



Environmental Monitoring Data

January 2024

EPL No: 11912
Licensee: Evolution Mining (Cowal) Pty Limited
Address: PO Box 210 West Wyalong NSW 2671
<http://www.epa.nsw.gov.au/licensing-and-regulation/public-registers>



Monitoring Point: 1 <McLintocks Shed>

Frequency	Date Collected	Date Obtained	Date Published	Particulates ($\mu\text{g}/\text{m}^3/\text{month}$)	Comments
Monthly	14/01/2024	06/02/2024	21/02/2024	7.89	
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Number of Samples Collected					1
Lowest Value					7.9
Mean of Sample					7.9
Highest Sample Value					7.9
Median					7.9

Monitoring Point: 2 <Site Office>

Frequency	Date Collected	Date Obtained	Date Published	Particulates ($\mu\text{g}/\text{m}^3/\text{month}$)	Comments
Monthly	14/01/2024	06/02/2024	21/02/2024	6.19	
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Number of Samples Collected					1
Lowest Value					6.2
Mean of Sample					6.2
Highest1 Sample Value					6.2
Median					6.2

Monitoring Point: 3 <DG06>

Frequency	Date Collected	Date Obtained	Date Published	Particulates ($\text{g}/\text{m}^2/\text{month}$)	Comments
Monthly	14/01/2024	06/02/2024	21/02/2024	2.27	
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Number of Samples Collected				1	
Lowest Value				2.3	
Mean of Sample				2.3	
Highest Sample Value				2.3	
Median				2.3	

Monitoring Point: 4 <DG09>

Frequency	Date Collected	Date Obtained	Date Published	Particulates ($\text{g}/\text{m}^2/\text{month}$)	Comments
Monthly	14/01/2024	06/02/2024	21/02/2024	1.64	
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Number of Samples Collected				1	
Lowest Value				1.6	
Mean of Sample				1.6	
Highest Sample Value				1.6	
Median				1.6	

Monitoring Point: 5 <Site 52>

[illegible]



Monitoring Point: 6 <DG01>
Dust monitoring, Dust gauge located on private property to the north of ML1535 boundary

Monitoring Point: 49 <HV1>
Dust monitoring, High volume sampler located on private property to the north of ML1535 boundary

[illegible]



Monitoring Point: 12 <D1>

Stormwater quality monitoring, Northern waste emplacement contained water storage

Monitoring Point: 13 <D4>

Stormwater quality monitoring, Southern waste emplacement contained water storage

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Comments
Monthly	09/01/2024	09/01/2024	21/02/2024	7.85	10036	54	
Monthly	18/01/2024	18/01/2024	21/02/2024	8.19	3195	14	Rainfall Monitoring Event
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				2.00	2.00	2.00	
Lowest Value				7.85	3195.00	14.00	
Mean of Sample				8.02	6615.50	34.00	
Highest Sample Value				8.19	10036.00	54.00	
Median				8.02	6615.50	34.00	



Ambient water quality monitoring, Surface water point within ML1535 on Lake Cowal

Monitoring Point: 15 <P2>
Ambient water quality monitoring. Surface water point within ML1535 on Lake Cowal

Monitoring Point: 16 (P2)
Ambient water quality monitoring, Surface water point within ML1535 on Lake Cowal

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Lead (mg/L)	Methylmercury (ng/L)	Nickel (mg/L)	Selenium (mg/L)	Total Suspended Solids (mg/L)	Zinc (mg/L)	Comments
Quarterly	2/10/2024	07/09/2024	2/10/2024	186	<0.001	0.002	<0.0005	0.001	<0.001	0.000	0.000	<0.01	87	<100	
Quarterly															
Quarterly															
Continuous Water Quality				155.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	87.0	0.0	
Water Temperature				15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	87.0	0.0	
Dissolved Oxygen Level				10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	87.0	0.0	



Monitoring Point: 17 (B1)
 Fishland water quality monitoring

Monitoring Point: 17 <B1>
Ambient water quality monitoring, Surface water point within ML1535 on Lake Cowal

Frequency	Date Sampled	Date Observed	Date Published	Field - pH (unit)	Field - Electrical Conductivity (µS/cm)	Comments
Observation	10/20/2018	09/20/2018	11/02/2018	8.35	200.0	
Accuracy						
Reliability						
Repeatability						
Reproducibility						
Comparability						
Consistency						
Validity						
Utility						
Feasibility						
Acceptability						
Comprehensibility						
Reliability						
Overall composite Observed				7	1	
Observed Value				8.9	200.0	
Observed Interval				8.3	200.0	
Observed Value				8.9	200.0	
Observed Interval				8.3	200.0	

Frequency	Date Sampled	Date Observed	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Calcium (mg/L)	Copper (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Total Suspended Solids (mg/L)	Zinc (mg/L)	Comments
Quarterly	22/03/2024	07/03/2024	23/03/2024	146	<0.001	0.002	<0.0001	<0.001	<0.001	0.009	0.009	<0.01	53	<0.05	
Quarterly															
Quarterly															
Quarterly															
Annual															
Annual total				150.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.0	0.0	
Range of Sample				150.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0	0.0	
Observed Sample Value				146.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.0	0.0	

Monitoring Point: 18 <B6>
Ambient water quality monitoring, Surface water point on Lake Cowal to the south-east of ML1535 boundary

[illegible]

