



Pollution Monitoring Data - Holcim Dunloe Sand Quarry (EPL Number 13077)

Facility Address: Pottsville-Mooball Road, MOOBALL, NSW, 2483
Link to EPL on Public Register: https://epa.nsw.gov.au/proceedings/Details?unitid=13077&id=13077&option=licence&search=licence&range=POE%20licences&proceedings=issued
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Air Quality Monitoring - Deposition Results

Table with columns: Location, Frequency, Source, Lower Limit, Upper Limit, Unit, Description, Month, Annual average, and monthly data from January to December. Includes rows for Haul Road, Windmill, Sugar Shed, and Black Rock.

2024 Comments regarding deposition monitoring outcomes. Includes comments about March, July, and September results for Black Rock DDO.

Noise Monitoring Results

Table with columns: Location, Frequency, Source, Lower Criteria, Upper Criteria, Unit, Description, Quarter, and monthly noise data for 2024 Q1, Q2, Q3, and Q4. Includes rows for NE Boundary, Dwellings, and various Warwick Park Road locations.

2023 Comments regarding noise monitoring outcomes. Includes comments about monitoring at various locations.

Surface Water Results

Discharge Surface Water Monitoring Results

Table with columns: Location, Frequency, Source, Lower Criteria, Upper Criteria, Unit, Description, Month, and monthly discharge data for 2024. Includes rows for Point 1 Silt Pond and Point 2 Dredge Pond.

2024 Comments regarding discharge surface water monitoring requirements. Includes comments about monitoring at Point 1 and Point 2.

EMP - Blue Green Algae Monitoring Requirements

Table with columns: Location, Frequency, Source, Lower Criteria, Upper Criteria, Unit, Description, Month, and monthly blue green algae monitoring data for 2024. Includes rows for Dredge Pond and Silt Pond.

2024 Comments regarding blue green algae monitoring requirements. Includes comments about monitoring at Dredge Pond and Silt Pond.

EMP - Monthly Surface Water Monitoring Requirements

Table with columns: Location, Frequency, Source, Lower Criteria, Upper Criteria, Unit, Description, Month, and monthly surface water monitoring data for 2024. Includes rows for Pond 1 - Silt Pond and Pond 2 - Dredge Pond.

2024 Comments regarding monthly surface water monitoring outcomes. Includes comments about monitoring at Pond 1 and Pond 2.

EMP - Quarterly Surface Water Monitoring Requirements

Table with columns: Location, Frequency, Source, Lower Criteria, Upper Criteria, Unit, Description, Month, and quarterly surface water monitoring data for 2024. Includes rows for SW3 Northern Creek and SW4 Northern Creek.

SW9 Southern Creek	Quarterly	EMP Section 6.2	0	0.08	mg/L	Total Phosphorus	Result	0.01	0.08	0.07
			-	-	Ebb or flood	Flow direction	Result	Not Flowing	Not Flowing	Not Flowing
			5	7.5	pH units	pH	Result	7.1	7.9	5.5
			1800	2400	µS/cm	Electrical Conductivity	Result	1880	12500	2050
			0	25	mg/L	Suspended Solids	Result	13	7.4	7.1
			0	-	mg/L	Dissolved Oxygen	Result	7.2	6.6	6.1
			0	1	mg/L	Total Nitrogen	Result	0.8	0.2	0.9
			0	0.08	mg/L	Total Phosphorus	Result	0.01	0.03	0.09
			-	-	Ebb or flood	Flow direction	Result	Not Flowing	Not Flowing	Not Flowing
			0	7.5	pH units	pH	Result	5.9	6.4	6.4

Location	Frequency	Source	Lower Criteria	Upper Criteria	Unit	Description	Quarter Sample Date	2024 Q1 13/02/2024	2024 Q2 12/02/2024	2024 Q3 11/02/2024	2024 Q4
Pond 1 - Silt Pond	Quarterly	EMP Section 6.2	0	40	mg/L	Manganese	Result	0.009	0.14	0.005	
			0	100	mg/L	Magnesium	Result	4.8	3.9	4.9	
			0	500	mg/L	Sodium	Result	13	13		
			0	40	mg/L	Potassium	Result	2.6	2.2		
			0	400	mg/L	Bicarbonate	Result	38	20		
			0	1000	mg/L	Chloride	Result	14	16		
			0	800	mg/L	Sulfate / Sulphate	Result	85	91		
			0	0.5	mg/L	Aluminum (Soluble)	Result	1.1	0.01		
			0	0.005	µg/L	Arsenic	Result	0.001	0.002		
			0	20	mg/L	Ammonium	Result	0.02	0.01		
			0	20	µg/L	Iron (Soluble)	Result	0.49	0.58	0.05	
			2	10	µg/L	Chlorophyll a	Result	29	5		
			0	1000	Median no./100mL	Fecal coliforms	Result	740	10	3680	
			0	230	Median no./100mL	Enterococci	Result	1480	80	1760	

