

Bowral Waste Centre

EPA Licence No: 13366

Monitoring Point 2

(UTM Zone 56: 262080.407 East, 6180766.636 North)

Leachate Quality Monitoring

Leachate holding dam as identified in Licence Variation Application to the EPA on 10 February 2021 - Proposed monitoring points -

Sampling frequency: Yearly

Pollutant	Unit of Measure	100 Percentile Concentration Limit	No. of Samples Required by Licence	Total no. of samples collected and analysed	Results
					18/04/2023
Alkalinity (as CaCO ₃)	mg/L	<i>No concentration limits apply - sampling for monitoring purposes only</i>	1	1	554
Aluminium (Al)	mg/L		1	1	0.02
Arsenic (As)	mg/L		1	1	<0.001
Barium (Ba)	mg/L		1	1	0.51
Benzene	mg/L		1	1	BDL
Cadmium (Cd)	mg/L		1	1	BDL
Calcium (Ca)	mg/L		1	1	118
Chemical Oxygen Demand	mg/L		1	1	42
Cobalt	mg/L		1	1	0.002
Chromium (total hexavalent)	mg/L		1	1	BDL
Chromium (total)	mg/L		1	1	0.003
Chloride (Cl)	mg/L		1	1	96
Conductivity	(µS/cm)		1	1	1220
Copper (Cu)	mg/L		1	1	BDL
Dissolved Organic Carbon	mg/L		1	1	15
Ethyl Benzene	mg/L		1	1	BDL
Fluoride (F)	mg/L		1	1	0.3
Lead (Pb)	mg/L		1	1	BDL
Magnesium (Mg)	mg/L		1	1	50
Manganese(Mn)	mg/L		1	1	0.82
Mercury (Hg)	mg/L		1	1	BDL
Nitrate + Nitrite	mg/L		1	1	0.01
Nitrogen as Ammonia (NH ₃)	mg/L		1	1	21.6
Organochlorine Pesticides	mg/L		1	1	BDL
Organophosphate Pesticides	mg/L		1	1	BDL
pH	pH Units		1	1	7.09
Phosphate (PO ₄)	mg/L		1	1	BDL
Phosphorus (P)	mg/L		1	1	0.03
Polychlorinated biphenyls (mg/L)	mg/L		1	1	BDL
Polycyclic Aromatic Hydrocarbons (mg/L)	mg/L		1	1	BDL
Potassium (K)	mg/L		1	1	12
Sodium (Na)	mg/L		1	1	53
Sulfate (SO ₄)	mg/L	1	1	19	
Toluene	mg/L	1	1	BDL	
Total Iron (Fe)	mg/L	1	1	3.87	
Total Petroleum Hydrocarbons	mg/L	1	1	160	

Total Phenolics	mg/L		1	1	BDL
Xylene	mg/L		1	1	BDL
Zinc (Zn)	mg/L		1	1	<0.005

BDL*Below detection limit.

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Monitoring Point 3

(Zone 56: 262079.587 East, 6180676.705 North)

Groundwater Quality Monitoring

Groundwater monitoring location P1-A as identified in Licence Variation Application to the EPA on 10 February 2021 - Proposed monitoring points - CM9 DOC 21/142907