Frequency	Date Sampled	Date Observed	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Total Suspended Solids (mg/L)	Zinc (mg/L)	Comments
Quarterly	7/15/2024	07/15/2024	21/02/2024	14	<0.001	0.003	<0.0005	0.003	<0.001	<0.001	0.000	<0.001	37	<0.005	
Quarterly															
Quarterly															
Maximum of Parameter				15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.0	0.0	
Minimum of Parameter				10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	0.0	
Maximum range value				5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	



Waste Rock Leachate

Monitoring Point: 41 <Northern Waste Emplacement>
Northern Waste Emplacement leachate quality monitoring

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	Comments
Monthly	23/01/2024	-	-	-	-	No water present in toe drain
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Number of Samples Collected						0
Lowest Value						0.0
Mean of Sample						0.0
Highest Sample Value						0.0
Median						0.0

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No water present in toe drain
Quarterly																							
Quarterly																							
Quarterly																							
Lowest Value				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean of Sample				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highest Sample Value				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Monitoring Point: 42 <Southern Waste Emplacement>
Southern Waste Emplacement leachate quality monitoring

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	Comments
Monthly	23/01/2024	23/01/2024	21/02/2024	7.85	22140	
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Number of Samples Collected						1
Lowest Value						7.9
Mean of Sample						7.9
Highest Sample Value						7.9
Median						7.9

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	08/02/2024	21/02/2024	216	<0.0005	<0.0005	0.0068	558	5620	0.001	0.01	<0.0002	705	0.079	0.0038	0.001	37	<0.002	3180	2950	41	4300	0.052	
Quarterly																								
Quarterly																								
Quarterly																								
Lowest Value				216.0000	0.0000	0.0000	0	558	5620.000	0.0010	0.0100	0.0000	705.0000	0.0792	0.004	0.0010	37.000	0.0000	3180	2950	41.000	4300	0.052	
Mean of Sample				216.0000	0.0000	0.0000	0	558	5620.000	0.0010	0.0100	0.0000	705.0000	0.0792	0.004	0.0010	37.000	0.0000	3180	2950	41.000	4300	0.052	
Highest Sample Value				216.0000	0.0000	0.0000	0	558	5620.000	0.0010	0.0100	0.0000	705.0000	0.0792	0.004	0.0010	37.000	0.0000	3180	2950	41.000	4300	0.052	

Monitoring Point: 43 <Perimeter Waste Emplacement>
Perimeter Waste Emplacement leachate quality monitoring

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	Comments
Monthly	23/01/2024	-	-	-	-	No water present in toe drain
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Number of Samples Collected						0
Lowest Value						0.0
Mean of Sample						0.0
Highest Sample Value						0.0
Median						0

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No water present in toe drain
Quarterly																								
Quarterly																								
Quarterly																								
Lowest Value				0.0000	0.0000	0.0000	0	0	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	0.0000	0.000	0.0000	0.0000	0	0	0.000	0	0.000
Mean of Sample				0.0000	0.0000	0.0000	0	0	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	0.0000	0.000	0.0000	0.0000	0	0	0.000	0	0.000
Highest Sample Value				0.0000	0.0000	0.0000	0	0	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	0.0000	0.0000	0.0000	0.0000	0	0	0.000	0	0.000



Monitoring Point: 19 <P555A-R>
Groundwater quality monitoring. Piezometer located up gradient of southern tailings storage facility.

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	05/02/2024	21/02/2024	748	<0.0005	<0.0005	<0.0002	274	8930	<0.001	<0.004	<0.005	<0.0002	787	0.0462	0.0015	0.0037	23	0.003	5920	2440	24500	3920	<0.005	
Quarterly																									
Quarterly																									
Quarterly																									
Overall Value				748.0	0.0000	0.0000	0.0000	274	8930	0.0000	0.0000	0.0000	0.0000	787	0.0462	0.0015	0.0037	23	0.0030	5920	2440	24500	3920	0.0000	
Mean of Sample				748.0	0.0000	0.0000	0.0000	274	8930	0.0000	0.0000	0.0000	0.0000	787.0000	0.0462	0.0015	0.0037	23	0.0030	5920	2440	24500	3920	0.0000	
Highest Sample Value				748.0	0.0000	0.0000	0.0000	274	8930	0.0000	0.0000	0.0000	0.0000	787	0.0462	0.0015	0.0037	23	0.0030	5920	2440	24500	3920	0.0000	

Monitoring Point: 26 <PP03>
Groundwater quality monitoring, Piezometer located near the processing plant area

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	22/01/2024	05/02/2024	21/02/2024	407	<0.005	<0.005	<0.002	828	14300	0.003	<0.004	0.006	0.0008	1720	0.003	<0.0001	0.0008	58	0.01	9260	3380	41400	9150	0.02	
Quarterly																									
Quarterly																									
Corrected Value				407 g	0.0000	0.0000	0.0000	828	14300	0.0030	0.0000	0.0060	0.0008	1720	0.0030	0.0000	0.0008	58	0.0100	9260	3380	41400	9150	0.0200	
Mean of Sample				407.0	0.0000	0.0000	0.0000	828	14300	0.0030	0.0000	0.0060	0.0008	1720	0.0030	0.0000	0.0008	58	0.0100	9260	3380	41400	9150	0.0200	
Highest Sample Value				407.0	0.0000	0.0000	0.0000	828	14300	0.0030	0.0000	0.0060	0.0008	1720	0.0030	0.0000	0.0008	58	0.0100	9260	3380	41400	9150	0.0200	