2024 Comments regarding quarterly surface water monitoring outcomes

Comment 1:

Comment 2:

Comment 3:

EMP - Quarterly Vertical Profile Monitoring

Location	Frequency	Source	Lower Criteria	Upper Criteria	Unit	Description	Quarter Sample Date	2024 Q1 25/03/2024	2024 Q1 25/03/2024	2024 Q1 25/03/2024	2024 Q1 25/03/2024	2024 Q1 25/03/2024	2024 Q1 25/03/2024	2024 Q1 25/03/2024	2024 Q1 25/03/2024	2024 Q1 25/03/2024		
Pond 2 Dredge Pond	Quarterly	2020 EMP Soil and Water Management Plan	0	1	Depth (m)	Depth (m)	Result	0.1	2.6	3.2	4.82	5	6.3	7.1	8.3	9.1	10.2	
			5	8.5	pH units	pH	Result	9.1	7.7	7.6	7.4	7.4	7.4	7.5	7.5	7.5	7.5	
			0	5500	µS/cm	Electrical Conductivity	Result	289	258	258	257	253	258	259	255	268	267	261
			4	-	mg/L	Dissolved Oxygen	Result	7.7	8.6	8.4	8.9	8.6	8.7	8.5	8.7	8.4	8.8	
			0	20	NTU	Turbidity	Result	30.5	1.8	1.7	1.6	1.7	1.5	1.8	1.8	1.6	1.6	
			0	10	mg/L	Oil & Grease	Result	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			Laboratory report issue date							03/04/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Location	Frequency	Source	Lower Criteria	Upper Criteria	Unit	Description	Quarter Sample Date	2024 Q2 12/02/2024	2024 Q2 10/02/2024	2024 Q2 10/02/2024	2024 Q2 10/02/2024	2024 Q2 10/02/2024	2024 Q2 10/02/2024	2024 Q2 10/02/2024	2024 Q2 10/02/2024	2024 Q2 10/02/2024		
Pond 2 Dredge Pond	Quarterly	2020 EMP Soil and Water Management Plan	0	1	Depth (m)	Depth (m)	Result	0.1	2	3	4.1	4.9	6.05	7.15	8.05	8.4	9	
			5	8.5	pH units	pH	Result	6.5	11.5	6.1	5.9	5.8	5.6	5.7	5.6	5.7	5.1	5.5
			0	5500	µS/cm	Electrical Conductivity	Result	251	505	252	254	253	253	254	254	254	251	254
			4	-	mg/L	Dissolved Oxygen	Result	8	35.2	8.9	9.3	9.2	9.1	9.3	9.4	9.6	8.8	9.6
			0	20	NTU	Turbidity	Result	5.1	1.6	1.6	1.7	1.7	1.5	1.6	1.6	1.6	1.6	
			0	10	mg/L	Oil & Grease	Result	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			Laboratory report issue date							04/07/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Location	Frequency	Source	Lower Criteria	Upper Criteria	Unit	Description	Quarter Sample Date	2024 Q3 11/02/2024	2024 Q3 11/02/2024	2024 Q3 11/02/2024	2024 Q3 11/02/2024	2024 Q3 11/02/2024	2024 Q3 11/02/2024	2024 Q3 11/02/2024	2024 Q3 11/02/2024	2024 Q3 11/02/2024	
Pond 2 Dredge Pond	Quarterly	2020 EMP Soil and Water Management Plan	0	1	Depth (m)	Depth (m)	Result										
			5	8.5	pH units	pH	Result										
			0	5500	µS/cm	Electrical Conductivity	Result										
			4	-	mg/L	Dissolved Oxygen	Result										
			0	20	NTU	Turbidity	Result										
			0	10	mg/L	Oil & Grease	Result										
			Laboratory report issue date														

