  
 Sample Period End: 1/09/2022  
 Sample Frequency: 30 ± 2 days  
 Sample Collected By: Metromix - AL  
 Date Results Received by Lab: 1/09/2022  
 Date Results Received by Metromix: 12/09/2022

EPA Identification No.	Location	Criteria (g/m <sup>2</sup> /month)	Insoluble Solids (g/m <sup>2</sup> /month)	Ash Fraction (g/m <sup>2</sup> /month)	% Ash Fraction
1	Hillside Crescent	4.0	0.3	0.3	100
8	Rodgers Street	4.0	0.2	0.2	100
9	Rhondda Road	4.0	1.2	0.8	67
11	Myrtle Street	4.0	1.8	0.9	50
23	York Street	4.0	1.3	0.6	46

**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 <sup>2</sup> /month	g/m <sup>2</sup> /month		g/m <sup>2</sup> /month	g/m <sup>2</sup> /month		g/m <sup>2</sup> /month	g/m <sup>2</sup> /month		g/m <sup>2</sup> /month	g/m <sup>2</sup> /month		g/m <sup>2</sup> /month	g/m <sup>2</sup> /month	
<b>EPA Approved Level</b>	<b>4.0</b>			<b>4.0</b>			<b>4.0</b>			<b>4.0</b>			<b>4.0</b>		
June 2022	0.3	0.2	67	1.8	1.0	56	0.4	0.3	75	0.4	0.2	50	0.7	0.5	71
February	0.8	0.4	50	4.9	3.6	73	0.9	0.3	33	0.8	0.3	38	1.2	0.5	42
March	0.6	0.2	67	5.3	4.1	77	0.5	0.1	20	0.3	0.1	33	0.3	0.2	67
April	10.5	9.1	87	1.7	1.0	59	0.4	0.1	25	0.3	0.1	33	1.1	0.6	55
May	1.5	1.2	80	1.1	0.5	45	0.2	0.1	50	0.2	0.2	100	0.5	0.3	60
June	0.8	0.6	75	0.7	0.5	71	0.1	0.1	100	0.3	0.2	67	0.7	0.4	57
July	0.5	0.2	40	2.5	0.6	24	0.3	0.1	33	0.3	0.1	33	0.5	0.2	40
August	1.2	0.8	67	1.8	0.9	50	0.3	0.3	100	0.2	0.2	100	1.3	0.6	46
September															
October															
November															
December															
<b>Annual Average</b>	<b>2.0</b>	1.6	66.5	<b>2.5</b>	1.5	56.9	<b>0.4</b>	0.2	54.5	<b>0.4</b>	0.2	56.8	<b>0.8</b>	0.4	54.8
<b>Annual Maximum</b>	<b>10.5</b>	9.1	86.7	<b>5.3</b>	4.1	77.0	<b>0.9</b>	0.3	100.0	<b>0.8</b>	0.3	100.0	<b>1.3</b>	0.6	71.4
<b>Annual Minimum</b>	<b>0.3</b>	0.2	40.0	<b>0.7</b>	0.5	24.0	<b>0.1</b>	0.1	20.0	<b>0.2</b>	0.1	33.0	<b>0.3</b>	0.2	40.0

**Particulate Matter (PM<sub>10</sub>)**

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

Date Sample Taken (24-hr)	Collected by	Date Results Received	PM <sub>10</sub> µg/m <sup>3</sup>	Monthly Average Criteria (µg/m <sup>3</sup> )	Annual Average Criteria (µg/m <sup>3</sup> )
2/08/2022	CBased - MB	15/08/2022	5.6	50	
8/08/2022	CBased - TD	17/08/2022	7.8	50	
14/08/2022	CBased - TD	23/08/2022	2.2	50	
20/08/2022	CBased - TD	30/08/2022	7.1	50	
26/08/2022	CBased - TD	5/09/2022	6.2	50	
<b>Monthly Average</b>			5.78		25/30*

\*Project Approval (PA 10\_0183) outlines the annual average PM<sub>10</sub> criteria to be 30µg/m<sup>3</sup>. 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 2017 and outlines the annual average PM<sub>10</sub> criteria to be 25µg/m<sup>3</sup>. Metromix has considered both criteria for its review of particulate matter monitoring.