Monitoring Point: 27 <PP04>
Groundwater quality monitoring, Piezometer located near the processing plant area

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	22/01/2024	05/02/2024	21/02/2024	477	<0.0005	<0.0005	<0.0002	789	13800	0.003	<0.004	<0.005	<0.0002	1610	0.0031	0.0001	0.0024	52	0.009	9230	3480	40500	8600	0.018	
Quarterly																									
Quarterly																									
Quarterly																									
Current Value				477.0	0.0000	0.0000	0.0000	789	13800	0.0030	0.0000	0.0000	0.0000	1610	0.0031	0.0001	0.0024	52	0.0090	9230	3480	40500	8600	0.0180	
Mean of Sample				477.0	0.0000	0.0000	0.0000	789	13800	0.0030	0.0000	0.0000	0.0000	1610	0.0031	0.0001	0.0024	52	0.0090	9230	3480	40500	8600	0.0180	
Highest Sample Value				477.0	0.0000	0.0000	0.0000	789	13800	0.0030	0.0000	0.0000	0.0000	1610	0.0031	0.0001	0.0024	52	0.0090	9230	3480	40500	8600	0.0180	

Monitoring Point: 30 <P417A>
Groundwater quality monitoring, Piezometer located down gradient of southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	22/01/2024	05/02/2024	21/03/2024	450	<0.0005	<0.0005	0.001	654	13100	0.025	<0.004	1.82	<0.0002	1550	0.125	0.0065	0.476	38	0.01	8750	3150	38900	8020	<0.005	
Quarterly																									
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Monitoring Point: 31 <P417B>

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	22/01/2024	05/02/2024	21/02/2024	233	<0.0005	<0.0005	<0.0002	524	12500	0.003	<0.004	0.006	0.0006	1430	0.0019	0.0004	0.002	20	0.009	8010	2800	35500	7200	0.02	
Quarterly																									
Quarterly																									
Quarterly																									
Current Value				233.0	0.0000	0.0000	0.0000	524	12500	0.0030	0.0000	0.0060	0.0006	1430	0.0019	0.0004	0.0020	20	0.0090	8010	2800	35500	7200	0.0200	
Mean of Sample				233.0	0.0000	0.0000	0.0000	524	12500	0.0030	0.0000	0.0060	0.0006	1430	0.0019	0.0004	0.0020	20	0.0090	8010	2800	35500	7200	0.0200	
Highest Sample Value				233.0	0.0000	0.0000	0.0000	524	12500	0.0030	0.0000	0.0060	0.0006	1430	0.0019	0.0004	0.0020	20	0.0090	8010	2800	35500	7200	0.0200	

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	23/01/2024	23/01/2024	21/02/2024	6.57	49358	6.250	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected			1		1	1	
Current Value			6.6		49358	6.250	
Mean of Sample			6.6		49358	6.250	
Highest Sample Value			6.6		49358	6.250	

Monitoring Point: 33 <P418B>
Groundwater quality monitoring, Piezometer located down gradient of northern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	05/02/2024	21/02/2024	616	<0.0005	<0.0005	<0.0002	382	13000	0.16	<0.004	0.053	0.001	1290	0.024	0.0062	0.1700	14	0.006	9710	4540	36000	6270	0.078	
Quarterly																									
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Monitoring Point: 36 <PDB1A>
Groundwater quality monitoring, Pit dewatering bore

Frequency	Date Sampled	Date Obtained	Date Published	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)		Comments
Quarterly	22/01/2024	05/02/2024	21/02/2024	0.0036	<0.0005	0.0041	978	15500	0.002	<0.005	<0.0002	1780	3.02	0.0007	0.0036	37	0.002	10000	4200	45800	9770	0.006		
Quarterly																								
Quarterly																								
Quarterly Current Value				0.0036	0.0000	0.0041	978	15500	0.002	0.0000	0.0000	1780	3.0200	0.0007	0.004	37	0.002	10000	4200	45800	9770	0.006		
Mean of Sample				0.0036	0.0000	0.0041	978	15500	0.002	0.0000	0.0000	1780	3.0200	0.0007	0.004	37	0.002	10000	4200	45800	9770	0.006		
Highest Sample Value				0.0036	0.0000	0.0041	978	15500	0.002	0.0000	0.0000	1780	3.0200	0.0007	0.004	37	0.002	10000	4200	45800	9770	0.006		

Frequency	Date Sampled	Date Obtained	Date Published	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	22/01/2024	05/02/2024	21/02/2024	0.0067	0.0013	0.0054	1010	13800	0.01	0.007	0.001	1720	0.09	0.0068	0.0154	44	0.006	8500	3610	43000	9600	0.395	
Quarterly																							
Quarterly																							
Current Value				0.0067	0.0013	0.0054	1010	13800	0.010	0.0070	0.0010	1720	0.0864	0.0068	0.015	44	0.006	8500	3610	43000	9600	0.395	
Mean of Sample				0.0067	0.0013	0.0054	1010	13800	0.010	0.0070	0.0010	1720	0.0864	0.0068	0.015	44	0.006	8500	3610	43000	9600	0.395	
Highest Sample Value				0.0067	0.0013	0.0054	1010	13800	0.010	0.0070	0.0010	1720	0.0864	0.0068	0.015	44	0.006	8500	3610	43000	9600	0.395	