Sampling frequency: Every 6 months

Pollutant	Unit of Measure	100 Percentile Concentration Limit	No. of Samples Required by Licence	Total no. of samples collected and analysed	Lowest sample value	Highest sample value	Mean of samples	Results	
								18/04/2023	24/10/2023
Alkalinity (as CaCO ₃)	mg/L	<i>No concentration limits apply - sampling for monitoring purposes only</i>	1	2	780	812	796	780	812
Aluminium (Al)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Calcium (Ca)	mg/L		1	2	132	133	133	133	132
Chloride (Cl)	mg/L		1	2	83	125	104	83	125
Conductivity	(µS/cm)		1	2	1380	1470	1425	1380	1470
Copper (Cu)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Fluoride (F)	mg/L		1	2	0.3	0.3	0.3	BDL	0.3
Iron	mg/L		1	2	0.54	0.58	0.6	0.58	0.54
Lead (Pb)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Magnesium (Mg)	mg/L		1	2	94	100	97	94	100
Manganese (Mn)	mg/L		1	2	0.134	0.138	0.136	0.138	0.134
Nitrate	mg/L		1	2	0.02	0.02	0.020	0.02	BDL
Nitrogen as Ammonia (NH ₃)	mg/L		1	2	0.76	0.83	1	0.83	0.76
pH	pH Units		1	2	7.52	7.83	7.68	7.52	7.83
Potassium (K)	mg/L		1	2	9	11	10	11	9
Sodium (Na)	mg/L		1	2	64	96	80	64	96
Standing Water Level	metres		1	2	15.13	16	16	15.13	16
Sulfate (SO ₄)	mg/L		1	2	10	10	10	10	10
Total dissolved solids	mg/L		1	2	754	810	782	754	810
Total organic carbon	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Total Phenolics	mg/L	1	2	0	0	#DIV/0!	BDL	BDL	
Zinc (Zn)	mg/L	1	2	0	0	#DIV/0!	BDL	BDL	

BDL *Below detection limit.

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Monitoring Point 4

(Zone 56: 262079.587 East, 6180676.705 North)

Groundwater Quality Monitoring

Groundwater monitoring location P1-A as identified in Licence Variation Application to the EPA on 10 February 2021 - Proposed monitoring points - CM9 DOC 21/142907

Sampling frequency: Every 6 months

Pollutant	Unit of Measure	100 Percentile Concentration Limit	No. of Samples Required by Licence	Total no. of samples collected and analysed	Lowest sample value	Highest sample value	Mean of samples	Results	
								18/04/2023	24/10/2023
Alkalinity (as CaCO ₃)	mg/L	<i>No concentration limits apply - sampling for monitoring purposes only</i>	1	2	167	177	172	167	177
Aluminium (Al)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Calcium (Ca)	mg/L		1	2	38	40	39	40	38
Chloride (Cl)	mg/L		1	2	99	110	105	99	110
Conductivity	(µS/cm)		1	2	589	615	602	589	615
Copper (Cu)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Fluoride (F)	mg/L		1	2	0.1	0.2	0.2	0.1	0.2
Iron	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Lead (Pb)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Magnesium (Mg)	mg/L		1	2	30	31	31	30	31
Manganese (Mn)	mg/L		1	2	0.01	0.01	0.010	BDL	0.01
Nitrate	mg/L		1	2	0.1	0.14	0.120	0.14	0.1
Nitrogen as Ammonia (NH ₃)	mg/L		1	2	0.01	0.07	0	0.07	0.01
pH	pH Units		1	2	6.82	7.15	6.99	6.82	7.15
Potassium (K)	mg/L		1	2	3	3	3	3	3
Sodium (Na)	mg/L		1	2	38	41	40	38	41
Standing Water Level	metres		1	2	30.23	31.64	31	30.23	31.64
Sulfate (SO ₄)	mg/L		1	2	12	13	13	12	13
Total dissolved solids	mg/L		1	2	353	354	354	354	353
Total organic carbon	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Total Phenolics	mg/L	1	2	0	0	#DIV/0!	BDL	BDL	
Zinc (Zn)	mg/L	1	2	0	0	#DIV/0!	BDL	BDL	

BDL *Below detection limit.

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Monitoring Point 5

(Zone 56: 262079.587 East, 6180676.705 North)

Groundwater Quality Monitoring

Groundwater monitoring location P1-A as identified in Licence Variation Application to the EPA on 10 February 2021 - Proposed monitoring points - CM9 DOC 21/142907