**Comments**

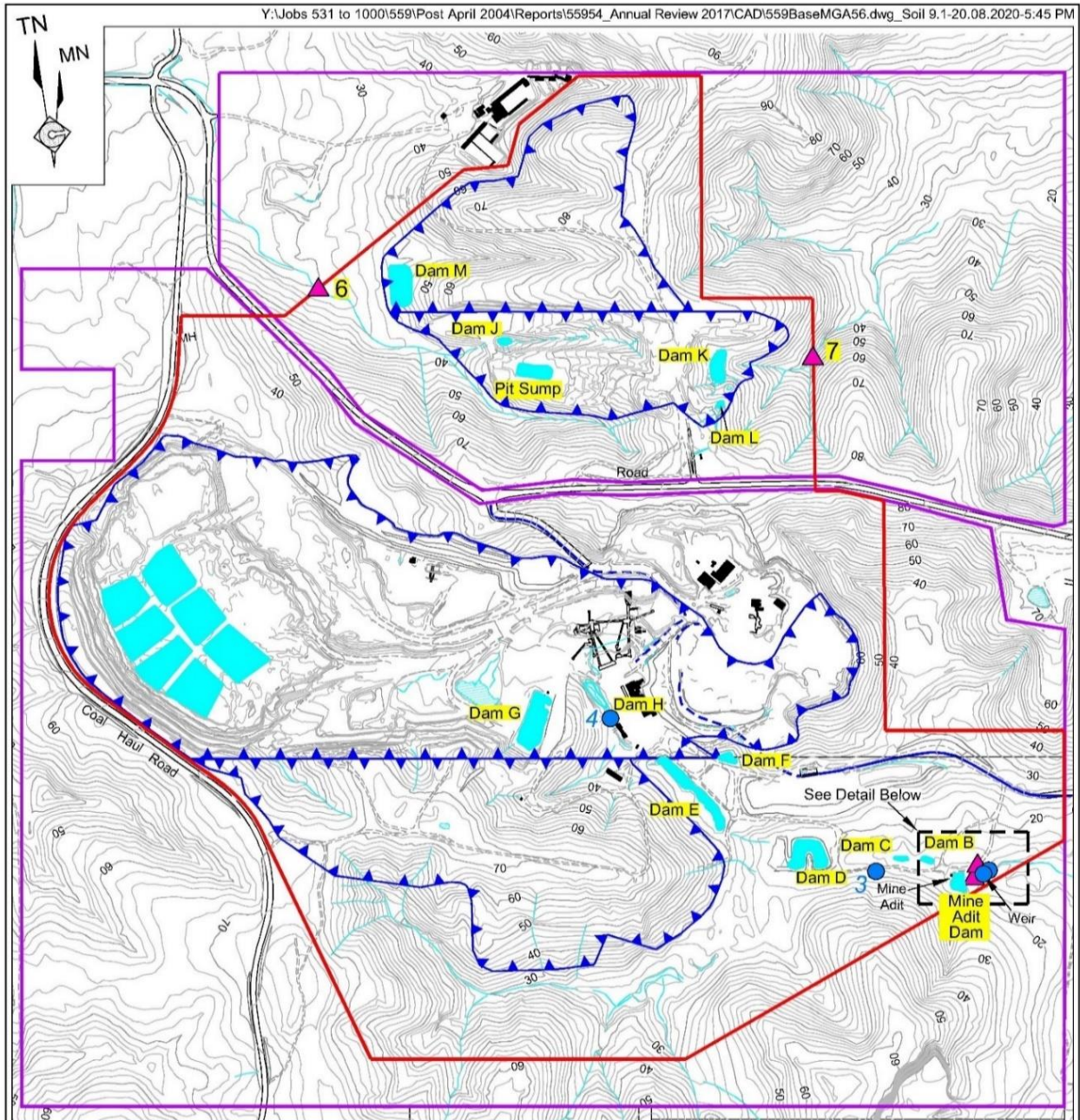
All PM<sub>10</sub> results remained below the approved criteria for the sample period.