Frequency	Date Sampled	Date Obtained	Date Published	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	22/01/2024	05/02/2024	21/02/2024	<0.0005	0.0046	0.0036	763	15500	0.002	0.179	<0.0002	1940	0.0415	0.0024	0.109	39	0.003	9610	3250	46100	9890	0.035	
Quarterly																							
Quarterly																							
Quarterly																							
Lowest Value				0.0000	0.0046	0.0036	763	15500	0.002	0.1790	0.0000	1940	0.0415	0.0024	0.109	39	0.003	9610	3250	46100	9890	0.035	
Mean of Sample				0.0000	0.0046	0.0036	763	15500	0.002	0.1790	0.0000	1940	0.0415	0.0024	0.109	39	0.003	9610	3250	46100	9890	0.035	
Highest Sample Value				0.0000	0.0046	0.0036	763	15500	0.002	0.1790	0.0000	1940	0.0415	0.0024	0.109	39	0.003	9610	3250	46100	9890	0.035	

Frequency	Date Sampled	Date Obtained	Date Published	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	22/01/2024	05/02/2024	21/02/2024	<0.0005	0.001	<0.0002	77	2320	0.012	0.112	<0.0002	152	0.037	0.0013	0.0187	8	<0.002	1420	434	5130	818	<0.005	
Quarterly																							
Quarterly																							
Quarterly				0.0000	0.0010	0.0000	77	2320	0.012	0.1120	0.0000	152	0.0368	0.0013	0.019	8	0.0000	1420	434	5130	818	0.0000	
Current Value				0.0000	0.0010	0.0000	77	2320	0.012	0.1120	0.0000	152	0.0368	0.0013	0.019	8	0.0000	1420	434	5130	818	0.0000	
Mean of Sample				0.0000	0.0010	0.0000	77	2320	0.012	0.1120	0.0000	152	0.0368	0.0013	0.019	8	0.0000	1420	434	5130	818	0.0000	
Highest Sample Value				0.0000	0.0010	0.0000	77	2320	0.012	0.1120	0.0000	152	0.0368	0.0013	0.019	8	0.0000	1420	434	5130	818	0.0000	



Monitoring Point: 53 <PDB3B>
Groundwater quality monitoring, Pit dewatering bore

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	22/01/2024	22/01/2024	21/02/2024	6.09	52108	17.760	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				1	1	1	
Lowest Value				6.1	52108	17.760	
Mean of Sample				6.1	52108	17.760	
Highest Sample Value				6.1	52108	17.760	

Frequency	Date Sampled	Date Obtained	Date Published	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	22/01/2024	05/02/2024	21/02/2024	<0.005	<0.005	0.0008	1100	15000	0.002	0.01	<0.0002	2130	0.0226	0.0021	0.0087	45	0.016	9100	5080	47000	11500	<0.005	
Quarterly																							
Quarterly																							
Quarterly																							
Lowest Value				0.0000	0.0000	0.0008	1100	15000	0.002	0.0100	0.0000	2130	0.0226	0.0021	0.009	45	0.016	9100	5080	47000	11500	0.000	
Mean of Sample				0.0000	0.0000	0.0008	1100	15000	0.002	0.0100	0.0000	2130	0.0226	0.0021	0.009	45	0.016	9100	5080	47000	11500	0.000	
Highest Sample Value				0.0000	0.0000	0.0008	1100	15000	0.002	0.0100	0.0000	2130	0.0226	0.0021	0.009	45	0.016	9100	5080	47000	11500	0.000	

Monitoring Point: 54 <PDB5B>
Groundwater quality monitoring, Pit dewatering bore

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity ($\mu\text{S}/\text{cm}$)	SWL (m)	Comments
Monthly	22/01/2024	22/01/2024	21/02/2024	5.94	49965	13.985	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				1	1	1	
Lowest Value				5.9	49965	13.985	
Mean of Sample				5.9	49965	13.985	
Highest Sample Value				5.9	49965	13.985	

Frequency	Date Sampled	Date Obtained	Date Published	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	22/02/2024	05/02/2024	21/02/2024	<0.005	0.001	0.0015	793	14100	0.007	0.131	<0.002	1770	0.0199	0.078	0.0649	41	<0.002	8840	3320	42900	9270	0.006	
Quarterly																							
Quarterly																							
Quarterly																							
Quarterly Value				0.0000	0.0010	0.0015	793	14100	0.007	0.1310	0.0000	1770	0.0199	0.0780	0.065	41	0.000	8840	3320	42900	9270	0.006	
Mean of Sample				0.0000	0.0010	0.0015	793	14100	0.007	0.1310	0.0000	1770	0.0199	0.0780	0.065	41	0.000	8840	3320	42900	9270	0.006	
Highest Sample Value				0.0000	0.0010	0.0015	793	14100	0.007	0.1310	0.0000	1770	0.0199	0.0780	0.065	41	0.000	8840	3320	42900	9270	0.006	

