

Kooragang Island analytical reports

Soil monitoring, effluent and groundwater water reports

EPL Number: 20165

BOC LIMITED | 9 EGRET STREET, KOORAGANG NSW 2304

Effluent and Groundwater Monitoring Data – Oct 2023

Published: 13/12/23

EPL No.: 20165

Qualifications related to limits

Samples taken as per approved methods

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 1 Cooling Tower	MJM Sampling Date: 03-10-2023	MJM Results Received: 10-10-2023	pH	Quarterly	pH	8.3	8.5	9.0
			Electrical Conductivity	Quarterly	µS/cm	1780.0	1917.5	2030.0
	Biocide Sampling Date: 05-10-2023	Biocide Results Received: 30-11-2023	Sodium Absorption Ratio	Quarterly	-	3.8	19.9	67.0
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	41.0	144.0	258.0
			Chloride	Quarterly	mg/L	370.0	404.3	425.0
			Sodium	Quarterly	mg/L	220.0	250.0	329.0
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	2.0	2.0	2.0
			Fluoride	Quarterly	mg/L	0.4	1.3	2.8
			Nitrogen (total)	Quarterly	mg/L	3.8	4.2	4.5
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.2	1.3	1.4
			Sulfate	Quarterly	mg/L	12.0	215.5	334.0
			Total Dissolved Solids	Quarterly	mg/L	1000.0	1240.0	1350.0
			Phosphorus	Quarterly	mg/L	0.1	0.1	0.2
			Arsenic	Quarterly	mg/L	0.0010	0.0010	0.0010
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.0010	0.0010	0.0010
			Copper	Quarterly	mg/L	0.0100	0.0165	0.0280
			Nickel	Quarterly	mg/L	0.0010	0.0010	0.0010
			Lead	Quarterly	mg/L	0.0010	0.0010	0.0010
			Zinc	Quarterly	mg/L	0.0050	0.0085	0.0100
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			
Biocides (active component isothiazoline)	Quarterly	mg/L	<0.05	<0.05	<0.05			
Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1			

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EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 2 – BH1	03-10-2023	10-10-2023	pH	Quarterly	pH	7.63	7.7	7.9
			Electrical Conductivity	Quarterly	µS/cm	429	473	501
			Sodium Absorption Ratio	Quarterly	-	0.29	0.35	0.4
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	218	235	262
			Chloride	Quarterly	mg/L	13	18	24
			Sodium	Quarterly	mg/L	11	13	14
			Nitrogen (total)	Quarterly	mg/L	0.3	2.1	5.1
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.3	2.1	5.1
			Nitrate	Quarterly	mg/L	0.01	0.0	0.02
			Sulphate	Quarterly	mg/L	12	24	30
			Phosphorus	Quarterly	mg/L	0.44	3.47	6.63
			Reactive Phosphorus	Quarterly	mg/L	0.05	0.07	0.08
			Total Dissolved Solids	Quarterly	mg/L	310	326	354
			Fluoride	Quarterly	mg/L	0.5	0.6	0.6
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.0015	0.002
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.0010	0.001
			Copper	Quarterly	mg/L	0.001	0.0025	0.004
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
Lead	Quarterly	mg/L	0.001	0.0013	0.002			
Zinc	Quarterly	mg/L	0.006	0.0073	0.009			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

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EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 3 – BH2	03-10-2023	10-10-2023	pH	Quarterly	pH	7.36	7.44	7.53
			Electrical Conductivity	Quarterly	µS/cm	516	535	551
			Sodium Absorption Ratio	Quarterly	-	0.23	0.3	0.31
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	237	263	278
			Chloride	Quarterly	mg/L	11	19	23
			Sodium	Quarterly	mg/L	9	10	11
			Nitrogen (total)	Quarterly	mg/L	0.3	2.1	4.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.3	2.1	4.8
			Nitrate	Quarterly	mg/L	0.01	0.05	0.15
			Sulphate	Quarterly	mg/L	20	31	36
			Phosphorus	Quarterly	mg/L	0.07	0.97	2.9
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.010	0.01
			Total Dissolved Solids	Quarterly	mg/L	354	364	378
			Fluoride	Quarterly	mg/L	0.8	0.8	0.9
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.0010	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.0010	0.001
			Copper	Quarterly	mg/L	0.001	0.0025	0.005
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
Lead	Quarterly	mg/L	0.001	0.0018	0.003			
Zinc	Quarterly	mg/L	0.006	0.0118	0.017			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

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EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 4 – BH3	03-10-2023	10-10-2023	pH	Quarterly	pH	7.85	7.895	8.02
			Electrical Conductivity	Quarterly	µS/cm	347	396.50	440
			Sodium Absorption Ratio	Quarterly	-	0.32	0.35	0.38
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	178	200	222
			Chloride	Quarterly	mg/L	11	14	18
			Sodium	Quarterly	mg/L	11	12	12
			Nitrogen (total)	Quarterly	mg/L	0.6	1.3	2.1
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.5	1.2	2
			Nitrate	Quarterly	mg/L	0.01	0.05	0.07
			Sulphate	Quarterly	mg/L	11	14	18
			Phosphorus	Quarterly	mg/L	0.85	2	3.49
			Reactive Phosphorus	Quarterly	mg/L	0.12	0.19	0.23
			Total Dissolved Solids	Quarterly	mg/L	224	241	281
			Fluoride	Quarterly	mg/L	0.6	0.68	0.7
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.003	0.003	0.003
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.002	0.003
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.005	0.008	0.016			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

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EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 5 – BH4	03-10-2023	10-10-2023	pH	Quarterly	pH	6.94	7.13	7.28
			Electrical Conductivity	Quarterly	µS/cm	1460	1492.5	1570
			Sodium Absorption Ratio	Quarterly	-	1.69	2.08	2.6
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	232	580	1600
			Chloride	Quarterly	mg/L	248	270	288
			Sodium	Quarterly	mg/L	90	105	131
			Nitrogen (total)	Quarterly	mg/L	1.4	94.4	178
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.4	94.3	178
			Nitrate	Quarterly	mg/L	0.03	0.088	0.13
			Sulphate	Quarterly	mg/L	205	227	247
			Phosphorus	Quarterly	mg/L	19.2	212.05	423.00
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.023	0.06
			Total Dissolved Solids	Quarterly	mg/L	974	1064	1140
			Fluoride	Quarterly	mg/L	0.9	1.2	2
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.002	0.002
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.001	0.001
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.006	0.01	0.014			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

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EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 6 – BHS	03-10-2023	10-10-2023	pH	Quarterly	pH	7.72	7.91	8.04
			Electrical Conductivity	Quarterly	µS/cm	579	755	914
			Sodium Absorption Ratio	Quarterly	-	1.1	1.60	2.24
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	244	302	418
			Chloride	Quarterly	mg/L	32	80	120
			Sodium	Quarterly	mg/L	43	61.50	89
			Nitrogen (total)	Quarterly	mg/L	2	2.75	4.2
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.8	2.25	4.1
			Nitrate	Quarterly	mg/L	0.02	0.65	1.86
			Sulphate	Quarterly	mg/L	17	32.5	46
			Phosphorus	Quarterly	mg/L	0.33	1.01	1.38
			Reactive Phosphorus	Quarterly	mg/L	0.07	0.23	0.41
			Total Dissolved Solids	Quarterly	mg/L	370	454.75	526
			Fluoride	Quarterly	mg/L	0.5	0.70	0.9
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.003	0.0035	0.005
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.0010	0.001
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.0013	0.002			
Zinc	Quarterly	mg/L	0.005	0.0050	0.005			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

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EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 7 – BH6	03-10-2023	10-10-2023	pH	Quarterly	pH	7.73	7.8775	7.99
			Electrical Conductivity	Quarterly	µS/cm	476	523	582
			Sodium Absorption Ratio	Quarterly	-	0.47	0.6225	0.81
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	258	276	302
			Chloride	Quarterly	mg/L	16	22.75	34
			Sodium	Quarterly	mg/L	18	21.75	29
			Nitrogen (total)	Quarterly	mg/L	0.8	1.1	1.7
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.8	1.075	1.7
			Nitrate	Quarterly	mg/L	0.01	0.033333	0.08
			Sulphate	Quarterly	mg/L	1	4	10
			Phosphorus	Quarterly	mg/L	1.1	2.6875	3.67
			Reactive Phosphorus	Quarterly	mg/L	0.2	0.3025	0.44
			Total Dissolved Solids	Quarterly	mg/L	294	320	334
			Fluoride	Quarterly	mg/L	0.8	0.925	1
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.002	0.00425	0.007
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.00125	0.002
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.005	0.0065	0.011			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – July 2023

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EPL No.: 20165

Qualifications related to limits

Samples taken as per approved methods

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 1 Cooling Tower	MJM Sampling Date: 19/07/2023	MJM Results Received: 03/08/2023	pH	Quarterly	pH	8.3	8.6	9.0
			Electrical Conductivity	Quarterly	µS/cm	1780.0	1880.0	1970.0
	Biocide Sampling Date: 04/07/2023	Biocide Results Received: 03/08/2023	Sodium Absorption Ratio	Quarterly	-	4.3	25.3	67.0
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	41.0	106.0	144.0
			Chloride	Quarterly	mg/L	411.0	415.7	425.0
			Sodium	Quarterly	mg/L	225.0	260.0	329.0
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	2.0	2.0	2.0
			Fluoride	Quarterly	mg/L	0.4	1.4	2.8
			Nitrogen (total)	Quarterly	mg/L	3.8	4.0	4.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.2	1.3	1.4
			Sulfate	Quarterly	mg/L	12.0	177.7	334.0
			Total Dissolved Solids	Quarterly	mg/L	1000.0	1203.3	1350.0
			Phosphorus	Quarterly	mg/L	0.1	0.2	0.2
			Arsenic	Quarterly	mg/L	0.0010	0.0010	0.0010
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.0010	0.0010	0.0010
			Copper	Quarterly	mg/L	0.0100	0.0177	0.0280
			Nickel	Quarterly	mg/L	0.0010	0.0010	0.0010
			Lead	Quarterly	mg/L	0.0010	0.0010	0.0010
			Zinc	Quarterly	mg/L	0.0050	0.0083	0.0100
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			
			Biocides (active component isothiazoline)	Quarterly	mg/L	<0.05	<0.05	<0.05
			Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1