Location	Frequency	Source	Lower Criteria	Upper Criteria	Unit	Description	Quarter Sample Date	2024 Q4 13/02/2024	2024 Q4 13/02/2024	2024 Q4 13/02/2024	2024 Q4 13/02/2024	2024 Q4 13/02/2024	2024 Q4 13/02/2024	2024 Q4 13/02/2024	2024 Q4 13/02/2024	2024 Q4 13/02/2024	
Pond 2 Dredge Pond	Quarterly	2020 EMP Soil and Water Management Plan	0	1	Depth (m)	Depth (m)	Result										
			5	8.5	pH units	pH	Result										
			0	5500	µS/cm	Electrical Conductivity	Result										
			4	-	mg/L	Dissolved Oxygen	Result										
			0	20	NTU	Turbidity	Result										
			0	10	mg/L	Oil & Grease	Result										
			Laboratory report issue date														

Ground Water Results

EPL - Annual Groundwater Water Monitoring Requirements

Location	Frequency	Source	Lower Limit	Upper Limit	Unit	Description	Year Sample Date	2024 13/02/2024
EPL Point 3 Ground Water Monitoring Bore DLP1	Yearly	EPL Section M2	-	-	mAHd	Standing Water Level	Result	0.39
			-	-	pH units	pH	Result	7.6
			-	-	mg/L	Ammonia	Result	0.09
			-	-	mg/L	Chloride	Result	220
			-	-	µS/cm	Conductivity	Result	1930
			-	-	mg/L	Total Oil & Grease	Result	9.9
			-	-	mg/L	Sulfate	Result	210
EPL Point 4 Ground Water Monitoring Bore DLP3	Yearly	EPL Section M2	-	-	mAHd	Standing Water Level	Result	0.67
			-	-	pH units	pH	Result	6.1
			-	-	mg/L	Ammonia	Result	3.3
			-	-	mg/L	Chloride	Result	2300
			-	-	µS/cm	Conductivity	Result	8490
			-	-	mg/L	Total Oil & Grease	Result	5
			-	-	mg/L	Sulfate	Result	200
EPL Point 5 Ground Water Monitoring Bore DLP5	Yearly	EPL Section M2	-	-	mAHd	Standing Water Level	Result	0.45
			-	-	pH units	pH	Result	4.8
			-	-	mg/L	Ammonia	Result	0.24
			-	-	mg/L	Chloride	Result	310
			-	-	µS/cm	Conductivity	Result	1040
			-	-	mg/L	Total Oil & Grease	Result	5
			-	-	mg/L	Sulfate	Result	29
EPL Point 6 Ground Water Monitoring Bore DLP6	Yearly	EPL Section M2	-	-	mAHd	Standing Water Level	Result	0.91
			-	-	pH units	pH	Result	5.1
			-	-	mg/L	Ammonia	Result	0.83
			-	-	mg/L	Chloride	Result	10
			-	-	µS/cm	Conductivity	Result	259
			-	-	mg/L	Total Oil & Grease	Result	5
			-	-	mg/L	Sulfate	Result	93
EPL Point 7 Ground Water Monitoring Bore DLP7	Yearly	EPL Section M2	-	-	mAHd	Standing Water Level	Result	0.42
			-	-	pH units	pH	Result	7
			-	-	mg/L	Ammonia	Result	2.3
			-	-	mg/L	Chloride	Result	570
			-	-	µS/cm	Conductivity	Result	3200
			-	-	mg/L	Total Oil & Grease	Result	5
			-	-	mg/L	Sulfate	Result	290