Monitoring Point: 57 <IWL06A>
Groundwater quality monitoring. Groundwater monitoring bore located to the south of the southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWS (m)	Comments
Monthly	23/01/2024	23/01/2024	21/02/2024	6.7	46092	3.510	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Quarterly							
Number of Samples Collected				1	1	1	
Lowest Value				6.7	46092	3.510	
Mean of Sample				6.7	46092	3.510	
Highest Sample Value				6.7	46092	3.510	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	05/02/2024	21/02/2024	371	<0.005	<0.005	<0.0002	786	12400	<0.001	<0.004	0.023	<0.0002	1400	0.0607	0.0017	0.017	42	0.006	8080	3100	37000	7730	0.011	
Quarterly																									
Quarterly																									
Quarterly																									
Lowest Value				371.0	0.0000	0.0000	0.0000	786	12400	0.0000	0.0000	0.0230	0.0000	1400	0.0607	0.0017	0.0170	42	0.0060	8080	3100	37000	7730	0.0110	
Mean of Sample				371.0	0.0000	0.0000	0.0000	786	12400	0.0000	0.0000	0.0230	0.0000	1400	0.0607	0.0017	0.0170	42	0.0060	8080	3100	37000	7730	0.0110	
Highest Sample Value				371.0	0.0000	0.0000	0.0000	786	12400	0.0000	0.0000	0.0230	0.0000	1400	0.0607	0.0017	0.0170	42	0.0060	8080	3100	37000	7730	0.0110	

Monitoring Point: 58 <IWL06B>
Groundwater quality monitoring. Groundwater monitoring bore located to the south of the southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity ($\mu\text{S}/\text{cm}$)	SWS (m)	Comments
Monthly	22/01/2024	22/01/2024	21/02/2024	6.62	48075	3.240	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Quarterly							
Number of Samples Collected				1	1	1	
Lowest Value				6.6	48075	3.240	
Mean of Sample				6.6	48075	3.240	
Highest Sample Value				6.6	48075	3.240	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	05/02/2024	21/02/2024	548	<0.0005	<0.0005	0.0003	645	12600	0.004	<0.004	0.052	<0.0002	1480	0.0832	0.0032	0.453	39	0.006	7970	3120	36200	7700	<0.005	
Quarterly																									
Quarterly																									
Quarterly																									
Lowest Value				548.0	0.0000	0.0000	0.0003	645	12600	0.0040	0.0000	0.0520	0.0000	1480	0.0832	0.0032	0.4530	39	0.0060	7970	3120	36200	7700	0.0000	
Mean of Sample				548.0	0.0000	0.0000	0.0003	645	12600	0.0040	0.0000	0.0520	0.0000	1480	0.0832	0.0032	0.4530	39	0.0060	7970	3120	36200	7700	0.0000	
Highest Sample Value				548.0	0.0000	0.0000	0.0003	645	12600	0.0040	0.0000	0.0520	0.0000	1480	0.0832	0.0032	0.4530	39	0.0060	7970	3120	36200	7700	0.0000	



Monitoring Point: 59 <IWL05A>
Groundwater quality monitoring. Groundwater monitoring bore located to the south of the southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	05/02/2024	21/02/2024	672	<0.0005	<0.0005	<0.0002	302	11400	0.004	<0.004	0.019	<0.0002	1310	0.0726	0.0504	0.428	49	0.011	8180	3130	33400	6150	<0.005	
Quarterly																									
Quarterly																									
Quarterly																									
Lowest Value				672.0	0.0000	0.0000	0.0000	302	11400	0.0040	0.0000	0.0190	0.0000	1310	0.0726	0.0504	0.4280	49	0.0110	8180	3130	33400	6150	0.0000	
Mean of Sample				672.0	0.0000	0.0000	0.0000	302	11400	0.0040	0.0000	0.0190	0.0000	1310	0.0726	0.0504	0.4280	49	0.0110	8180	3130	33400	6150	0.0000	
Highest Sample Value				672.0	0.0000	0.0000	0.0000	302	11400	0.0040	0.0000	0.0190	0.0000	1310	0.0726	0.0504	0.4280	49	0.0110	8180	3130	33400	6150	0.0000	

Monitoring Point: 60 <IWL05B>
Groundwater quality monitoring. Groundwater monitoring bore located to the south of the southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	05/02/2024	21/02/2024	430	<0.0005	<0.0005	<0.0002	135	11800	0.049	<0.004	1.02	<0.0002	1380	0.0828	0.0112	0.443	39	0.002	8230	2860	35200	6020	<0.005	
Quarterly																									
Quarterly																									
Quarterly																									
Current Value				430.0	0.0000	0.0000	0.0000	135	11800	0.0490	0.0000	1.0200	0.0000	1380	0.0828	0.0112	0.4430	39	0.0020	8230	2860	35200	6020	0.0000	
Mean of Sample				430.0	0.0000	0.0000	0.0000	135	11800	0.0490	0.0000	1.0200	0.0000	1380	0.0828	0.0112	0.4430	39	0.0030	8230	2860	35200	6020	0.0000	
Highest Sample Value				430.0	0.0000	0.0000	0.0000	135	11800	0.0490	0.0000	1.0200	0.0000	1380	0.0828	0.0112	0.4430	39	0.0020	8230	2860	35200	6020	0.0000	

Monitoring Point: 61 <IWL04A>
Groundwater quality monitoring. Groundwater monitoring bore located to the south of the southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	05/02/2024	21/02/2024	737	0.0008	<0.0005	<0.0002	340	9370	0.003	<0.004	0.016	<0.0002	930	0.0228	0.0033	0.0743	46	0.004	7050	2930	27500	4680	0.015	
Quarterly																									
Quarterly																									
Quarterly																									
Current Value				737.0	0.0008	0.0000	0.0000	340	9370	0.0030	0.0000	0.0160	0.0000	930	0.0228	0.0033	0.0743	46	0.0040	7050	2930	27500	4680	0.0150	
Mean of Sample				737.0	0.0008	0.0000	0.0000	340	9370	0.0030	0.0000	0.0160	0.0000	930	0.0228	0.0033	0.0743	46	0.0040	7050	2930	27500	4680	0.0150	
Highest Sample Value				737.0	0.0008	0.0000	0.0000	340	9370	0.0030	0.0000	0.0160	0.0000	930	0.0228	0.0033	0.0743	46	0.0040	7050	2930	27500	4680	0.0150	