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EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 2 – BH1	19/07/2023	03/08/2023	pH	Quarterly	pH	7.63	7.8	7.9
			Electrical Conductivity	Quarterly	µS/cm	429	467	501
			Sodium Absorption Ratio	Quarterly	-	0.34	0.37	0.4
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	218	226	230
			Chloride	Quarterly	mg/L	13	15	18
			Sodium	Quarterly	mg/L	12	13	14
			Nitrogen (total)	Quarterly	mg/L	0.3	2.3	5.1
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.3	2.3	5.1
			Nitrate	Quarterly	mg/L	0.01	0.0	0.02
			Sulphate	Quarterly	mg/L	12	23	30
			Phosphorus	Quarterly	mg/L	0.44	3.93	6.63
			Reactive Phosphorus	Quarterly	mg/L	0.05	0.06	0.07
			Total Dissolved Solids	Quarterly	mg/L	310	316	326
			Fluoride	Quarterly	mg/L	0.6	0.6	0.6
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.0017	0.002
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.0010	0.001
			Copper	Quarterly	mg/L	0.001	0.0020	0.003
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
Lead	Quarterly	mg/L	0.001	0.0013	0.002			
Zinc	Quarterly	mg/L	0.006	0.0067	0.008			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – July 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 3 – BH2	19/07/2023	03/08/2023	pH	Quarterly	pH	7.41	7.46	7.53
			Electrical Conductivity	Quarterly	µS/cm	516	530	540
			Sodium Absorption Ratio	Quarterly	-	0.23	0.3	0.31
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	237	260	278
			Chloride	Quarterly	mg/L	11	18	23
			Sodium	Quarterly	mg/L	9	10	11
			Nitrogen (total)	Quarterly	mg/L	0.3	2.6	4.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.3	2.5	4.8
			Nitrate	Quarterly	mg/L	0.02	0.06	0.15
			Sulphate	Quarterly	mg/L	20	29	35
			Phosphorus	Quarterly	mg/L	0.07	1.16	2.9
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.010	0.01
			Total Dissolved Solids	Quarterly	mg/L	354	363	378
			Fluoride	Quarterly	mg/L	0.8	0.8	0.9
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.0010	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.0010	0.001
			Copper	Quarterly	mg/L	0.001	0.0017	0.003
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
Lead	Quarterly	mg/L	0.001	0.0020	0.003			
Zinc	Quarterly	mg/L	0.006	0.0107	0.017			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

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EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 4 – BH3	19/07/2023	03/08/2023	pH	Quarterly	pH	7.85	7.91	8.02
			Electrical Conductivity	Quarterly	µS/cm	384	413.00	440
			Sodium Absorption Ratio	Quarterly	-	0.32	0.35	0.38
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	186	207	222
			Chloride	Quarterly	mg/L	12	14	18
			Sodium	Quarterly	mg/L	11	12	12
			Nitrogen (total)	Quarterly	mg/L	0.6	1.4	2.1
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.5	1.3	2
			Nitrate	Quarterly	mg/L	0.06	0.06	0.07
			Sulphate	Quarterly	mg/L	11	14	18
			Phosphorus	Quarterly	mg/L	0.85	1	1.51
			Reactive Phosphorus	Quarterly	mg/L	0.12	0.18	0.21
			Total Dissolved Solids	Quarterly	mg/L	224	247	281
			Fluoride	Quarterly	mg/L	0.6	0.67	0.7
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.003	0.003	0.003
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.002	0.003
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.005	0.009	0.016			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – July 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 5 – BH4	19/07/2023	03/08/2023	pH	Quarterly	pH	6.94	7.08	7.17
			Electrical Conductivity	Quarterly	µS/cm	1460	1466.67	1480
			Sodium Absorption Ratio	Quarterly	-	1.69	1.91	2.18
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	232	240	254
			Chloride	Quarterly	mg/L	248	264	285
			Sodium	Quarterly	mg/L	90	96	100
			Nitrogen (total)	Quarterly	mg/L	63	125.3	178
			Total Kjeldahl Nitrogen	Quarterly	mg/L	62.8	125.3	178
			Nitrate	Quarterly	mg/L	0.03	0.087	0.13
			Sulphate	Quarterly	mg/L	205	220	230
			Phosphorus	Quarterly	mg/L	188	276.33	423.00
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.027	0.06
			Total Dissolved Solids	Quarterly	mg/L	974	1068	1140
			Fluoride	Quarterly	mg/L	0.9	0.9	1
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.001	0.002
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.001	0.001
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.006	0.01	0.014			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – July 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 6 – BH5	19/07/2023	03/08/2023	pH	Quarterly	pH	7.72	7.86	7.95
			Electrical Conductivity	Quarterly	µS/cm	579	711	914
			Sodium Absorption Ratio	Quarterly	-	1.27	1.76	2.24
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	244	263	299
			Chloride	Quarterly	mg/L	32	67	118
			Sodium	Quarterly	mg/L	50	67.67	89
			Nitrogen (total)	Quarterly	mg/L	2	2.97	4.2
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.8	2.3	4.1
			Nitrate	Quarterly	mg/L	0.02	0.65	1.86
			Sulphate	Quarterly	mg/L	25	37.67	46
			Phosphorus	Quarterly	mg/L	0.33	1.02	1.38
			Reactive Phosphorus	Quarterly	mg/L	0.07	0.21	0.41
			Total Dissolved Solids	Quarterly	mg/L	370	431	496
			Fluoride	Quarterly	mg/L	0.5	0.63	0.8
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.003	0.003	0.003
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.0010	0.001
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.0013	0.002			
Zinc	Quarterly	mg/L	0.005	0.0050	0.005			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – July 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 7 – BH6	19/07/2023	03/08/2023	pH	Quarterly	pH	7.73	7.85	7.99
			Electrical Conductivity	Quarterly	µS/cm	476	518.67	582
			Sodium Absorption Ratio	Quarterly	-	0.47	0.56	0.69
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	258	273.3	302
			Chloride	Quarterly	mg/L	16	22.67	34
			Sodium	Quarterly	mg/L	18	19.3	22
			Nitrogen (total)	Quarterly	mg/L	0.8	1.13	1.7
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.8	1.1	1.7
			Nitrate	Quarterly	mg/L	0.01	0.03	0.08
			Sulphate	Quarterly	mg/L	1	4	10
			Phosphorus	Quarterly	mg/L	1.1	2.4	3.67
			Reactive Phosphorus	Quarterly	mg/L	0.2	0.26	0.36
			Total Dissolved Solids	Quarterly	mg/L	294	315.3	331
			Fluoride	Quarterly	mg/L	0.8	0.9	1
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.002	0.0047	0.007
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.001	0.002
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.005	0.007	0.011			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – April 2023

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EPL No.: 20165

Qualifications related to limits
 Samples taken as per approved methods

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 1 Cooling Tower	5/4/2023	18/04/23 And 08-05-2023	pH	Quarterly	pH	8.31	8.32	8.32
			Electrical Conductivity	Quarterly	µS/cm	1890	1930	1970
			Sodium Absorption Ratio	Quarterly	-	4.3	4.4	4.56
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	133	139	144
			Chloride	Quarterly	mg/L	411	411	411
			Sodium	Quarterly	mg/L	225	226	226
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	2	2	2
			Fluoride	Quarterly	mg/L	0.4	1.6	2.8
			Nitrogen (total)	Quarterly	mg/L	3.8	4.05	4.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.3	1.4	1.4
			Sulfate	Quarterly	mg/L	12	173	334
			Total Dissolved Solids	Quarterly	mg/L	1260	1305	1350
			Phosphorus	Quarterly	mg/L	0.12	0.18	0.23
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.015	0.022	0.028
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
			Lead	Quarterly	mg/L	0.001	0.001	0.001
			Zinc	Quarterly	mg/L	0.01	0.010	0.01
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			
Biocides (active component isothiazoline)	Quarterly	mg/L	<0.05	<0.05	<0.05			
Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1			

Effluent and Groundwater Monitoring Data – April 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 2 – BH1	5/4/2023	18/04/2023	pH	Quarterly	pH	7.63	7.7	7.7
			Electrical Conductivity	Quarterly	µS/cm	429	450	470
			Sodium Absorption Ratio	Quarterly	-	0.38	0.39	0.4
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	218	224	230
			Chloride	Quarterly	mg/L	13	14	15
			Sodium	Quarterly	mg/L	14	14	14
			Nitrogen (total)	Quarterly	mg/L	0.3	1.0	1.6
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.3	1.0	1.6
			Nitrate	Quarterly	mg/L	0.01	0.0	0.02
			Sulfate	Quarterly	mg/L	12	21	30
			Phosphorus	Quarterly	mg/L	0.44	2.58	4.72
			Reactive Phosphorus	Quarterly	mg/L	0.05	0.06	0.07
			Total Dissolved Solids	Quarterly	mg/L	310	312	313
			Fluoride	Quarterly	mg/L	0.6	0.6	0.6
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.0015	0.002
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.0010	0.001
			Copper	Quarterly	mg/L	0.001	0.0020	0.003
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
Lead	Quarterly	mg/L	0.001	0.0015	0.002			
Zinc	Quarterly	mg/L	0.006	0.0070	0.008			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – April 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 3 – BH2	5/4/2023	18/04/2023	pH	Quarterly	pH	7.41	7.43	7.45
			Electrical Conductivity	Quarterly	µS/cm	516	528	540
			Sodium Absorption Ratio	Quarterly	-	0.23	0.2	0.26
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	266	272	278
			Chloride	Quarterly	mg/L	11	16	20
			Sodium	Quarterly	mg/L	9	10	10
			Nitrogen (total)	Quarterly	mg/L	0.3	1.5	2.6
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.3	1.4	2.4
			Nitrate	Quarterly	mg/L	0.02	0.09	0.15
			Sulfate	Quarterly	mg/L	20	28	35
			Phosphorus	Quarterly	mg/L	0.07	0.29	0.51
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.010	0.01
			Total Dissolved Solids	Quarterly	mg/L	354	366	378
			Fluoride	Quarterly	mg/L	0.8	0.9	0.9
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.0010	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.0010	0.001
			Copper	Quarterly	mg/L	0.001	0.0010	0.001
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
Lead	Quarterly	mg/L	0.001	0.0020	0.003			
Zinc	Quarterly	mg/L	0.006	0.0075	0.009			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – April 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 4 – BH3	5/4/2023	18/04/2023	pH	Quarterly	pH	7.85	7.855	7.86
			Electrical Conductivity	Quarterly	µS/cm	415	427.50	440
			Sodium Absorption Ratio	Quarterly	-	0.32	0.33	0.34
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	213	218	222
			Chloride	Quarterly	mg/L	13	16	18
			Sodium	Quarterly	mg/L	11	12	12
			Nitrogen (total)	Quarterly	mg/L	0.6	1.4	2.1
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.5	1.3	2
			Nitrate	Quarterly	mg/L	0.06	0.07	0.07
			Sulfate	Quarterly	mg/L	11	15	18
			Phosphorus	Quarterly	mg/L	0.85	1	1.06
			Reactive Phosphorus	Quarterly	mg/L	0.12	0.17	0.21
			Total Dissolved Solids	Quarterly	mg/L	236	259	281
			Fluoride	Quarterly	mg/L	0.6	0.65	0.7
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.003	0.003	0.003
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.002	0.003
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.005	0.011	0.016			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – April 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 5 – BH4	5/4/2023	18/04/2023	pH	Quarterly	pH	6.94	7.03	7.12
			Electrical Conductivity	Quarterly	µS/cm	1460	1470	1480
			Sodium Absorption Ratio	Quarterly	-	1.69	1.78	1.86
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	232	243	254
			Chloride	Quarterly	mg/L	260	273	285
			Sodium	Quarterly	mg/L	90	95	100
			Nitrogen (total)	Quarterly	mg/L	135	156.5	178
			Total Kjeldahl Nitrogen	Quarterly	mg/L	135	156.5	178
			Nitrate	Quarterly	mg/L	0.03	0.065	0.1
			Sulfate	Quarterly	mg/L	205	218	230
			Phosphorus	Quarterly	mg/L	218	320.50	423.00
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.035	0.06
			Total Dissolved Solids	Quarterly	mg/L	1090	1115	1140
			Fluoride	Quarterly	mg/L	0.9	0.9	0.9
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.002	0.002
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.001	0.001
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.006	0.0085	0.011			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – April 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 6 – BH5	5/4/2023	18/04/2023	pH	Quarterly	pH	7.72	7.82	7.92
			Electrical Conductivity	Quarterly	µS/cm	579	747	914
			Sodium Absorption Ratio	Quarterly	-	1.27	1.76	2.24
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	246	273	299
			Chloride	Quarterly	mg/L	32	75	118
			Sodium	Quarterly	mg/L	50	69.50	89
			Nitrogen (total)	Quarterly	mg/L	2.7	3.45	4.2
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.8	2.45	4.1
			Nitrate	Quarterly	mg/L	0.06	0.96	1.86
			Sulfate	Quarterly	mg/L	42	44	46
			Phosphorus	Quarterly	mg/L	0.33	0.86	1.38
			Reactive Phosphorus	Quarterly	mg/L	0.07	0.24	0.41
			Total Dissolved Solids	Quarterly	mg/L	427	461.5	496
			Fluoride	Quarterly	mg/L	0.5	0.65	0.8
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.003	0.003	0.003
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.0010	0.001
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.0015	0.002			
Zinc	Quarterly	mg/L	0.005	0.0050	0.005			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – April 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 7 – BH6	5/4/2023	18/04/2023	pH	Quarterly	pH	7.73	7.785	7.84
			Electrical Conductivity	Quarterly	µS/cm	476	529	582
			Sodium Absorption Ratio	Quarterly	-	0.47	0.495	0.52
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	260	281	302
			Chloride	Quarterly	mg/L	16	25	34
			Sodium	Quarterly	mg/L	18	18	18
			Nitrogen (total)	Quarterly	mg/L	0.8	0.85	0.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.8	0.8	0.8
			Nitrate	Quarterly	mg/L	0.01	0.045	0.08
			Sulfate	Quarterly	mg/L	1	5.5	10
			Phosphorus	Quarterly	mg/L	1.1	1.77	2.44
			Reactive Phosphorus	Quarterly	mg/L	0.2	0.205	0.21
			Total Dissolved Solids	Quarterly	mg/L	321	326	331
			Fluoride	Quarterly	mg/L	0.8	0.85	0.9
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.005	0.006	0.007
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.0015	0.002
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.005	0.008	0.011			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Soil Monitoring Data January 2023