2024 Comments regarding annual groundwater monitoring outcomes	
Comment 1	
Comment 2	
Comment 3	

EMP - Monthly Groundwater Monitoring Requirements

Location	Frequency	Source	Lower Limit	Upper Limit	Unit	Description	Month Sample Date	January	February	March	April	May	June	July	August	September	October	November	December
								11/1/2024	12/2/2024	25/3/2024	11/4/2024	8/5/2024	12/6/2024	11/7/2024	13/8/2024	11/9/2024	10/10/2024	11/11/2024	
Ground Water Monitoring Bore DLP1	Monthly	Section 7.4.10	EMP	4.2	7	mAHd	Standing Water Level	Result	0.37	0.39	0.39	0.37	0.34	-	0.72	0.9	0.91	0.81	0.81
							pH	Result	7.5	7.6	7.5	7.5	5.3	7.1	6.1	4.5	4.7	5.6	6.7
							Electrical Conductivity	Result	1530	1630	1675	1596	123	214	147	159	167	212	626
							Disolved Oxygen	Result	0	1.2	0	0	6.7	6.5	4.3	0	0	0	6.1
							REDOX Potential	Result	-117	-92	-92	-92	143	151	296	201	141	139	31
							Standing Water Level	Result	0.65	0.67	0.67	0.9	0.8	-	0.77	0.9	0.43	0.32	0.31
							pH	Result	6.2	6.1	6.2	6.1	6.4	6.5	7.5	5.6	5.9	5.9	5.9
Ground Water Monitoring Bore DLP3	Monthly	Section 7.4.10	EMP	4.2	7	mAHd	Standing Water Level	Result	0.47	0.45	0.48	0.46	0.8	-	0.62	0.92	0.9	0.92	0.93
							pH	Result	5.6	4.8	5.2	5.4	4.2	5.2	5.7	4.2	4.9	5.8	5.6
							Electrical Conductivity	Result	1010	1040	1050	1045	820	710	728	405	471	425	462
							Disolved Oxygen	Result	0	0	0	0.1	1.6	0.1	0	0	0	0	0
							REDOX Potential	Result	124	152	156	134	261	221	218	200	162	67	84
							Standing Water Level	Result	0.92	0.91	0.5	0.5	1.22	-	1.12	1.12	1.12	1.27	1.27
							pH	Result	5.1	5.1	5.1	5.2	5.8	6.5	8.4	5.2	4.7	4.8	6.1
Ground Water Monitoring Bore DLP5	Monthly	Section 7.4.10	EMP	4.2	7	mAHd	Standing Water Level	Result	0.44	0.42	0.43	0.7	0.42	-	1.2	1.36	1.34	1.38	1.37
							pH	Result	7.4	7.2	7.4	7.2	7.2	7.4	7	6.4	6.7	6.4	6.4
							Electrical Conductivity	Result	2820	3200	2390	2943	3021	3470	3520	2960	3070	3400	3362
							Disolved Oxygen	Result	0	0.1	0	0	0.1	0.7	0.9	0	0	0	0
							REDOX Potential	Result	-30	-15	-26	-32	-26	26	22	9	0	-3	-2
							Standing Water Level	Result	0.44	0.42	0.43	0.7	0.42	-	1.2	1.36	1.34	1.38	1.37
							pH	Result	7.4	7.2	7.4	7.2	7.2	7.4	7	6.4	6.7	6.4	6.4
Ground Water Monitoring Bore DLP6	Monthly	Section 7.4.10	EMP	4.2	7	mAHd	Standing Water Level	Result	0.44	0.42	0.43	0.7	0.42	-	1.2	1.36	1.34	1.38	1.37
							pH	Result	7.4	7.2	7.4	7.2	7.2	7.4	7	6.4	6.7	6.4	6.4
							Electrical Conductivity	Result	2820	3200	2390	2943	3021	3470	3520	2960	3070	3400	3362
							Disolved Oxygen	Result	0	0.1	0	0	0.1	0.7	0.9	0	0	0	0
							REDOX Potential	Result	-30	-15	-26	-32	-26	26	22	9	0	-3	-2
							Standing Water Level	Result	0.44	0.42	0.43	0.7	0.42	-	1.2	1.36	1.34	1.38	1.37
							pH	Result	7.4	7.2	7.4	7.2	7.2	7.4	7	6.4	6.7	6.4	6.4
Ground Water Monitoring Bore DLP7	Monthly	Section 7.4.10	EMP	4.2	7	mAHd	Standing Water Level	Result	0.44	0.42	0.43	0.7	0.42	-	1.2	1.36	1.34	1.38	1.37
							pH	Result	7.4	7.2	7.4	7.2	7.2	7.4	7	6.4	6.7	6.4	6.4
							Electrical Conductivity	Result	2820	3200	2390	2943	3021	3470	3520	2960	3070	3400	3362
							Disolved Oxygen	Result	0	0.1	0	0	0.1	0.7	0.9	0	0	0	0
							REDOX Potential	Result	-30	-15	-26	-32	-26	26	22	9	0	-3	-2
							Standing Water Level	Result	0.44	0.42	0.43	0.7	0.42	-	1.2	1.36	1.34	1.38	1.37
							pH	Result	7.4	7.2	7.4	7.2	7.2	7.4	7	6.4	6.7	6.4	6.4

2024 Comments regarding monthly groundwater monitoring outcomes	
Comment 1	BWL not recorded for DLP1, DLP3, DLP5, DLP6 and DLP7 in June 2024
Comment 2	
Comment 3	