Particulate Matter (PM<sub>10</sub>) - Year to Date

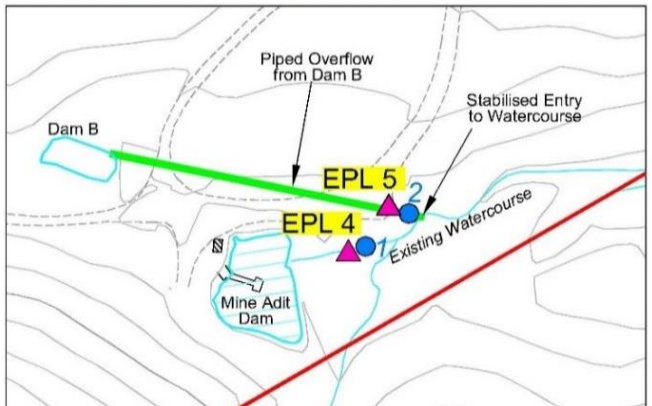
Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	Monthly Average (µg/m <sup>3</sup> )	Year to Date Average (µg/m <sup>3</sup> )	24-Hr Criteria (µg/m <sup>3</sup> )	Comments
4/01/2022	9.3		9.3	50	
10/01/2022	14.5		11.9	50	
16/01/2022	15.4		13.1	50	
22/01/2022	8		11.8	50	
28/01/2022	11.4	11.7	11.7	50	
3/02/2022	16.1		12.5	50	
9/02/2022	13.1		12.5	50	
15/02/2022	21.2		13.6	50	
21/02/2022	15.4		13.8	50	
27/02/2022	7.7	14.7	13.2	50	
5/03/2022	11.2		13.0	50	
11/03/2022	14		13.1	50	
17/03/2022	13.1		13.1	50	
23/03/2022	14.8		13.2	50	
29/03/2022	8	12.2	12.9	50	
4/04/2022	9.8		12.7	50	
10/04/2022	11.2		12.6	50	
16/04/2022	8.6		12.4	50	
22/04/2022	4.6		12.0	50	
28/04/2022	5	7.8	11.6	50	
4/05/2022	7.7		11.4	50	
10/05/2022	3.7		11.1	50	
16/05/2022	6.3		10.9	50	
22/05/2022	4.4		10.6	50	
28/05/2022	6	5.6	10.4	50	
3/06/2022	10		10.4	50	
9/06/2022	3.1		10.1	50	
15/06/2022	8.4		10.1	50	
21/06/2022	13.1		10.2	50	
27/06/2022	11.3	9.2	10.2	50	
3/07/2022	8.8		10.2	50	
9/07/2022	2.9		9.9	50	
15/07/2022	5.6		9.8	50	
21/07/2022	6.9		9.7	50	
27/07/2022	7.4	6.3	9.7	50	
2/08/2022	5.6		9.5	50	
8/08/2022	7.8		9.5	50	
14/08/2022	2.2		9.3	50	
20/08/2022	7.1		9.2	50	
26/08/2022	6.2	5.8	9.2	50	

<b>Minimum</b>	2.2
<b>Maximum</b>	21.2
<b>Average</b>	9.2
<b>Standard Deviation</b>	4.27
<b>24-hr Criteria</b>	50
<b>Number of Exceedences</b>	0
<b>Annual Average Criteria</b>	25/30*
<b>Annual Average Criteria Exceeded</b>	No

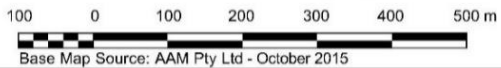
\*See explanation on previous page.