EPL Point 8

Published: 24/02/23 Licensee: BOC Limited Kooragang EPL no.: 20165								
EPA Point ID	Date of Sampling	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required by EPL	Units of Measure	January 2023		
						Min Value	Mean Value	Max Value
8 – Surface 1A	17/01/2023	07/02/2023	pH	Yearly	pH Unit	8.5	8.5	8.5
			Bray Phosphorus *	Yearly	mg/kg	6.2	6.2	6.2
			Colwell Phosphorus **	Yearly	mg/kg	10	10	10
			Fluoride	Yearly	mg/kg	<40	<40	<40
			Chloride	Yearly	mg/kg	<10	<10	<10
			Conductivity	Yearly	µS/cm	57	57	57
			Exchangeable Calcium	Yearly	meq/100g	1.7	1.7	1.7
			Exchangeable Magnesium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Potassium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Sodium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Cation Exchange Capacity	Yearly	meq/100g	1.7	1.7	1.7
			Moisture	Yearly	%	4.3	4.3	4.3
			Nitrate	Every 3 years	mg/kg	-	-	-
			Nitrogen (total)	Every 3 years	mg/kg	-	-	-
			Nitrogen Oxides	Every 3 years	mg/kg	-	-	-
			Phosphorus (total)	Every 3 years	mg/kg	-	-	-
			Phosphorus sorption capacity	Every 3 years	mg/kg	-	-	-
Total Kjeldahl Nitrogen	Every 3 years	mg/kg	-	-	-			

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EPA Point ID	Date of Sampling	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required by EPL	Units of Measure	January 2023		
						Min Value	Mean Value	Max Value
8 – Surface 2A	17/01/2023	07/02/2023	pH	Yearly	pH Unit	8.5	8.5	8.5
			Bray Phosphorus *	Yearly	mg/kg	6.6	6.6	6.6
			Colwell Phosphorus **	Yearly	mg/kg	6	6	6
			Fluoride	Yearly	mg/kg	<40	<40	<40
			Chloride	Yearly	mg/kg	<10	<10	<10
			Conductivity	Yearly	µS/cm	57	57	57
			Exchangeable Calcium	Yearly	meq/100g	1.3	1.3	1.3
			Exchangeable Magnesium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Potassium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Sodium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Cation Exchange Capacity	Yearly	meq/100g	1.3	1.3	1.3
			Moisture	Yearly	%	2.1	2.1	2.1
			Nitrate	Every 3 years	mg/kg	-	-	-
			Nitrogen (total)	Every 3 years	mg/kg	-	-	-
			Nitrogen Oxides	Every 3 years	mg/kg	-	-	-
			Phosphorus (total)	Every 3 years	mg/kg	-	-	-
			Phosphorus sorption capacity	Every 3 years	mg/kg	-	-	-
Total Kjeldahl Nitrogen	Every 3 years	mg/kg	-	-	-			

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EPA Point ID	Date of Sampling	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required by EPL	Units of Measure	January 2023		
						Min Value	Mean Value	Max Value
8 – Sub-surface S1B	17/01/2023	07/02/2023	pH	Yearly	pH Unit	8.2	8.2	8.2
			Bray Phosphorus *	Yearly	mg/kg	9.3	9.3	9.3
			Colwell Phosphorus **	Yearly	mg/kg	8	8	8
			Fluoride	Yearly	mg/kg	50	50	50
			Chloride	Yearly	mg/kg	<10	<10	<10
			Conductivity	Yearly	µS/cm	53	53	53
			Exchangeable Calcium	Yearly	meq/100g	1.7	1.7	1.7
			Exchangeable Magnesium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Potassium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Sodium	Yearly	meq/100g	0.2	0.2	0.2
			Cation Exchange Capacity	Yearly	meq/100g	2.0	2.0	2.0
			Moisture	Yearly	%	2.0	2.0	2.0
			Nitrate	Every 3 years	mg/kg	-	-	-
			Nitrogen (total)	Every 3 years	mg/kg	-	-	-
			Nitrogen Oxides	Every 3 years	mg/kg	-	-	-
			Phosphorus (total)	Every 3 years	mg/kg	-	-	-
			Phosphorus sorption capacity	Every 3 years	mg/kg	-	-	-
Total Kjeldahl Nitrogen	Every 3 years	mg/kg	-	-	-			

Published: 24/02/23
 Licensee: BOC Limited Kooragang
 EPL no.: 20165

EPA Point ID	Date of Sampling	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required by EPL	Units of Measure	January 2023		
						Min Value	Mean Value	Max Value
8 – Sub-surface S2B	17/01/2023	07/02/2023	pH	Yearly	pH Unit	8.4	8.4	8.4
			Bray Phosphorus *	Yearly	mg/kg	5.9	5.9	5.9
			Colwell Phosphorus **	Yearly	mg/kg	5	5	5
			Fluoride	Yearly	mg/kg	<40	<40	<40
			Chloride	Yearly	mg/kg	<10	<10	<10
			Conductivity	Yearly	µS/cm	60	60	60
			Exchangeable Calcium	Yearly	meq/100g	1.4	1.4	1.4
			Exchangeable Magnesium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Potassium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Sodium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Cation Exchange Capacity	Yearly	meq/100g	1.4	1.4	1.4
			Moisture	Yearly	%	1.6	1.6	1.6
			Nitrate	Every 3 years	mg/kg	-	-	-
			Nitrogen (total)	Every 3 years	mg/kg	-	-	-
			Nitrogen Oxides	Every 3 years	mg/kg	-	-	-
			Phosphorus (total)	Every 3 years	mg/kg	-	-	-
			Phosphorus sorption capacity	Every 3 years	mg/kg	-	-	-
Total Kjeldahl Nitrogen	Every 3 years	mg/kg	-	-	-			

Effluent and Groundwater Monitoring Data – January 2023

Published: 24/02/23
Licensee: BOC LIMITED
EPL No.: 20165

Qualifications related to limits
 Samples taken as per approved methods

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 1 Cooling Tower	19/01/2023	31/01/2023 and 16-02-2023	pH	Quarterly	pH	8.32	8.32	8.32
			Electrical Conductivity	Quarterly	µS/cm	1970	1970	1970
			Sodium Absorption Ratio	Quarterly	-	4.3	4.3	4.3
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	144	144	144
			Chloride	Quarterly	mg/L	411	411	411
			Sodium	Quarterly	mg/L	226	226	226
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	2	2	2
			Fluoride	Quarterly	mg/L	2.8	2.8	2.8
			Nitrogen (total)	Quarterly	mg/L	3.8	3.8	3.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.3	1.3	1.3
			Sulfate	Quarterly	mg/L	12	12	12
			Total Dissolved Solids	Quarterly	mg/L	1350	1350	1350
			Phosphorus	Quarterly	mg/L	0.23	0.23	0.23
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.028	0.028	0.028
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
			Lead	Quarterly	mg/L	0.001	0.001	0.001
			Zinc	Quarterly	mg/L	0.01	0.010	0.01
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			
Biocides (active component isothiazoline)	Quarterly	mg/L	<0.05	<0.05	<0.05			
Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1			