Monitoring Point: 62 <IWL04B>
Groundwater quality monitoring. Groundwater monitoring bore located to the south of the southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWS (m)	Comments
Monthly	23/01/2024	23/01/2024	21/02/2024	-	-	-	Dry
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				0	0	0	
Lowest Value				0.0	0	0.000	
Mean of Sample				0.0	0	0.000	
Highest Sample Value				0.0	0	0.000	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	05/02/2024	21/02/2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Dry
Quarterly				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Dry
Quarterly				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Dry
Quarterly				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Dry
Quarterly				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Dry
Lowest Value				0.0	0.0000	0.0000	0.0000	0	0	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0	0	0	0	0.0000	
Mean of Sample				0.0	0.0000	0.0000	0.0000	0	0	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0	0	0	0	0.0000	
Highest Sample Value				0.0	0.0000	0.0000	0.0000	0	0	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0	0	0	0	0.0000	

Monitoring Point: 63 <IWL03A>
Groundwater quality monitoring. Groundwater monitoring bore located to the south of the southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity ($\mu\text{S}/\text{cm}$)	SWS (m)	Comments
Monthly	23/01/2024	23/01/2024	21/02/2024	6.84	39736	23.385	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				1	1	1	
Lowest Value				6.8	39736	23.385	
Average of Sample				6.8	39736	23.385	
Highest Sample Value				6.8	39736	23.385	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	05/02/2024	21/02/2024	694	<0.0005	<0.0005	<0.0002	371	10700	0.001	<0.004	0.018	<0.0002	803	0.0054	0.0007	0.0214	21	0.006	7770	3410	29600	4230	<0.005	
Quarterly																									
Quarterly																									
Quarterly																									
Current Value				694.0	0.0000	0.0000	0.0000	371	10700	0.0010	0.0000	0.0180	0.0000	803	0.0054	0.0007	0.0214	21	0.0060	7770	3410	29600	4230	0.0000	
Mean of Sample				694.0	0.0000	0.0000	0.0000	371	10700	0.0010	0.0000	0.0180	0.0000	803	0.0054	0.0007	0.0214	21	0.0060	7770	3410	29600	4230	0.0000	
Highest Sample Value				694.0	0.0000	0.0000	0.0000	371	10700	0.0010	0.0000	0.0180	0.0000	803	0.0054	0.0007	0.0214	21	0.0060	7770	3410	29600	4230	0.0000	

Monitoring Point: 64 <IWL03B>
Groundwater quality monitoring. Groundwater monitoring bore located to the south of the southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity ($\mu\text{S}/\text{cm}$)	SWL (m)	Comments
Monthly	23/01/2024	23/01/2024	21/02/2024	-	-	-	Dry
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				0	0	0	
Lowest Value				0.0	0	0.000	
Highest of Sample				0.0	0	0.000	
Highest Sample Value				0.0	0	0.000	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	05/02/2024	21/02/2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Quarterly				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Dry
Quarterly				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Dry
Quarterly				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Dry
Quarterly				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Dry
Lowest Value				0.0	0.0000	0.0000	0.0000	0	0	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0	0	0	0	0	0.0000
Mean of Sample				0.0	0.0000	0.0000	0.0000	0	0	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0	0	0	0	0	0.0000
Highest Sample Value				0.0	0.0000	0.0000	0.0000	0	0	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0	0	0	0	0	0.0000

Monitoring Point: 65 <IWL02A>
Groundwater quality monitoring. Groundwater monitoring bore located to the south of the southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity ($\mu\text{S}/\text{cm}$)	SWS (m)	Comments
Monthly	23/01/2024	23/01/2024	21/02/2024	6.85	46452	11.570	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected			1	1	1		
Lowest Value			6.9	46452	11.570		
Mean of Sample			6.9	46452	11.570		
Highest Sample Value			6.9	46452	11.570		

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	05/02/2024	21/02/2024	707	<0.0005	<0.0005	<0.0002	375	12400	0.002	<0.004	0.018	<0.0002	1000	0.0196	0.0023	0.0985	30	0.033	9940	4640	36500	5050	<0.005	
Quarterly																									
Quarterly																									
Quarterly																									
Lowest Value				707.0	0.0000	0.0000	0.0000	375	12400	0.0020	0.0000	0.0180	0.0000	1000	0.0196	0.0023	0.0985	30	0.0330	9940	4640	36500	5050	0.0000	
Mean of Sample				707.0	0.0000	0.0000	0.0000	375	12400	0.0020	0.0000	0.0180	0.0000	1000	0.0196	0.0023	0.0985	30	0.0330	9940	4640	36500	5050	0.0000	
Highest Sample Value				707.0	0.0000	0.0000	0.0000	375	12400	0.0020	0.0000	0.0180	0.0000	1000	0.0196	0.0023	0.0985	30	0.0330	9940	4640	36500	5050	0.0000	