- 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



SCALE 1:10 000 (A4)



**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	-	
1/08/2022	7.30am	Metromix - AL	8/08/2022		7.15	1530	10	<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	-	
1/08/2022	7.30am	Metromix - AL	8/08/2022		6.79	587	<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	Location	Description	Sample Period	Daily Average Flow	Monthly Total Flow ML
4	Adit Dam	Adit Dam to Creek (off site)	1/08/2022 to 1/09/2022	2.73	84.5
5	Dam B	Discharge from Dam B (from Quarry)	1/08/2022 to 1/09/2022	0.06	1.9
4	Adit Dam	Water pumped from Adit Dam to Dam G (processing use)	1/08/2022 to 1/09/2022	0.41	12.8

**Comments**

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



**Water - Year to Date****EPL Point 4 : Monthly Monitoring**

	<b>pH</b>	<b>EC</b>	<b>TSS</b>	<b>Oil &amp; Grease</b>	<b>Comments</b>
Units	pH Units	µS/cm	mg/L	mg/L	-
EPL Criterion*	6.5-8.5	NA	<50	10	-
June 2022	6.5-8.5	125-2200	<50	<5	-
January	7.13	1830	<5	<5	-
February	7.1	2010	6	<5	-
March	6.96	1360	6	<5	-
April	7.27	1550	23	<5	-
May	7.68	1750	<5	<5	-
June	7.12	1710	7	<5	-
July	7.16	1620	12	<5	-
August	7.15	1530	10	<5	-
September					
October					
November					
December					

**EPL Point 5 : Monitoring During Discharge**

	<b>pH</b>	<b>EC</b>	<b>TSS</b>	<b>Oil &amp; Grease</b>	<b>Comments</b>
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	-	-
March	6.78	664	10	<5	-
April	6.88	758	<5	<5	-
May	7.1	746	<5	<5	-
June	6.85	774	<5	<5	-
July	7	638	<5	<5	-
August	6.79	587	<5	<5	-

**Flow Meter Records**

EPA Identifier	Location		Date	Monthly
4	Adit Dam	Water pumped from Adit Dam to Dam G (processing use)	4/01/2022 - 1/02/2022	100.8
			1/02/2022 - 1/03/2022	107.5
			1/03/2022 - 1/04/2022	86.5
			1/04/2022 - 2/05/2022	67.4
			2/05/2022 - 1/06/2022	100.2
			1/06/2022 - 5/07/2022	98.2
			5/07/2022 - 1/08/2022	185.1
			1/08/2022 - 1/09/2022	12.8

EPA Identified Point	Location	Description	Date	Monthly Total (ML)
5	Dam B	Discharge from Dam B (from Quarry)	4/01/2022 - 1/02/2022	2.1
			1/02/2022 - 1/03/2022	0.0
			1/03/2022 - 1/04/2022	2.5
			1/04/2022 - 2/05/2022	13.4
			2/05/2022 - 1/06/2022	1.6
			1/06/2022 - 5/07/2022	0.2
			5/07/2022 - 1/08/2022	34.1
			1/08/2022 - 1/09/2022	1.9

EPA Identified Point	Location	Description	Date	Monthly Total (ML)
4	Adit Dam	Adit Dam to Creek (off site)	4/01/2022 - 1/02/2022	36.9
			1/02/2022 - 1/03/2022	39.8
			1/03/2022 - 1/04/2022	64.1
			1/04/2022 - 2/05/2022	169.1
			2/05/2022 - 1/06/2022	47.8
			1/06/2022 - 5/07/2022	51.4
			5/07/2022 - 1/08/2022	321.6
			1/08/2022 - 1/09/2022	84.5