Effluent and Groundwater Monitoring Data – January 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 2 – BH1	19/01/2023	31/01/2023	pH	Quarterly	pH	7.74	7.7	7.7
			Electrical Conductivity	Quarterly	µS/cm	429	429	429
			Sodium Absorption Ratio	Quarterly	-	0.4	0.40	0.4
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	218	218	218
			Chloride	Quarterly	mg/L	15	15	15
			Sodium	Quarterly	mg/L	14	14	14
			Nitrogen (total)	Quarterly	mg/L	0.3	0.3	0.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.3	0.3	0.3
			Nitrate	Quarterly	mg/L	0.02	0.0	0.02
			Sulfate	Quarterly	mg/L	12	12	12
			Phosphorus	Quarterly	mg/L	0.44	0.44	0.44
			Reactive Phosphorus	Quarterly	mg/L	0.07	0.07	0.07
			Total Dissolved Solids	Quarterly	mg/L	310	310	310
			Fluoride	Quarterly	mg/L	0.6	0.6	0.6
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.002	0.0020	0.002
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.0010	0.001
			Copper	Quarterly	mg/L	0.001	0.0010	0.001
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
Lead	Quarterly	mg/L	0.001	0.0010	0.001			
Zinc	Quarterly	mg/L	0.006	0.0060	0.006			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – January 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 3 – BH2	19/01/2023	31/01/2023	pH	Quarterly	pH	7.45	7.45	7.45
			Electrical Conductivity	Quarterly	µS/cm	516	516	516
			Sodium Absorption Ratio	Quarterly	-	0.26	0.3	0.26
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	278	278	278
			Chloride	Quarterly	mg/L	11	11	11
			Sodium	Quarterly	mg/L	10	10	10
			Nitrogen (total)	Quarterly	mg/L	0.3	0.3	0.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.3	0.3	0.3
			Nitrate	Quarterly	mg/L	0.02	0.02	0.02
			Sulfate	Quarterly	mg/L	20	20	20
			Phosphorus	Quarterly	mg/L	0.07	0.07	0.07
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.010	0.01
			Total Dissolved Solids	Quarterly	mg/L	378	378	378
			Fluoride	Quarterly	mg/L	0.9	0.9	0.9
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.0010	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.0010	0.001
Copper	Quarterly	mg/L	0.001	0.0010	0.001			
Nickel	Quarterly	mg/L	0.001	0.0010	0.001			
Lead	Quarterly	mg/L	0.001	0.0010	0.001			
Zinc	Quarterly	mg/L	0.009	0.0090	0.009			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – January 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 4 – BH3	19/01/2023	31/01/2023	pH	Quarterly	pH	7.86	7.86	7.86
			Electrical Conductivity	Quarterly	µS/cm	415	415.00	415
			Sodium Absorption Ratio	Quarterly	-	0.32	0.32	0.32
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	213	213	213
			Chloride	Quarterly	mg/L	13	13	13
			Sodium	Quarterly	mg/L	11	11	11
			Nitrogen (total)	Quarterly	mg/L	0.6	0.6	0.6
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.5	0.5	0.5
			Nitrate	Quarterly	mg/L	0.06	0.06	0.06
			Sulfate	Quarterly	mg/L	11	11	11
			Phosphorus	Quarterly	mg/L	0.85	1	0.85
			Reactive Phosphorus	Quarterly	mg/L	0.21	0.21	0.21
			Total Dissolved Solids	Quarterly	mg/L	236	236	236
			Fluoride	Quarterly	mg/L	0.7	0.70	0.7
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.003	0.003	0.003
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.001	0.001
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.005	0.005	0.005			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – January 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 5 – BH4	19/01/2023	31/01/2023	pH	Quarterly	pH	7.12	7.12	7.12
			Electrical Conductivity	Quarterly	µS/cm	1460	1460	1460
			Sodium Absorption Ratio	Quarterly	-	1.86	1.86	1.86
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	232	232	232
			Chloride	Quarterly	mg/L	260	260	260
			Sodium	Quarterly	mg/L	100	100	100
			Nitrogen (total)	Quarterly	mg/L	178	178.0	178
			Total Kjeldahl Nitrogen	Quarterly	mg/L	178	178.0	178
			Nitrate	Quarterly	mg/L	0.03	0.030	0.03
			Sulfate	Quarterly	mg/L	205	205	205
			Phosphorus	Quarterly	mg/L	423	423.00	423.00
			Reactive Phosphorus	Quarterly	mg/L	0.06	0.060	0.06
			Total Dissolved Solids	Quarterly	mg/L	1090	1090	1090
			Fluoride	Quarterly	mg/L	0.9	0.9	0.9
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.002	0.002	0.002
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.001	0.001
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.006	0.006	0.006			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – January 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 6 – BH5	19/01/2023	31/01/2023	pH	Quarterly	pH	7.92	7.92	7.92
			Electrical Conductivity	Quarterly	µS/cm	914	914	914
			Sodium Absorption Ratio	Quarterly	-	2.24	2.24	2.24
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	299	299	299
			Chloride	Quarterly	mg/L	118	118	118
			Sodium	Quarterly	mg/L	89	89.00	89
			Nitrogen (total)	Quarterly	mg/L	4.2	4.2	4.2
			Total Kjeldahl Nitrogen	Quarterly	mg/L	4.1	4.1	4.1
			Nitrate	Quarterly	mg/L	0.06	0.06	0.06
			Sulfate	Quarterly	mg/L	42	42	42
			Phosphorus	Quarterly	mg/L	1.38	1.38	1.38
			Reactive Phosphorus	Quarterly	mg/L	0.41	0.41	0.41
			Total Dissolved Solids	Quarterly	mg/L	496	496	496
			Fluoride	Quarterly	mg/L	0.8	0.80	0.8
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.003	0.003	0.003
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.0010	0.001
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.002	0.0020	0.002			
Zinc	Quarterly	mg/L	0.005	0.0050	0.005			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – January 2023

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2023 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 7 – BH6	19/01/2023	31/01/2023	pH	Quarterly	pH	7.73	7.73	7.73
			Electrical Conductivity	Quarterly	µS/cm	582	582	582
			Sodium Absorption Ratio	Quarterly	-	0.47	0.47	0.47
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	302	302	302
			Chloride	Quarterly	mg/L	34	34	34
			Sodium	Quarterly	mg/L	18	18	18
			Nitrogen (total)	Quarterly	mg/L	0.8	0.8	0.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.8	0.8	0.8
			Nitrate	Quarterly	mg/L	0.01	0.01	0.01
			Sulfate	Quarterly	mg/L	1	1	1
			Phosphorus	Quarterly	mg/L	1.1	1.1	1.1
			Reactive Phosphorus	Quarterly	mg/L	0.21	0.21	0.21
			Total Dissolved Solids	Quarterly	mg/L	331	331	331
			Fluoride	Quarterly	mg/L	0.8	0.8	0.8
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.007	0.007	0.007
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.001	0.001
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.005	0.005	0.005			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – October 2022

Published: 07/12/2022
Licensee: BOC LIMITED
EPL No.: 20165

Qualifications related to limits
 Samples taken as per approved methods

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 1 Cooling Tower	28/10/2022	20/08/2022 Biocide & Dosing Chemical results authorised on: 16/11/2022	pH	Quarterly	pH	8.19	8.33	8.45
			Electrical Conductivity	Quarterly	µS/cm	1540	1783	2010
			Sodium Absorption Ratio	Quarterly	-	3.91	9.4	20.3
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	34	96	146
			Chloride	Quarterly	mg/L	345	435.25	488
			Sodium	Quarterly	mg/L	185	263	324
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	2	2	2
			Fluoride	Quarterly	mg/L	0.7	2.05	4.4
			Nitrogen (total)	Quarterly	mg/L	4.7	5.7	8.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.4	2.8	6.1
			Sulfate	Quarterly	mg/L	161	268	369
			Total Dissolved Solids	Quarterly	mg/L	1040	1163	1520
			Phosphorus	Quarterly	mg/L	0.08	0.26	0.61
			Arsenic	Quarterly	mg/L	0.001	0.001	0.002
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.017	0.026	0.037
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
			Lead	Quarterly	mg/L	0.001	0.001	0.001
			Zinc	Quarterly	mg/L	0.005	0.007	0.008
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			
Biocides (active component isothiazoline)	Quarterly	mg/L	<0.05	<0.05	<0.05			
Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1			

Effluent and Groundwater Monitoring Data – October 2022

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 2 – BH1	12/10/2022	20/10/2022	pH	Quarterly	pH	7.6	7.7	7.7
			Electrical Conductivity	Quarterly	µS/cm	376	425	500
			Sodium Absorption Ratio	Quarterly	-	0.26	0.32	0.37
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	188	217	258
			Chloride	Quarterly	mg/L	9	13	18
			Sodium	Quarterly	mg/L	9	11	13
			Nitrogen (total)	Quarterly	mg/L	0.3	1.7	4.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.3	1.7	4.2
			Nitrate	Quarterly	mg/L	0.01	0.0	0.07
			Sulfate	Quarterly	mg/L	11	15	23
			Phosphorus	Quarterly	mg/L	0.19	1.41	3.88
			Reactive Phosphorus	Quarterly	mg/L	0.02	0.02	0.03
			Total Dissolved Solids	Quarterly	mg/L	238	273	351
			Fluoride	Quarterly	mg/L	0.4	0.5	0.6
			Standing Water Level	Quarterly	mg/L	1	1	1.5
			Arsenic	Quarterly	mg/L	0.001	0.0010	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.0010	0.001
			Copper	Quarterly	mg/L	0.002	0.0083	0.022
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
Lead	Quarterly	mg/L	0.001	0.0023	0.004			
Zinc	Quarterly	mg/L	0.006	0.0145	0.024			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – October 2022

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 3 – BH2	12/10/2022	20/10/2022	pH	Quarterly	pH	7.46	7.51	7.62
			Electrical Conductivity	Quarterly	µS/cm	404	434	457
			Sodium Absorption Ratio	Quarterly	-	0.2	0.3	0.34
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	218	228	241
			Chloride	Quarterly	mg/L	9	12	17
			Sodium	Quarterly	mg/L	7	9	11
			Nitrogen (total)	Quarterly	mg/L	0.6	2.2	3.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.4	2.1	3.8
			Nitrate	Quarterly	mg/L	0.01	0.10	0.18
			Sulfate	Quarterly	mg/L	7	11	16
			Phosphorus	Quarterly	mg/L	0.27	0.77	1.43
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.010	0.01
			Total Dissolved Solids	Quarterly	mg/L	253	282	309
			Fluoride	Quarterly	mg/L	0.5	0.6	0.7
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.0010	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.0010	0.001
			Copper	Quarterly	mg/L	0.002	0.0058	0.01
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
Lead	Quarterly	mg/L	0.001	0.0018	0.003			
Zinc	Quarterly	mg/L	0.006	0.0215	0.036			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – October 2022

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 4 – BH3	12/10/2022	20/10/2022	pH	Quarterly	pH	7.37	7.53	7.6
			Electrical Conductivity	Quarterly	µS/cm	401	417.75	436
			Sodium Absorption Ratio	Quarterly	-	0.32	0.36	0.44
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	179	199	215
			Chloride	Quarterly	mg/L	11	15	17
			Sodium	Quarterly	mg/L	10	12	14
			Nitrogen (total)	Quarterly	mg/L	0.6	5.4	13.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.4	5.2	13.6
			Nitrate	Quarterly	mg/L	0.01	0.18	0.41
			Sulfate	Quarterly	mg/L	14	17	23
			Phosphorus	Quarterly	mg/L	0.98	19	72.8
			Reactive Phosphorus	Quarterly	mg/L	0.03	0.05	0.07
			Total Dissolved Solids	Quarterly	mg/L	246	272	293
			Fluoride	Quarterly	mg/L	0.5	0.65	0.8
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.003	0.007
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.002	0.003
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.005	0.014	0.026			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – October 2022