Monitoring Point: 66 <IWL02B>
Groundwater quality monitoring. Groundwater monitoring bore located to the south of the southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	23/01/2024	23/01/2024	21/02/2024	-		10.65	Too shallow to sample
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				0	0	1	
Lowest Value				0.0	0	10.650	
Mean of Sample				0.0	0	10.650	
Highest Sample Value				0.0	0	10.650	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	23/01/2024	21/02/2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Quarterly				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Dry
Quarterly				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Dry
Quarterly				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Dry
Quarterly				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Dry
Lowest Value				0.0	0.0000	0.0000	0.0000	0	0	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0	0	0	0	0	0.0000
Mean of Sample				0.0	0.0000	0.0000	0.0000	0	0	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0	0	0	0	0	0.0000
Highest Sample Value				0.0	0.0000	0.0000	0.0000	0	0	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0	0	0	0	0	0.0000

Monitoring Point: 67 <IWL01A>
Groundwater quality monitoring. Groundwater monitoring bore located to the south of the southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity ($\mu\text{S}/\text{cm}$)	SWS (m)	Comments
Monthly	23/01/2024	23/01/2024	21/02/2024	6.76	46698	3.810	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				1	1	1	
Lowest Value				6.8	46698	3.810	
Average of Sample				6.8	46698	3.810	
Highest Sample Value				6.8	46698	3.810	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	05/02/2024	21/02/2024	537	<0.0005	<0.0005	0.0004	433	12700	0.002	<0.004	0.007	<0.0002	1170	0.0315	0.0013	0.0652	23	0.03	9500	4800	36000	5900	<0.005	
Quarterly																									
Quarterly																									
Quarterly																									
Lowest Value				537.0	0.0000	0.0000	0.0004	433	12700	0.0020	0.0000	0.0070	0.0000	1170	0.0315	0.0013	0.0652	23	0.0300	9500	4800	36000	5900	0.0000	
Mean of Sample				537.0	0.0000	0.0000	0.0004	433	12700	0.0020	0.0000	0.0070	0.0000	1170	0.0315	0.0013	0.0652	23	0.0300	9500	4800	36000	5900	0.0000	
Highest Sample Value				537.0	0.0000	0.0000	0.0004	433	12700	0.0020	0.0000	0.0070	0.0000	1170	0.0315	0.0013	0.0652	23	0.0300	9500	4800	36000	5900	0.0000	

Monitoring Point: 68 <IWL018>
Groundwater quality monitoring. Groundwater monitoring bore located to the south of the southern tailings storage facility

[illegible]

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	23/01/2024	05/02/2024	21/02/2024	330	<0.0005	<0.0005	<0.0002	190	10400	0.002	<0.004	0.008	<0.0002	760	0.0328	0.0002	0.0033	2	<0.002	7520	2830	28000	3600	<0.005	
Quarterly																									
Quarterly																									
Quarterly																									
Current Value				330.0	0.0000	0.0000	0.0000	190	10400	0.0030	0.0000	0.0080	0.0000	760	0.0328	0.0002	0.0033	2	0.0000	7520	2830	28000	3600	0.0000	
Mean of Sample				330.0	0.0000	0.0000	0.0000	190	10400	0.0020	0.0000	0.0080	0.0000	760	0.0328	0.0002	0.0033	2	0.0000	7520	2830	28000	3600	0.0000	
Highest Sample Value				330.0	0.0000	0.0000	0.0000	190	10400	0.0020	0.0000	0.0080	0.0000	760	0.0328	0.0002	0.0033	2	0.0000	7520	2830	28000	3600	0.0000	



Ambient Noise

Q1 Noise Monitoring

	Daytime Mine Operating Intrusive Noise Levels (dBA re 20 µPa)				Mine Contributed $LA_{eq}(5min,2s)$ + dBA		Noise Criteria $LA_{eq}(5min,2s)$ - dBA	Comments
	Location	Date Sampled	Date Obtained	Date Published	Survey 1	Survey 2		
New Lake Foreshore Laurel Park Lakeview III (New Westella) Bramboynie The Glen Caloola 2 Lakeview I & II (Lakeview) Foxman Downs 2	N01							
	N11							
	N09							
	N10							
	N12							
	N15							
	N17							
	N16							

	Evening Mine Operating Intrusive Noise Levels (dBA re 20 µPa)				Mine Contributed $LA_{eq}(5min,2s)$ + dBA		Noise Criteria $LA_{eq}(5min,2s)$ - dBA	Comments
	Location	Date Sampled	Date Obtained	Date Published	Survey 1	Survey 2		
New Lake Foreshore Laurel Park Lakeview III (New Westella) Bramboynie The Glen Caloola 2 Lakeview I & II (Lakeview) Foxman Downs 2	N01							
	N11							
	N09							
	N10							
	N12							
	N15							
	N17							
	N16							

<20 - Mine noise emission inaudible or barely audible

	Night time Mine Operating Intrusive Noise Levels (dBA re 20 µPa)				Mine Contributed $LA_{eq}(5min,2s)$ + dBA		Noise Criteria $LA_{eq}(5min,2s)$ - dBA	Night dB(A) LAFmax	Comments
	Location	Date Sampled	Date Obtained	Date Published	Survey 1	Survey 2			
New Lake Foreshore Laurel Park Lakeview III (New Westella) Bramboynie The Glen Caloola 2 Lakeview I & II (Lakeview) Foxman Downs 2	N01								
	N11								
	N09								
	N10								
	N12								
	N15								
	N17								
	N16								