EMP - Quarterly Groundwater Water Monitoring Requirements

Location	Frequency	Source	Lower Limit	Upper Limit	Unit	Description	Quarter Sample Date	2024 Q1	2024 Q2	2024 Q3	2024 Q4	
								12/1/2024	12/1/2024	09/1/2024	12/1/2024	
Ground Water Monitoring Bore DLP1	Quarterly	Section 7.4.10	EMP	0	0.005	µg/L	Ammonia	Result	0.09	0.01	0.01	
							Arsenic	Result	0.001	0.001	0.001	
							Bicarbonate	Result	500	40	53	
							Calcium	Result	75	11	11	
							Chloride	Result	230	23	23	
							Magnesium	Result	37	3.5	4	
							Manganese	Result	0.34	0.012	0.036	
							Potassium	Result	14	2.1	2.8	
							Sodium	Result	270	24	24	
							Soluble Aluminium	Result	0.1	0.09	0.08	
							Soluble Iron	Result	1.2	0.24	0.05	
							Sulphate	Result	210	26	34	
							Oil & Grease	Result	9.9	10	10	
							Faecal coliforms	Result	10	10	10	
							Enterococci	Result	10	10	10	
							CFU per 100 mL	Result	230	3.3	2.4	
							Ammonia	Result	0.001	0.001	0.001	
							Bicarbonate	Result	170	170	240	
							Calcium	Result	91	85	83	
							Chloride	Result	2300	2600	2600	
							Magnesium	Result	140	130	130	
							Manganese	Result	0.75	0.62	0.61	
							Potassium	Result	47	43	47	
							Sodium	Result	1400	1400	1300	
							Soluble Aluminium	Result	0.06	0.09	0.05	
Soluble Iron	Result	10	11	5.7								
Sulphate	Result	200	160	180								
Oil & Grease	Result	5	10	10								
Faecal coliforms	Result	10	10	10								
Enterococci	Result	10	10	10								
CFU per 100 mL	Result	230	0.27	0.1								
Ammonia	Result	0.001	0.001	0.001								
Bicarbonate	Result	20	20	33.4								
Calcium	Result	7.7	2.7	2.3								
Chloride	Result	310	210	190								
Magnesium	Result	19	8.1	3.8								
Manganese	Result	0.13	0.059	0.029								
Potassium	Result	5.1	4.5	2.9								
Sodium	Result	170	130	90								
Soluble Aluminium	Result	0.58	0.33	0.2								
Soluble Iron	Result	1.2	1	0.62								
Sulphate	Result	6.5	41	92								
Oil & Grease	Result	6	10	10								
Faecal coliforms	Result	10	10	10								
Enterococci	Result	10	10	10								
CFU per 100 mL	Result	230	0.93	1.2								
Ammonia	Result	0.001	0.001	0.001								
Bicarbonate	Result	20	49	33.4								
Calcium	Result	11	5.5	4.8								
Chloride	Result	10	16	16								
Magnesium	Result	4	1.9	2.1								
Manganese	Result	0.23	0.09	0.079								
Potassium	Result	4.1	5.9	3.5								
Sodium	Result	7.6	11	12								
Soluble Aluminium	Result	1.2	0.27	0.29								
Soluble Iron	Result	30	12	0.79								
Sulphate	Result	63	33	41								
Oil & Grease	Result	5	10	10								
Faecal coliforms	Result	10	10	470								
Enterococci	Result	10	180	2000								
CFU per 100 mL	Result	230	2.3	0.1								
Ammonia	Result	0.001	0.001	0.001								
Bicarbonate	Result	470	460	660								
Calcium	Result	20	18	17								
Chloride	Result	570	620	720								
Magnesium	Result	40	35	35								
Manganese	Result	0.077	0.052	0.052								
Potassium	Result	24	24	27								
Sodium	Result	620	660	620								
Soluble Aluminium	Result	0.29	0.24	0.23								
Soluble Iron	Result	1.5	1.2	0.99								
Sulphate	Result	290	290	290								
Oil & Grease	Result	5	10	10								
Faecal coliforms	Result	10	10	470								
Enterococci	Result	10	180	2000								
CFU per 100 mL	Result	230	2.3	0.1								
Ammonia	Result	0.001	0.001	0.001								
Bicarbonate	Result	470	460	660								
Calcium	Result	20	18	17								
Chloride	Result	570	620	720								
Magnesium	Result	40	35	35								
Manganese	Result	0.077	0.052	0.052								
Potassium	Result	24	24	27								
Sodium	Result	620	660	620								
Soluble Aluminium	Result	0.29	0.24	0.23								
Soluble Iron	Result	1.5	1.2	0.99								
Sulphate	Result	290	290	290								
Oil & Grease	Result	5	10	10								
Faecal coliforms	Result	10	10	470								
Enterococci	Result	10	180	2000								
CFU per 100 mL	Result	230	2.3	0.1								

2024 Comments regarding quarterly groundwater monitoring outcomes	
Comment 1	
Comment 2	
Comment 3	