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 5 – BH4	12/10/2022	20/10/2022	pH	Quarterly	pH	7.25	7.47	7.68
			Electrical Conductivity	Quarterly	µS/cm	524	788	988
			Sodium Absorption Ratio	Quarterly	-	0.99	1.47	1.95
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	205	241	269
			Chloride	Quarterly	mg/L	40	86	130
			Sodium	Quarterly	mg/L	35	55	76
			Nitrogen (total)	Quarterly	mg/L	0.4	1.2	3.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.4	1.2	3.3
			Nitrate	Quarterly	mg/L	0.01	0.030	0.06
			Sulfate	Quarterly	mg/L	34	68	104
			Phosphorus	Quarterly	mg/L	0.48	5.49	18.40
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.023	0.05
			Total Dissolved Solids	Quarterly	mg/L	333	491	638
			Fluoride	Quarterly	mg/L	0.7	1.0	1.1
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.002	0.005	0.012
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.002	0.003			
Zinc	Quarterly	mg/L	0.006	0.0195	0.046			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – October 2022

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 6 – BH5	12/10/2022	20/10/2022	pH	Quarterly	pH	7.41	7.65	7.89
			Electrical Conductivity	Quarterly	µS/cm	227	362	668
			Sodium Absorption Ratio	Quarterly	-	0.38	0.56	0.99
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	103	150	252
			Chloride	Quarterly	mg/L	6	21	58
			Sodium	Quarterly	mg/L	10	14.75	28
			Nitrogen (total)	Quarterly	mg/L	0.4	2.05	3.6
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.2	1.175	2.6
			Nitrate	Quarterly	mg/L	0.25	0.59	0.94
			Sulfate	Quarterly	mg/L	9	14	26
			Phosphorus	Quarterly	mg/L	0.07	0.52	0.98
			Reactive Phosphorus	Quarterly	mg/L	0.04	0.1175	0.33
			Total Dissolved Solids	Quarterly	mg/L	150	228.75	414
			Fluoride	Quarterly	mg/L	0.4	0.58	0.8
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.00175	0.003
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.0030	0.006
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.0013	0.002			
Zinc	Quarterly	mg/L	0.005	0.0183	0.032			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – October 2022

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 7 – BH6	12/10/2022	20/10/2022	pH	Quarterly	pH	7.73	7.79	7.89
			Electrical Conductivity	Quarterly	µS/cm	484	545.25	584
			Sodium Absorption Ratio	Quarterly	-	0.42	0.4925	0.56
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	226	260.75	290
			Chloride	Quarterly	mg/L	15	18.25	21
			Sodium	Quarterly	mg/L	16	18	21
			Nitrogen (total)	Quarterly	mg/L	1.1	1.95	2.7
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.7	1.1	2.1
			Nitrate	Quarterly	mg/L	0.02	0.7875	1.29
			Sulfate	Quarterly	mg/L	12	22.25	28
			Phosphorus	Quarterly	mg/L	1.12	2.125	2.81
			Reactive Phosphorus	Quarterly	mg/L	0.13	0.1975	0.28
			Total Dissolved Solids	Quarterly	mg/L	316	344	392
			Fluoride	Quarterly	mg/L	0.6	0.75	0.9
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.004	0.01075	0.018
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.0045	0.013
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.005	0.0155	0.028			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

	Published: 19.09.22								
	Licensee: BOC LIMITED								
	EPL No.: 20165								
	Qualifications related to limits								
	Samples taken as per approved methods								
EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date			
						July 2022 Value	Min Value	Mean Value	Max Value
EPL Point 1 Cooling Tower	28/07/2022 Biocide & Dosing sampled on: 04/07/2022	15/08/2022 Biocide & Dosing Chemical results authorised on: 06/09/2022	pH	Quarterly	pH	8.33	8.19	8.29	8.36
			Electrical conductivity	Quarterly	µS/cm	1,540	1540	1757	2010
			Sodium Absorption Ratio	Quarterly	-	3.91	3.91	9.7	20.3
			Alkalinity as calcium carbonate (hardness)	Quarterly	mg/L	115	34	98	146
			Chloride	Quarterly	mg/L	345	345	431.666667	488
			Sodium	Quarterly	mg/L	185	185	253	324
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	2	2	2	2
			Fluoride	Quarterly	mg/L	4.4	0.7	2.1	4.4
			Nitrogen (total)	Quarterly	mg/L	8.3	4.7	5.96666667	8.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	6.1	1.4	3.1	6.1
			Sulfate	Quarterly	mg/L	309	161	280	369
			Total dissolved solids	Quarterly	mg/L	1,040	1040	1200	1520
			Phosphorus	Quarterly	mg/L	0.61	0.12	0.31	0.61
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001	0.002
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.037	0.022	0.029	0.037
			Nickel	Quarterly	mg/L	0.001	0.001	0.0010	0.001
			Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Zinc	Quarterly	mg/L	0.008	0.005	0.007	0.008
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001			
Biocides (active component isothiazoline)	Quarterly	mg/L	0.05	0.05	0.050	0.050			
Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	0.1	0.1	0.1	0.1			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date			
						July 2022 Value	Min Value	Mean Value	Max Value
EPL Point 2 – BH1	28/07/2022	15/08/2022	pH	Quarterly	pH	7.74	7.6	7.6	7.7
			Conductivity	Quarterly	µS/cm	376	376	422	500
			Sodium Absorption Ratio	Quarterly	-	0.29	0.29	0.34	0.37
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	188	188	220	258
			Chloride	Quarterly	mg/L	12	9	12	14
			Sodium	Quarterly	mg/L	10	10	11	13
			Nitrogen (total)	Quarterly	mg/L	4.3	0.6	2.1	4.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	4.2	0.6	2.1	4.2
			Nitrate	Quarterly	mg/L	0.07	0.01	0.0	0.07
			Sulfate	Quarterly	mg/L	13	11	16	23
			Phosphorus	Quarterly	mg/L	3.88	0.38	1.82	3.88
			Reactive Phosphorus	Quarterly	mg/L	0.02	0.02	0.02	0.03
			Total dissolved solids	Quarterly	mg/L	238	238	281	351
			Fluoride	Quarterly	mg/L	0.6	0.4	0.5	0.6
			Standing Water Level	Quarterly	mg/L		1	1	1.5
			Arsenic	Quarterly	mg/L	0.001	0.001	0.0010	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.0010	0.001
Copper	Quarterly	mg/L	0.002	0.002	0.0100	0.022			
Lead	Quarterly	mg/L	0.001	0.001	0.0010	0.001			
Nickel	Quarterly	mg/L	0.001	0.001	0.0027	0.004			
Zinc	Quarterly	mg/L	0.006	0.006	0.0153	0.024			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date			
						July 2022 Value	Min Value	Mean Value	Max Value
EPL Point 3 – BH2	28/07/2022	15/08/2022	pH	Quarterly	pH	7.62	7.46	7.52	7.62
			Conductivity	Quarterly	µS/cm	404	404	434	457
			Sodium Absorption Ratio	Quarterly	-	0.2	0.2	0.3	0.34
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	218	218	231	241
			Chloride	Quarterly	mg/L	12	9	10	12
			Sodium	Quarterly	mg/L	7	7	9	11
			Nitrogen (total)	Quarterly	mg/L	1.1	1.1	2.7	3.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.9	0.9	2.6	3.8
			Nitrate	Quarterly	mg/L	0.18	0.08	0.13	0.18
			Sulfate	Quarterly	mg/L	7	7	11	16
			Phosphorus	Quarterly	mg/L	0.27	0.27	0.93	1.43
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.01	0.010	0.01
			Total dissolved solids	Quarterly	mg/L	262	262	291	309
			Fluoride	Quarterly	mg/L	0.6	0.6	0.6	0.7
			Standing Water Level	Quarterly	mg/L		1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.001	0.0010	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.0010	0.001
			Copper	Quarterly	mg/L	0.002	0.002	0.0067	0.01
			Lead	Quarterly	mg/L	0.001	0.001	0.0010	0.001
Nickel	Quarterly	mg/L	0.001	0.001	0.0020	0.003			
Zinc	Quarterly	mg/L	0.006	0.006	0.0247	0.036			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date			
						July 2022 Value	Min Value	Mean Value	Max Value
EPL Point 4 – BH3	28/07/2022	15/08/2022	pH	Quarterly	pH	7.6	7.37	7.52	7.6
			Conductivity	Quarterly	µS/cm	404	401	413.67	436
			Sodium Absorption Ratio	Quarterly	-	0.35	0.32	0.37	0.44
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	179	179	201	215
			Chloride	Quarterly	mg/L	16	11	14	16
			Sodium	Quarterly	mg/L	12	10	12	14
			Nitrogen (total)	Quarterly	mg/L	13.9	1.8	7.0	13.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	13.6	1.8	6.7	13.6
			Nitrate	Quarterly	mg/L	0.28	0.01	0.23	0.41
			Sulfate	Quarterly	mg/L	23	14	18	23
			Phosphorus	Quarterly	mg/L	72.8	1.11	25	72.8
			Reactive Phosphorus	Quarterly	mg/L	0.03	0.03	0.04	0.07
			Total dissolved solids	Quarterly	mg/L	259	259	281	293
			Fluoride	Quarterly	mg/L	0.5	0.5	0.63	0.8
			Standing Water Level	Quarterly	mg/L	1	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.001	0.004	0.007
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.001	0.002	0.003
			Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001
Nickel	Quarterly	mg/L	0.001	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.012	0.012	0.017	0.026			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date			
						July 2022 Value	Min Value	Mean Value	Max Value
EPL Point 5 – BH4	28/07/2022	15/08/2022	pH	Quarterly	pH	7.68	7.25	7.45	7.68
			Conductivity	Quarterly	µS/cm	524	524	810	988
			Sodium Absorption Ratio	Quarterly	-	0.99	0.99	1.51	1.95
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	205	205	239	269
			Chloride	Quarterly	mg/L	40	40	97	130
			Sodium	Quarterly	mg/L	35	35	57	76
			Nitrogen (total)	Quarterly	mg/L	0.6	0.4	1.5	3.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.6	0.4	1.4	3.3
			Nitrate	Quarterly	mg/L	0.04	0.01	0.037	0.06
			Sulfate	Quarterly	mg/L	34	34	71	104
			Phosphorus	Quarterly	mg/L	0.57	0.57	7.16	18.40
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.01	0.023	0.05
			Total dissolved solids	Quarterly	mg/L	333	333	517	638
			Fluoride	Quarterly	mg/L	0.7	0.7	0.9	1.1
			Standing Water Level	Quarterly	mg/L	1	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.002	0.002	0.006	0.012
			Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001
Nickel	Quarterly	mg/L	0.001	0.001	0.002	0.003			
Zinc	Quarterly	mg/L	0.01	0.01	0.024	0.046			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date			
						July 2022 Value	Min Value	Mean Value	Max Value
EPL Point 6 – BH5	28/07/2022	15/08/2022	pH	Quarterly	pH		7.41	7.69	7.89
			Electrical Conductivity	Quarterly	µS/cm		227	388	668
			Sodium Absorption Ratio	Quarterly	-		0.41	0.62	0.99
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L		103	160	252
			Chloride	Quarterly	mg/L		6	25	58
			Sodium	Quarterly	mg/L		10	16.33	28
			Nitrogen (total)	Quarterly	mg/L		0.4	1.9	3.6
			Total Kjeldahl Nitrogen	Quarterly	mg/L		0.2	1.3	2.6
			Nitrate	Quarterly	mg/L		0.25	0.59	0.94
			Sulfate	Quarterly	mg/L		9	15	26
			Phosphorus	Quarterly	mg/L		0.07	0.57	0.98
			Reactive Phosphorus	Quarterly	mg/L		0.04	0.14	0.33
			Total Dissolved Solids	Quarterly	mg/L		150	248	414
			Fluoride	Quarterly	mg/L		0.5	0.63	0.8
			Standing Water Level	Quarterly	mg/L		1	1	1
			Arsenic	Quarterly	mg/L		0.001	0.002	0.003
			Cadmium	Quarterly	mg/L		0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L		0.001	0.001	0.001
			Copper	Quarterly	mg/L		0.001	0.0037	0.006
			Nickel	Quarterly	mg/L		0.001	0.001	0.001
Lead	Quarterly	mg/L		0.001	0.0013	0.002			
Zinc	Quarterly	mg/L		0.005	0.0223	0.032			
Mercury	Quarterly	mg/L		0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date			
						July 2022 Value	Min Value	Mean Value	Max Value
EPL Point 7 – BH6	28/07/2022	15/08/2022	pH	Quarterly	pH	7.8	7.74	7.81	7.89
			Conductivity	Quarterly	µS/cm	484	484	534.6667	584
			Sodium Absorption Ratio	Quarterly	-	0.42	0.42	0.47	0.54
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	226	226	257	290
			Chloride	Quarterly	mg/L	15	15	18	21
			Sodium	Quarterly	mg/L	16	16	17	19
			Nitrogen (total)	Quarterly	mg/L	2	2	2.233333	2.7
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.7	0.7	1.166667	2.1
			Nitrate	Quarterly	mg/L	1.26	0.58	1.043333	1.29
			Sulfate	Quarterly	mg/L	28	12	21.33333	28
			Phosphorus	Quarterly	mg/L	1.12	1.12	2.12	2.81
			Reactive Phosphorus	Quarterly	mg/L	0.13	0.13	0.216667	0.28
			Total dissolved solids	Quarterly	mg/L	316	316	346.6667	392
			Fluoride	Quarterly	mg/L	0.6	0.6	0.766667	0.9
			Standing Water Level	Quarterly	mg/L		1	1	1
			Arsenic	Quarterly	mg/L	0.004	0.004	0.011667	0.018
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.001	0.005667	0.013
			Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001
Nickel	Quarterly	mg/L	0.001	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.005	0.005	0.019	0.028			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001			