<20 - Mine noise emission inaudible or barely audible

Q2 Noise Monitoring

	Daytime Mine Operating Intrusive Noise Levels (dBA re 20 µPa)				Mine Contributed $LA_{eq}(5min,2s)$ + dBA		Noise Criteria $LA_{eq}(5min,2s)$ - dBA	Comments
	Location	Date Sampled	Date Obtained	Date Published	Survey 1	Survey 2		
New Lake Foreshore Laurel Park Lakeview (New Westella) Bramboynie The Glen Caloola 2 Lakeview I & II (Lakeview) Foxman Downs 2	N01							
	N11							
	N09							
	N10							
	N12							
	N15							
	N17							
	N16							

<20 - Mine noise emission inaudible or barely audible

	Evening Mine Operating Intrusive Noise Levels (dBA re 20 µPa)				Mine Contributed $LA_{eq}(5min,2s)$ + dBA		Noise Criteria $LA_{eq}(5min,2s)$ - dBA	Comments
	Location	Date Sampled	Date Obtained	Date Published	Survey 1	Survey 2		
New Lake Foreshore Laurel Park Lakeview (New Westella) Bramboynie The Glen Caloola 2 Lakeview I & II (Lakeview) Foxman Downs 2	N01							
	N11							
	N09							
	N10							
	N12							
	N15							
	N17							
	N16							

<20 - Mine noise emission inaudible or barely audible

	Night time Mine Operating Intrusive Noise Levels (dBA re 20 µPa)				Mine Contributed $LA_{eq}(5min,2s)$ + dBA		Noise Criteria $LA_{eq}(5min,2s)$ - dBA	Night dB(A) LAFmax	Comments
	Location	Date Sampled	Date Obtained	Date Published	Survey 1	Survey 2			
New Lake Foreshore Laurel Park Lakeview (New Westella) Bramboynie The Glen Caloola 2 Lakeview I & II (Lakeview) Foxman Downs 2	N01								
	N11								
	N09								
	N10								
	N12								
	N15								
	N17								
	N16								

<20 - Mine noise emission inaudible or barely audible



Q3 Noise Monitoring

New Lake Foreshore
Laurel Park
Lakeview (New Westella)
Bramboyne
The Glen
Caloola 2
Lakeview I & II (Lakeview)
Foxman Downs 2

New Lake Foreshore
Laurel Park
Lakeview (New Westella)
Bramboyne
The Glen
Caloola 2
Lakeview I & II (Lakeview)
Foxman Downs 2

New Lake Foreshore
Laurel Park
Lakeview (New Westella)
Bramboyne
The Glen
Caloola 2
Lakeview I & II (Lakeview)
Foxman Downs 2

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1. **Introduction**

New Lake Foreshore
Laurel Park
Lakeview (New Westella)
Bramboyne
The Glen
Caloola 2
Lakeview I & II (Lakeview)
Foxman Downs 2

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New Lake Foreshore
Laurel Park
Lakeview (New Westella)
Bramboyne
The Glen
Caloola 2
Lakeview I & II (Lakeview)
Foxman Downs 2

New Lake Foreshore
Laurel Park
Lakeview (New Westella)
Bramboyne
The Glen
Caloola 2
Lakeview I & II (Lakeview)
Foxman Downs 2

420 • WHITE NOISE EMISSION IN SOUNDS OF BARKLY GARDNIE

Blasting

Table 1: Compliance percentages for the previous 12 months

Type of Exceedance	Total Number of Blasts (12 months)	No. of Exceedences (12 Months)			
		Daily Operation	Evening Operation	Night, Sunday and Public Holiday	Total % Exceedance
Open Pit					
Vibration	153	0	0	0	0.0%
Overpressure	153	0	0	3	2.0%
Underground					
Vibration	711	0	0	0	0.0%
Overpressure	711	0	0	1	0.1%
Combined					
Vibration	864	0	0	0	0.0%
Overpressure	864	0	0	4	0.5%

Table 2: Exceedances in the past 12 months

Exceedences in the past 12 months			
Type	Location	Date	Source
Overpressure	BM08.1 Cowal North	19th February 2023	Open Pit
Overpressure	BM01 Gumbelah Residence, BM08.1 Cowal North	16th July 2023	Open Pit
Overpressure	BM03 Coniston Residence	31st October 2023	Underground
Overpressure	BM01 Gumbelah Residence, BM02 Hillgrove Residence	12th November 2023	Open Pit

Date obtained: 09/02/2024



Cyanide

Monitoring Point: 48

Water quality monitoring, automated sampler located at the processing plant

Frequency	Month	No Sampled during Month	Total Cyanide (mg/L)				Comments
			Minimum	Mean	Median	Maximum	
Weekly	January	5	4.38	7.60	6.78	13.69	
Weekly	February	4					
Weekly	March	4					
Weekly	April	5					
Weekly	May	3					
Weekly	June	4					
Weekly	July	5					
Weekly	August	3					
Weekly	September	4					
Weekly	October	5					
Weekly	November	4					
Weekly	December	4					

Frequency	Month	No Sampled during Month	WAD Cyanide (mg/L)		Concentration Limits		Comments
			Minimum	Maximum	90th Percentile	100th Percentile	
Twice daily	January	62	0	12.17	20.00	30.00	
Twice daily	February						
Twice daily	March						
Twice daily	April						
Twice daily	May						
Twice daily	June						
Twice daily	July						
Twice daily	August						
Twice daily	September						
Twice daily	October						
Twice daily	November						
Twice daily	December						

[illegible]



EPL Exceedances

Monitoring Point	Monitoring Point Type	Date Sampled	Date Obtained	Date Reported	Parameter	Value	EPL Limit	Comments