Sampling frequency: Every 6 months

Pollutant	Unit of Measure	100 Percentile Concentration Limit	No. of Samples Required by Licence	Total no. of samples collected and analysed	Lowest sample value	Highest sample value	Mean of samples	Results	
								18/04/2023	24/10/2023
Alkalinity (as CaCO ₃)	mg/L	<i>No concentration limits apply - sampling for monitoring purposes only</i>	1	2	200	220	210	200	220
Aluminium (Al)	mg/L		1	2	0	0	#DIV/0!	<0.01	BDL
Calcium (Ca)	mg/L		1	2	55	57	56	55	57
Chloride (Cl)	mg/L		1	2	37	38	38	38	37
Conductivity	(µS/cm)		1	2	654	688	671	654	688
Copper (Cu)	mg/L		1	2	0.002	0.002	0.00	BDL	0.002
Fluoride (F)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Iron	mg/L		1	2	0.28	0.28	0.3	BDL	0.28
Lead (Pb)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Magnesium (Mg)	mg/L		1	2	40	40	40	40	40
Manganese (Mn)	mg/L		1	2	0.422	0.444	0.433	0.444	0.422
Nitrate	mg/L		1	2	0.04	0.04	0.040	0.04	BDL
Nitrogen as Ammonia (NH ₃)	mg/L		1	2	0.14	0.24	0	0.24	0.14
pH	pH Units		1	2	6.57	7.01	6.79	6.57	7.01
Potassium (K)	mg/L		1	2	4	5	5	5	4
Sodium (Na)	mg/L		1	2	32	33	33	32	33
Standing Water Level	metres		1	2	17.95	18.34	18	17.95	18.34
Sulfate (SO ₄)	mg/L		1	2	122	135	129	135	122
Total dissolved solids	mg/L		1	2	384	416	400	384	416
Total organic carbon	mg/L		1	2	2	3	3	3	2
Total Phenolics	mg/L	1	2	0	0	#DIV/0!	BDL	BDL	
Zinc (Zn)	mg/L	1	2	0.01	0.014	0.012	0.01	0.014	

BDL *Below detection limit.

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Monitoring Point 6

(Zone 56: 262079.587 East, 6180676.705 North)

Groundwater Quality Monitoring

Groundwater monitoring location P1-A as identified in Licence Variation Application to the EPA on 10 February 2021 - Proposed monitoring points - CM9 DOC 21/142907

Sampling frequency: Every 6 months

Pollutant	Unit of Measure	100 Percentile Concentration Limit	No. of Samples Required by Licence	Total no. of samples collected and analysed	Lowest sample value	Highest sample value	Mean of samples	Results	
								18/04/2023	24/10/2023
Alkalinity (as CaCO ₃)	mg/L	<i>No concentration limits apply - sampling for monitoring purposes only</i>	1	2	155	168	162	155	168
Aluminium (Al)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Calcium (Ca)	mg/L		1	2	32	38	35	32	38
Chloride (Cl)	mg/L		1	2	83	103	93	83	103
Conductivity	(µ/cm)		1	2	526	557	542	526	557
Copper (Cu)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Fluoride (F)	mg/L		1	2	0.1	0.1	0.1	0.1	0.1
Iron	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Lead (Pb)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Magnesium (Mg)	mg/L		1	2	25	29	27	25	29
Manganese (Mn)	mg/L		1	2	0.001	0.001	0.001	0.001	BDL
Nitrate	mg/L		1	2	0.14	0.16	0.150	0.14	0.16
Nitrogen as Ammonia (NH ₃)	mg/L		1	2	0.03	0.06	0	0.03	0.06
pH	pH Units		1	2	6.84	7.18	7.01	6.84	7.18
Potassium (K)	mg/L		1	2	3	3	3	3	3
Sodium (Na)	mg/L		1	2	31	35	33	31	35
Standing Water Level	metres		1	2	31.1	32	32	31.1	32
Sulfate (SO ₄)	mg/L		1	2	7	8	8	8	7
Total dissolved solids	mg/L		1	2	274	326	300	274	326
Total organic carbon	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Total Phenolics	mg/L	1	2	0	0	#DIV/0!	BDL	BDL	
Zinc (Zn)	mg/L	1	2	0.01	0.01	0.010	0.01	BDL	

BDL *Below detection limit.