Soil Monitoring Data January 2022

EPL Point 8

Published: 10.03.2022 Licensee: BOC Limited Kooragang EPL no.: 20165								
EPA Point ID	Date of Sampling	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required by EPL	Units of Measure	January 2022		
						Min Value	Mean Value	Max Value
8 – Surface	25/01/2022	28/02/2022	pH	Yearly	pH Unit	6.6	6.75	6.9
			Bray Phosphorus *	Yearly	mg/kg	13	13.7	14.4
			Colwell Phosphorus **	Yearly	mg/kg	20	36.5	53
			Fluoride	Yearly	mg/kg	110	110	110
			Chloride	Yearly	mg/kg	20	25	30
			Conductivity	Yearly	µS/cm	120	176.5	233
			Exchangeable Calcium	Yearly	meq/100g	5.7	6.95	8.2
			Exchangeable Magnesium	Yearly	meq/100g	0.3	0.35	0.4
			Exchangeable Potassium	Yearly	meq/100g	0.1	0.15	0.2
			Exchangeable Sodium	Yearly	meq/100g	0.1	0.1	0.1
			Cation Exchange Capacity	Yearly	meq/100g	6.2	7.5	8.8
			Moisture	Yearly	%	1.4	1.55	1.7
			Nitrate	Every 3 years	mg/kg	0.1	0.2	0.3
			Nitrogen (total)	Every 3 years	mg/kg	1690	1715	1740
			Nitrogen Oxides	Every 3 years	mg/kg	0.5	0.65	0.8
			Phosphorus (total)	Every 3 years	mg/kg	234	239	244
Phosphorus sorption capacity	Every 3 years	mg/kg	<250	324.5	399			
Total Kjeldahl Nitrogen	Every 3 years	mg/kg	1690	1715	1740			

Published: 10.03.2022 Licensee: BOC Limited Kooragang EPL no.: 20165								
EPA Point ID	Date of Sampling	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required by EPL	Units of Measure	January 2022		
						Min Value	Mean Value	Max Value
8 – Sub-surface	25/01/2022	28/02/2022	pH	Yearly	pH Unit	7.5	7.6	7.7
			Bray Phosphorus *	Yearly	mg/kg	8	11	14
			Colwell Phosphorus **	Yearly	mg/kg	6	12	18
			Fluoride	Yearly	mg/kg	50	65	80
			Chloride	Yearly	mg/kg	<10	<10	<10
			Conductivity	Yearly	µS/cm	74	77	80
			Exchangeable Calcium	Yearly	meq/100g	1.4	1.45	1.5
			Exchangeable Magnesium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Potassium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Sodium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Cation Exchange Capacity	Yearly	meq/100g	1.4	1.45	1.5
			Moisture	Yearly	%	<1.0	1.4	1.8
			Nitrate	Every 3 years	mg/kg	0.7	0.75	0.8
			Nitrogen (total)	Every 3 years	mg/kg	460	570	680
			Nitrogen Oxides	Every 3 years	mg/kg	0.7	1.5	2.3
			Phosphorus (total)	Every 3 years	mg/kg	141	154.5	168
			Phosphorus sorption capacity	Every 3 years	mg/kg	332	394	456
Total Kjeldahl Nitrogen	Every 3 years	mg/kg	460	570	680			

Soil Monitoring Data January 2021

EPL Point 8

Published: 1 March 2021 Licensee: BOC Limited Kooragang EPL no.: 20165								
EPA Point ID	Date of Sampling	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required by EPL	Units of Measure	January 2021		
						Min Value	Mean Value	Max Value
8 – Surface	21/01/2021	15/02/2021	pH	Yearly	pH Unit	8	8.05	8.1
			Bray Phosphorus *	Yearly	mg/kg	10.3	10.35	10.4
			Collwell Phosphorus **	Yearly	mg/kg	<5	5.5	6
			Fluoride	Yearly	mg/kg	<1	1	1
			Chloride	Yearly	mg/kg	<10	<10	<10
			Conductivity	Yearly	µS/cm	74	75.5	77
			Exchangeable Calcium	Yearly	meq/100g	1.2	1.5	1.8
			Exchangeable Magnesium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Potassium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Sodium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Cation Exchange Capacity	Yearly	meq/100g	1.2	1.5	1.8
			Moisture	Yearly	%	1.1	1.4	1.7
			Nitrate	Every 3 years	mg/kg	0.2	0.35	0.5
			Nitrogen (total)	Every 3 years	mg/kg	280	330	380
			Nitrogen Oxides	Every 3 years	mg/kg	0.2	0.35	0.5
			Phosphorus (total)	Every 3 years	mg/kg	97	105	97
			Phosphorus sorption capacity	Every 3 years	mg/kg	<250	<250	<250
Total Kjeldahl Nitrogen	Every 3 years	mg/kg	280	330	380			

Published: 1 March 2021 Licensee: BOC Limited Kooragang EPL no.: 20165								
EPA Point ID	Date of Sampling	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required by EPL	Units of Measure	January 2021		
						Min Value	Mean Value	Max Value
8 – Sub-surface	21/01/2021	15/02/2021	pH	Yearly	pH Unit	7.9	8	8.1
			Bray Phosphorus *	Yearly	mg/kg	9.8	10.2	10.6
			Collwell Phosphorus **	Yearly	mg/kg	<5	6.5	8
			Fluoride	Yearly	mg/kg	<1	<1	<1
			Chloride	Yearly	mg/kg	<10	<10	<10
			Conductivity	Yearly	µS/cm	68	81	94
			Exchangeable Calcium	Yearly	meq/100g	1.2	1.35	1.5
			Exchangeable Magnesium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Potassium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Sodium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Cation Exchange Capacity	Yearly	meq/100g	1.2	1.35	1.5
			Moisture	Yearly	%	1.6	1.95	2.3
			Nitrate	Every 3 years	mg/kg	0.3	0.5	0.7
			Nitrogen (total)	Every 3 years	mg/kg	280	290	300
			Nitrogen Oxides	Every 3 years	mg/kg	0.3	0.5	0.7
			Phosphorus (total)	Every 3 years	mg/kg	86	90.5	95
Phosphorus sorption capacity	Every 3 years	mg/kg	<250	<250	<250			
Total Kjeldahl Nitrogen	Every 3 years	mg/kg	280	290	300			

Soil Monitoring Data January 2020

EPL Point 8

Published: 17 February 2020 Licensee: BOC Limited Kooragang EPL no.: 20165								
EPA Point ID	Date of Sampling	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required by EPL	Units of Measure	January 2020		
						Min Value	Mean Value	Max Value
8 - Surface	29/01/2020	14/02/2020	pH	Yearly	pH Unit	7.2	7.5	7.7
			Bray Phosphorus *	Yearly	mg/kg	4.8	6.4	7.9
			Collwell Phosphorus **	Yearly	mg/kg	14	14	14
			Fluoride	Yearly	mg/kg	<1	<1	<1
			Chloride	Yearly	mg/kg	10	25	40
			Conductivity	Yearly	µS/cm	76	88	99
			Exchangeable Calcium	Yearly	meq/100g	3.2	4.7	6.2
			Exchangeable Magnesium	Yearly	meq/100g	<0.2	0.3	0.4
			Exchangeable Potassium	Yearly	meq/100g	<0.2	0.1	0.2
			Exchangeable Sodium	Yearly	meq/100g	<0.1	<0.1	<0.2
			Cation Exchange Capacity	Yearly	meq/100g	3.2	5.0	6.8
			Moisture	Yearly	%	4.6	6.3	8.0
8 – Sub-surface	29/01/2020	14/02/2020	pH	Yearly	pH Unit	8.2	8.2	8.2
			Bray Phosphorus *	Yearly	mg/kg	3.7	3.9	4
			Collwell Phosphorus **	Yearly	mg/kg	<5	4	6
			Fluoride	Yearly	mg/kg	<1	<1	<1
			Chloride	Yearly	mg/kg	<10	23	40
			Conductivity	Yearly	µS/cm	56	69	82
			Exchangeable Calcium	Yearly	meq/100g	1.6	1.6	1.6
			Exchangeable Magnesium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Potassium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Sodium	Yearly	meq/100g	0.2	0.2	0.2
			Cation Exchange Capacity	Yearly	meq/100g	1.6	1.6	1.6
			Moisture	Yearly	%	2.1	2.6	3.1