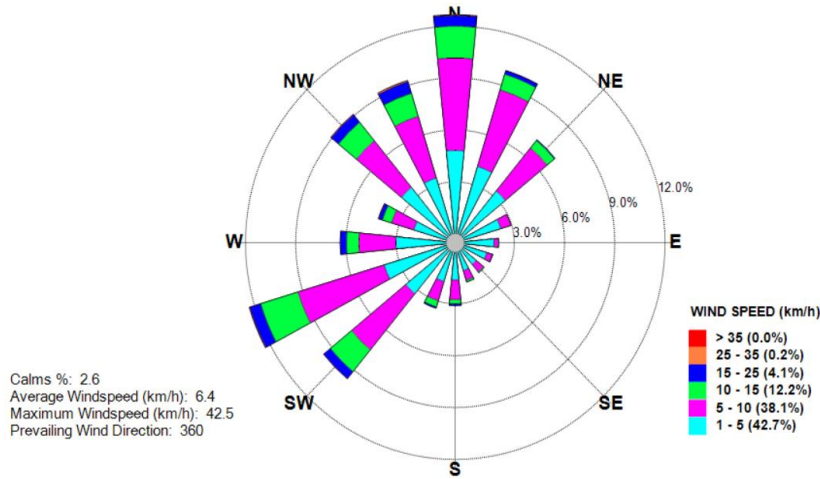
### Meteorological Conditions

Monitoring Location: Mid-Pit Entrance  
 Monitoring Frequency: Continuous

Windrose

### Metromix Teralba - Windrose

AUGUST 2022



### 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
01/08/22	179	6.6	0.0	27.0	19.2	9.6
02/08/22	194	4.8	0.0	30.6	18.8	7.6
03/08/22	129	7.9	0.0	19.7	22.8	8.8
04/08/22	209	9.3	14.2	25.7	21.8	15.4
05/08/22	204	6.5	0.0	46.2	21.6	14.2
06/08/22	243	7.0	0.0	45.2	18.6	11.7
07/08/22	221	5.4	0.0	32.1	17.6	8.6
08/08/22	218	7.9	0.0	27.1	17.0	9.2
09/08/22	224	7.8	5.6	27.3	16.6	9.0
10/08/22	215	5.1	0.2	31.1	16.6	8.8
11/08/22	108	4.6	0.0	18.3	15.6	9.2
12/08/22	118	5.2	7.4	20.4	14.8	11.8
13/08/22	214	5.8	0.8	31.0	18.8	10.6
14/08/22	238	9.2	0.0	49.5	16.8	8.6
15/08/22	221	8.1	0.0	39.6	17.2	9.6
16/08/22	244	6.6	0.0	31.4	18.6	8.8
17/08/22	230	4.8	0.0	25.8	19.2	6.8
18/08/22	209	7.1	0.0	29.7	20.6	9.6
19/08/22	235	6.9	4.0	30.5	21.4	10.2
20/08/22	242	5.6	0.0	35.6	18.8	7.2
21/08/22	156	5.8	0.0	25.9	18.8	10.2
22/08/22	183	8.3	0.0	26.6	20.4	9.6
23/08/22	174	8.8	6.8	25.1	21.8	6.6
24/08/22	238	9.2	0.6	24.4	16.4	6.6
25/08/22	226	5.1	0.0	31.0	17.2	6.8
26/08/22	207	5.4	3.2	31.6	16.4	10.2
27/08/22	171	3.4	0.2	30.2	19.2	9.0
28/08/22	122	3.9	0.0	25.8	21.2	10.4
29/08/22	89	5.0	0.0	23.0	21.2	12.2
30/08/22	181	6.9	0.0	30.7	22.4	12.4
31/08/22	200	4.5	2.2	30.4	20.0	10.8