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Monitoring Point 7

(Zone 56: 262079.587 East, 6180676.705 North)

Groundwater Quality Monitoring

Groundwater monitoring location P1-A as identified in Licence Variation Application to the EPA on 10 February 2021 - Proposed monitoring points - CM9 DOC 21/142907

Sampling frequency: Every 6 months

Pollutant	Unit of Measure	100 Percentile Concentration Limit	No. of Samples Required by Licence	Total no. of samples collected and analysed	Lowest sample value	Highest sample value	Mean of samples	Results	
								18/04/2023	24/10/2023
Alkalinity (as CaCO ₃)	mg/L	<i>No concentration limits apply - sampling for monitoring purposes only</i>	1	2	192	198	195	192	198
Aluminium (Al)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Calcium (Ca)	mg/L		1	2	53	54	54	53	54
Chloride (Cl)	mg/L		1	2	134	155	145	134	155
Conductivity	(µS/cm)		1	2	708	754	731	708	754
Copper (Cu)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Fluoride (F)	mg/L		1	2	0.2	0.3	0.3	0.2	0.3
Iron	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Lead (Pb)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Magnesium (Mg)	mg/L		1	2	34	35	35	34	35
Manganese (Mn)	mg/L		1	2	0.729	1.41	1.070	0.729	1.41
Nitrate	mg/L		1	2	0.03	0.05	0.040	0.05	0.03
Nitrogen as Ammonia (NH ₃)	mg/L		1	2	0.09	0.16	0	0.09	0.16
pH	pH Units		1	2	6.74	7.15	6.95	6.74	7.15
Potassium (K)	mg/L		1	2	6	6	6	6	6
Sodium (Na)	mg/L		1	2	46	46	46	46	46
Standing Water Level	metres		1	2	27.93	38.59	33	27.93	38.59
Sulfate (SO ₄)	mg/L		1	2	2	2	2	2	2
Total dissolved solids	mg/L		1	2	472	478	475	472	478
Total organic carbon	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Total Phenolics	mg/L	1	2	0	0	#DIV/0!	BDL	BDL	
Zinc (Zn)	mg/L	1	2	0	0	#DIV/0!	BDL	BDL	

*Below detection limit.

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Monitoring Point 8

(Zone 56: 262079.587 East, 6180676.705 North)

Groundwater Quality Monitoring

Groundwater monitoring location P1-A as identified in Licence Variation Application to the EPA on 10 February 2021 - Proposed monitoring points - CM9 DOC 21/142907

Sampling frequency: Every 6 months

Pollutant	Unit of Measure	100 Percentile Concentration Limit	No. of Samples Required by Licence	Total no. of samples collected and analysed	Lowest sample value	Highest sample value	Mean of samples	Results	
								18/04/2023	24/10/2023
Alkalinity (as CaCO ₃)	mg/L	<i>No concentration limits apply - sampling for monitoring purposes only</i>	1	2	158	159	159	159	158
Aluminium (Al)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Calcium (Ca)	mg/L		1	2	32	33	33	32	33
Chloride (Cl)	mg/L		1	2	63	82	73	63	82
Conductivity	(µS/cm)		1	2	462	497	480	462	497
Copper (Cu)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Fluoride (F)	mg/L		1	2	0.1	0.2	0.2	0.2	0.1
Iron	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Lead (Pb)	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Magnesium (Mg)	mg/L		1	2	22	23	23	22	23
Manganese (Mn)	mg/L		1	2	0.026	0.031	0.029	0.031	0.026
Nitrate	mg/L		1	2	0.12	0.14	0.130	0.12	0.14
Nitrogen as Ammonia (NH ₃)	mg/L		1	2	0.01	0.04	0	0.01	0.04
pH	pH Units		1	2	6.61	6.97	6.79	6.61	6.97
Potassium (K)	mg/L		1	2	4	5	5	5	4
Sodium (Na)	mg/L		1	2	37	38	38	38	37
Standing Water Level	metres		1	2	32.13	33.78	33	32.13	33.78
Sulfate (SO ₄)	mg/L		1	2	3	4	4	4	3
Total dissolved solids	mg/L		1	2	272	310	291	310	272
Total organic carbon	mg/L		1	2	0	0	#DIV/0!	BDL	BDL
Total Phenolics	mg/L	1	2	0	0	#DIV/0!	BDL	BDL	
Zinc (Zn)	mg/L	1	2	0.014	0.014	0.014	0.014	0.014	

*Below detection limit.