Soil Monitoring Data January 2019

Published: 7 February 2019 Licensee: BOC Limited Kooragang EPL no.: 20165								
EPA Point ID	Date of Sampling	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required by EPL	Units of Measure	January 2019		
						Min Value	Mean Value	Max Value
8 - Surface	10/01/2019	06/02/2019	pH	Yearly	pH Unit	7.8	7.9	7.9
			Bray Phosphorus *	Yearly	mg/kg	0.5	1.2	1.9
			Collwell Phosphorus **	Yearly	mg/kg	14	17	19
			Fluoride	Yearly	mg/kg	<40	<40	<40
			Chloride	Yearly	mg/kg	20	20	20
			Conductivity	Yearly	µS/cm	101	103	105
			Exchangeable Calcium	Yearly	meq/100g	2	2.2	2.3
			Exchangeable Magnesium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Potassium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Sodium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Cation Exchange Capacity	Yearly	meq/100g	2	2.3	2.5
			Moisture	Yearly	%	1.4	1.5	1.5
8 – Sub-surface	10/01/2019	06/02/2019	pH	Yearly	pH Unit	8.4	8.5	8.5
			Bray Phosphorus *	Yearly	mg/kg	1.1	1.2	1.3
			Collwell Phosphorus **	Yearly	mg/kg	9	9.5	10
			Fluoride	Yearly	mg/kg	<40	<40	<40
			Chloride	Yearly	mg/kg	<10	13	20
			Conductivity	Yearly	µS/cm	58	59	60
			Exchangeable Calcium	Yearly	meq/100g	1.1	1.3	1.4
			Exchangeable Magnesium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Potassium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Sodium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Cation Exchange Capacity	Yearly	meq/100g	1.1	1.3	1.4
			Moisture	Yearly	%	0.5	0.6	0.7

Effluent and Groundwater Monitoring Data – April 2022

Published: 6 June 2022 Licensee: BOC LIMITED EPL No.: 20165								
Qualifications related to limits Samples taken as per approved methods								
EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 1 Cooling Tower	5/04/2022	12/04/2022 Biocide & Dosing Chemical results authorised on: TBA	pH	Quarterly	pH	8.19	8.28	8.36
			Electrical Conductivity	Quarterly	µS/cm	1720	1865	2010
			Sodium Absorption Ratio	Quarterly	-	4.77	12.5	20.3
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	34	90	146
			Chloride	Quarterly	mg/L	462	475	488
			Sodium	Quarterly	mg/L	251	288	324
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	2	2	2
			Fluoride	Quarterly	mg/L	0.7	0.95	1.2
			Nitrogen (total)	Quarterly	mg/L	4.7	4.8	4.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.4	1.6	1.8
			Sulfate	Quarterly	mg/L	161	265	369
			Total Dissolved Solids	Quarterly	mg/L	1040	1280	1520
			Phosphorus	Quarterly	mg/L	0.12	0.17	0.21
			Arsenic	Quarterly	mg/L	0.001	0.002	0.002
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.022	0.025	0.028
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
			Lead	Quarterly	mg/L	0.001	0.001	0.001
			Zinc	Quarterly	mg/L	0.005	0.007	0.008
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001
			Biocides (active component isothiazoline)	Quarterly	mg/L	<0.05	<0.05	<0.05
			Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 2 – BH1	5/04/2022	12/04/2022	pH	Quarterly	pH	7.6	7.6	7.6
			Electrical Conductivity	Quarterly	µS/cm	390	445	500
			Sodium Absorption Ratio	Quarterly	-	0.36	0.37	0.37
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	215	237	258
			Chloride	Quarterly	mg/L	9	12	14
			Sodium	Quarterly	mg/L	11	12	13
			Nitrogen (total)	Quarterly	mg/L	0.6	1.1	1.5
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.6	1.1	1.5
			Nitrate	Quarterly	mg/L	0.01	0.0	0.02
			Sulfate	Quarterly	mg/L	11	17	23
			Phosphorus	Quarterly	mg/L	0.38	0.79	1.2
			Reactive Phosphorus	Quarterly	mg/L	0.02	0.03	0.03
			Total Dissolved Solids	Quarterly	mg/L	255	303	351
			Fluoride	Quarterly	mg/L	0.4	0.5	0.6
			Standing Water Level	Quarterly	mg/L	1	1	1.5
			Arsenic	Quarterly	mg/L	0.001	0.0010	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.0010	0.001
			Copper	Quarterly	mg/L	0.006	0.0140	0.022
			Nickel	Quarterly	mg/L	0.003	0.0035	0.004
			Lead	Quarterly	mg/L	0.001	0.0010	0.001
			Zinc	Quarterly	mg/L	0.016	0.0200	0.024
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 3 – BH2	5/04/2022	12/04/2022	pH	Quarterly	pH	7.46	7.47	7.47
			Electrical Conductivity	Quarterly	µS/cm	442	450	457
			Sodium Absorption Ratio	Quarterly	-	0.27	0.3	0.34
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	233	237	241
			Chloride	Quarterly	mg/L	9	10	10
			Sodium	Quarterly	mg/L	9	10	11
			Nitrogen (total)	Quarterly	mg/L	3.2	3.6	3.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	3.1	3.5	3.8
			Nitrate	Quarterly	mg/L	0.08	0.11	0.13
			Sulfate	Quarterly	mg/L	11	14	16
			Phosphorus	Quarterly	mg/L	1.08	1.26	1.43
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.010	0.01
			Total Dissolved Solids	Quarterly	mg/L	302	306	309
			Fluoride	Quarterly	mg/L	0.6	0.7	0.7
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.0010	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.0010	0.001
			Copper	Quarterly	mg/L	0.008	0.0090	0.01
			Nickel	Quarterly	mg/L	0.002	0.0025	0.003
Lead	Quarterly	mg/L	0.001	0.0010	0.001			
Zinc	Quarterly	mg/L	0.032	0.0340	0.036			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 4 – BH3	5/04/2022	12/04/2022	pH	Quarterly	pH	7.37	7.48	7.59
			Electrical Conductivity	Quarterly	µS/cm	401	418.5	436
			Sodium Absorption Ratio	Quarterly	-	0.32	0.38	0.44
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	209	212	215
			Chloride	Quarterly	mg/L	11	13	14
			Sodium	Quarterly	mg/L	10	12	14
			Nitrogen (total)	Quarterly	mg/L	1.8	3.5	5.2
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.8	3.3	4.8
			Nitrate	Quarterly	mg/L	0.01	0.21	0.41
			Sulfate	Quarterly	mg/L	14	15	16
			Phosphorus	Quarterly	mg/L	1.11	2	2.19
			Reactive Phosphorus	Quarterly	mg/L	0.03	0.05	0.07
			Total Dissolved Solids	Quarterly	mg/L	290	292	293
			Fluoride	Quarterly	mg/L	0.6	0.70	0.8
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.003	0.005	0.007
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.002	0.003	0.003
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.013	0.020	0.026			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 5 – BH4	5/04/2022	12/04/2022	pH	Quarterly	pH	7.25	7.34	7.42
			Electrical Conductivity	Quarterly	µS/cm	918	953	988
			Sodium Absorption Ratio	Quarterly	-	1.58	1.77	1.95
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	243	256	269
			Chloride	Quarterly	mg/L	120	125	130
			Sodium	Quarterly	mg/L	60	68	76
			Nitrogen (total)	Quarterly	mg/L	0.4	1.9	3.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.4	1.9	3.3
			Nitrate	Quarterly	mg/L	0.01	0.035	0.06
			Sulfate	Quarterly	mg/L	76	90	104
			Phosphorus	Quarterly	mg/L	2.52	10.46	18.40
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.030	0.05
			Total Dissolved Solids	Quarterly	mg/L	580	609	638
			Fluoride	Quarterly	mg/L	0.9	1.0	1.1
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.004	0.008	0.012
			Nickel	Quarterly	mg/L	0.001	0.002	0.003
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.016	0.031	0.046			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 6 – BH5	5/04/2022	12/04/2022	pH	Quarterly	pH	7.41	7.65	7.89
			Electrical Conductivity	Quarterly	µS/cm	268	468	668
			Sodium Absorption Ratio	Quarterly	-	0.46	0.73	0.99
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	124	188	252
			Chloride	Quarterly	mg/L	6	32	58
			Sodium	Quarterly	mg/L	11	19.5	28
			Nitrogen (total)	Quarterly	mg/L	1.7	2.65	3.6
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.1	1.85	2.6
			Nitrate	Quarterly	mg/L	0.57	0.755	0.94
			Sulfate	Quarterly	mg/L	10	18	26
			Phosphorus	Quarterly	mg/L	0.65	0.815	0.98
			Reactive Phosphorus	Quarterly	mg/L	0.04	0.185	0.33
			Total Dissolved Solids	Quarterly	mg/L	180	297	414
			Fluoride	Quarterly	mg/L	0.6	0.7	0.8
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.002	0.003
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.004	0.005	0.006
			Nickel	Quarterly	mg/L	0.001	0.0015	0.002
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.03	0.031	0.032			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 7 – BH6	5/04/2022	12/04/2022	pH	Quarterly	pH	7.74	7.815	7.89
			Electrical Conductivity	Quarterly	µS/cm	536	560	584
			Sodium Absorption Ratio	Quarterly	-	0.45	0.495	0.54
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	255	272.5	290
			Chloride	Quarterly	mg/L	18	19.5	21
			Sodium	Quarterly	mg/L	16	17.5	19
			Nitrogen (total)	Quarterly	mg/L	2	2.35	2.7
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.7	1.4	2.1
			Nitrate	Quarterly	mg/L	0.58	0.935	1.29
			Sulfate	Quarterly	mg/L	12	18	24
			Phosphorus	Quarterly	mg/L	2.43	2.62	2.81
			Reactive Phosphorus	Quarterly	mg/L	0.24	0.26	0.28
			Total Dissolved Solids	Quarterly	mg/L	332	362	392
			Fluoride	Quarterly	mg/L	0.8	0.85	0.9
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.013	0.0155	0.018
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.003	0.008	0.013
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.024	0.026	0.028			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – January 2022