**Meteorological Conditions - Year to Date**

Monitored Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Total Rainfall (mm)	98.2	131.2	353.4	166.2	111.6	16.8	383.6	45.2					
Average Minimum Temperature (°C) at 2m	16.8	18.2	17.7	15.1	12.1	5.6	9.1	6.6					
Average Maximum Temperature (°C) at 2m	33.0	27.8	25.2	23.6	20.3	20.2	16.6	22.8					
Average Minimum Temperature (°C) at 10m	17.1	18.5	18.1	15.7	12.8	6.2	9.7	6.9					
Average Maximum Temperature (°C) at 10m	31.9	26.7	24.4	23.0	19.8	19.9	16.3	22.3					
Average Sigma Theta	34.6	34.8	33.5	30.5	31.1	33.8	30.8	30.0					
Average Solar Radiation (W/m <sup>2</sup> )	207.9	181.7	129.8	123.0	93.6	97.7	85.4	116.6					
Average Relative Humidity (%)	75.0	73.0	80.0	76.2	75.0	62.9	73.0	66.0					

**Blasting**

Monitoring Frequency: Each Blast  
 Blast Monitoring Completed By: Orica (Blast 1 to 12)  
 MAXAM (Blast 13)

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	19	January	13:39:30	Stage 1C	104.7	0.6	100.8	0.06	NM	NM	Nil Trigger on monitor at bottom wheel wash
2A & 2B	1	February	15:55:00	Stage 2A	103.9	0.7	101.4	0.06	NM	NM	
3	14	February	14:31:01	Stage 1C	NT	NT	109.8	0.18	NM	NM	
4	28	February	15:54:47	Stage 2A	NT	NT	NT	NT	NM	NM	Nil trigger on any blast monitors
5	3	March	14:27:00	Stage 1C	106	0.08	NT	NT	NM	NM	
6	23	March	15:05:00	Stage 2A	102.2	1.01	NT	NT	NM	NM	
7	12	April	14:35:53	Stage 2B1	107.6	0.16	NT	NT	NM	NM	
8	27	April	15:48:12	Stage 2A	104.2	0.94	NT	NT	NM	NM	
9	9	May	14:39:03	Stage 1C	NT	NT	99.2	0.3	NM	NM	
10	6	June	14:52:32	Stage 1C	NT	NT	91.6	NT	NM	NM	
11	22	June	13:42:18	Stage 1C	NT	NT	103.2	0.281	NM	NM	
12	15	July	14:00:00	Stage 1C	NT	NT	NT	NT	NM	NM	Nil trigger on any blast monitors
13	29	July	12:04:28	Stage 1C	102.7	0.076	NT	NT	NM	NM	
14	18	August	1:20:00	Stage 2B-2	NT	NT	NT	NT	NM	NM	Nil trigger on any blast monitors
15	31	August	12:31:00	Stage 1C	NT	NT	NT	NT	NM	NM	Nil trigger on any blast monitors

**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
<b>August 2022</b>	<b>Quantity</b>	<b>Quantity</b>	<b>Quantity</b>	<b>Quantity</b>	<b>Quantity</b>	<b>Quantity</b>	<b>Quantity</b>	<b>Quantity</b>	<b>Quantity</b>	<b>Quantity</b>	<b>Quantity</b>	<b>Quantity</b>
General Waste Bin (10m <sup>3</sup> )												
General Waste Bin (4.5m <sup>3</sup> )												
General Waste Bin (6m <sup>3</sup> )		1		1								
General Waste Bin (20m <sup>3</sup> )	1	1	1	1	1		1	1				
Paper & Cardboard Bin (3m <sup>3</sup> )	1	1	2	1	1	2	1	1				
Shredded Paper Bin (240L)	2		1									
Co Mingled Recycling (2 x 240 L)	4	4	4	4	4	4	4	4				
Tonner Cartridges												
Waste Oil (L)	2100					3000						
Scrap Steel (t)												
Timber (m <sup>3</sup> )												
Engine Coolant (L)												
Oil Filters (240L bin)		3										
Batteries												
Oily Rags (240L bin)												
Aerosols (120L bin)												
Tyres												
Other												
Oily Water (L)							7.3					
Grease Waste (L)												