Published: 10.03.2022 Licensee: BOC LIMITED EPL No.: 20165								
Qualifications related to limits Samples taken as per approved methods								
EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 1 Cooling Tower	25/01/2022	01/02/2022 Biocide & Dosing Chemical results authorised on: 16/02/2022	pH	Quarterly	pH	8.36	8.36	8.36
			Electrical Conductivity	Quarterly	µS/cm	1720	1720	1720
			Sodium Absorption Ratio	Quarterly	-	20.3	20.3	20.3
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	34	34	34
			Chloride	Quarterly	mg/L	488	488	488
			Sodium	Quarterly	mg/L	324	324	324
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	2	2	2
			Fluoride	Quarterly	mg/L	0.7	0.7	0.7
			Nitrogen (total)	Quarterly	mg/L	4.9	4.9	4.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.8	1.8	1.8
			Sulfate	Quarterly	mg/L	161	161	161
			Total Dissolved Solids	Quarterly	mg/L	1040	1040	1040
			Phosphorus	Quarterly	mg/L	0.12	0.12	0.12
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.022	0.022	0.022
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
			Lead	Quarterly	mg/L	0.001	0.001	0.001
			Zinc	Quarterly	mg/L	0.008	0.008	0.008
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001
			Biocides (active component isothiazoline)	Quarterly	mg/L	<0.05	<0.05	<0.05
			Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 2 – BH1	19/01/2022	25/01/2022	pH	Quarterly	pH	7.6	7.6	7.6
			Electrical Conductivity	Quarterly	µS/cm	500	500	500
			Sodium Absorption Ratio	Quarterly	-	0.37	0.37	0.37
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	258	258	258
			Chloride	Quarterly	mg/L	14	14	14
			Sodium	Quarterly	mg/L	13	13	13
			Nitrogen (total)	Quarterly	mg/L	1.5	1.5	1.5
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.5	1.5	1.5
			Nitrate	Quarterly	mg/L	0.02	0.0	0.02
			Sulfate	Quarterly	mg/L	23	23	23
			Phosphorus	Quarterly	mg/L	1.2	1.20	1.2
			Reactive Phosphorus	Quarterly	mg/L	0.03	0.03	0.03
			Total Dissolved Solids	Quarterly	mg/L	351	351	351
			Fluoride	Quarterly	mg/L	0.4	0.4	0.4
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.0010	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.0010	0.001
			Copper	Quarterly	mg/L	0.006	0.0060	0.006
			Nickel	Quarterly	mg/L	0.003	0.0030	0.003
			Lead	Quarterly	mg/L	0.001	0.0010	0.001
			Zinc	Quarterly	mg/L	0.016	0.0160	0.016
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 3 – BH2	19/01/2022	25/01/2022	pH	Quarterly	pH	7.46	7.46	7.46
			Electrical Conductivity	Quarterly	µS/cm	442	442	442
			Sodium Absorption Ratio	Quarterly	-	0.34	0.3	0.34
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	241	241	241
			Chloride	Quarterly	mg/L	9	9	9
			Sodium	Quarterly	mg/L	11	11	11
			Nitrogen (total)	Quarterly	mg/L	3.2	3.2	3.2
			Total Kjeldahl Nitrogen	Quarterly	mg/L	3.1	3.1	3.1
			Nitrate	Quarterly	mg/L	0.08	0.08	0.08
			Sulfate	Quarterly	mg/L	16	16	16
			Phosphorus	Quarterly	mg/L	1.08	1.08	1.08
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.010	0.01
			Total Dissolved Solids	Quarterly	mg/L	309	309	309
			Fluoride	Quarterly	mg/L	0.7	0.7	0.7
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.0010	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.0010	0.001
			Copper	Quarterly	mg/L	0.008	0.0080	0.008
			Nickel	Quarterly	mg/L	0.003	0.0030	0.003
Lead	Quarterly	mg/L	0.001	0.0010	0.001			
Zinc	Quarterly	mg/L	0.036	0.0360	0.036			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 4 – BH3	19/01/2022	25/01/2022	pH	Quarterly	pH	7.59	7.59	7.59
			Electrical Conductivity	Quarterly	µS/cm	401	401	401
			Sodium Absorption Ratio	Quarterly	-	0.32	0.32	0.32
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	215	215	215
			Chloride	Quarterly	mg/L	11	11	11
			Sodium	Quarterly	mg/L	10	10	10
			Nitrogen (total)	Quarterly	mg/L	1.8	1.8	1.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.8	1.8	1.8
			Nitrate	Quarterly	mg/L	0.01	0.01	0.01
			Sulfate	Quarterly	mg/L	16	16	16
			Phosphorus	Quarterly	mg/L	1.11	1	1.11
			Reactive Phosphorus	Quarterly	mg/L	0.07	0.07	0.07
			Total Dissolved Solids	Quarterly	mg/L	293	293	293
			Fluoride	Quarterly	mg/L	0.6	0.60	0.6
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.003	0.003	0.003
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.003	0.003	0.003
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.013	0.013	0.013			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 5 – BH4	19/01/2022	25/01/2022	pH	Quarterly	pH	7.25	7.25	7.25
			Electrical Conductivity	Quarterly	µS/cm	988	988	988
			Sodium Absorption Ratio	Quarterly	-	1.95	1.95	1.95
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	269	269	269
			Chloride	Quarterly	mg/L	130	130	130
			Sodium	Quarterly	mg/L	76	76	76
			Nitrogen (total)	Quarterly	mg/L	3.4	3.4	3.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	3.3	3.3	3.3
			Nitrate	Quarterly	mg/L	0.06	0.060	0.06
			Sulfate	Quarterly	mg/L	104	104	104
			Phosphorus	Quarterly	mg/L	18.4	18.40	18.40
			Reactive Phosphorus	Quarterly	mg/L	0.05	0.050	0.05
			Total Dissolved Solids	Quarterly	mg/L	638	638	638
			Fluoride	Quarterly	mg/L	0.9	0.9	0.9
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.004	0.004	0.004
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.016	0.016	0.016			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 6 – BH5	19/01/2022	25/01/2022	pH	Quarterly	pH	7.89	7.89	7.89
			Electrical Conductivity	Quarterly	µS/cm	668	668	668
			Sodium Absorption Ratio	Quarterly	-	0.99	0.99	0.99
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	252	252	252
			Chloride	Quarterly	mg/L	58	58	58
			Sodium	Quarterly	mg/L	28	28	28
			Nitrogen (total)	Quarterly	mg/L	1.7	1.7	1.7
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.1	1.1	1.1
			Nitrate	Quarterly	mg/L	0.57	0.57	0.57
			Sulfate	Quarterly	mg/L	26	26	26
			Phosphorus	Quarterly	mg/L	0.65	0.65	0.65
			Reactive Phosphorus	Quarterly	mg/L	0.33	0.33	0.33
			Total Dissolved Solids	Quarterly	mg/L	414	414	414
			Fluoride	Quarterly	mg/L	0.8	0.8	0.8
			Standing Water Level	Quarterly	mg/L	0	#DIV/0!	0
			Arsenic	Quarterly	mg/L	0.003	0.003	0.003
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.006	0.006	0.006
			Nickel	Quarterly	mg/L	0.002	0.002	0.002
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.032	0.032	0.032			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2022 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 7 – BH6	19/01/2022	25/01/2022	pH	Quarterly	pH	7.89	7.89	7.89
			Electrical Conductivity	Quarterly	µS/cm	584	584	584
			Sodium Absorption Ratio	Quarterly	-	0.54	0.54	0.54
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	290	290	290
			Chloride	Quarterly	mg/L	21	21	21
			Sodium	Quarterly	mg/L	19	19	19
			Nitrogen (total)	Quarterly	mg/L	2.7	2.7	2.7
			Total Kjeldahl Nitrogen	Quarterly	mg/L	2.1	2.1	2.1
			Nitrate	Quarterly	mg/L	0.58	0.58	0.58
			Sulfate	Quarterly	mg/L	24	24	24
			Phosphorus	Quarterly	mg/L	2.43	2.43	2.43
			Reactive Phosphorus	Quarterly	mg/L	0.24	0.24	0.24
			Total Dissolved Solids	Quarterly	mg/L	392	392	392
			Fluoride	Quarterly	mg/L	0.9	0.9	0.9
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.018	0.018	0.018
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.013	0.013	0.013
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.028	0.028	0.028			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – October 2021

Published: Wednesday, 17 November 2022 Licensee: BOC LIMITED EPL No.: 20165								
Qualifications related to limits Samples taken as per approved methods								
EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 1 Cooling Tower	7/10/2021	14/10/2021 Biocide & Dosing Chemical results authorised on: 9/11/2021	pH	Quarterly	pH	6.84	7.99	8.4
			Electrical Conductivity	Quarterly	µS/cm	1770	1990	2210
			Sodium Absorption Ratio	Quarterly	-	4.63	9.0	14.5
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	44	95	156
			Chloride	Quarterly	mg/L	408	458.25	481
			Sodium	Quarterly	mg/L	246	283	327
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	2	2.33	3
			Fluoride	Quarterly	mg/L	0.8	1.6	2
			Nitrogen (total)	Quarterly	mg/L	3.3	4.575	5.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.2	1.4	1.6
			Sulfate	Quarterly	mg/L	173	269	356
			Total Dissolved Solids	Quarterly	mg/L	1040	1250	1460
			Phosphorus	Quarterly	mg/L	0.11	0.22	0.27
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.002	0.002
			Copper	Quarterly	mg/L	0.023	0.028	0.033
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
			Lead	Quarterly	mg/L	0.001	0.001	0.001
			Zinc	Quarterly	mg/L	0.006	0.011	0.021
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			
Biocides (active component isothiazoline)	Quarterly	mg/L	<0.05	<0.05	<0.05			
Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 2 – BH1	7/10/2021	13/10/2021	pH	Quarterly	pH	7.35	7.6	7.9
			Electrical Conductivity	Quarterly	µS/cm	448	508	571
			Sodium Absorption Ratio	Quarterly	-	0.35	0.76	1.79
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	203	259	341
			Chloride	Quarterly	mg/L	13	16	18
			Sodium	Quarterly	mg/L	12	31	76
			Nitrogen (total)	Quarterly	mg/L	0.9	2.7	4.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.9	2.7	4.4
			Nitrate	Quarterly	mg/L	0.02	0.1	0.3
			Sulfate	Quarterly	mg/L	14	19	23
			Phosphorus	Quarterly	mg/L	0.28	2.25	3.84
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.02	0.03
			Total Dissolved Solids	Quarterly	mg/L	256	322	369
			Fluoride	Quarterly	mg/L	0.4	0.5	0.5
			Standing Water Level	Quarterly	mg/L	0.5	1	2
			Arsenic	Quarterly	mg/L	0.001	0.0065	0.021
			Cadmium	Quarterly	mg/L	0.0001	0.0005	0.0013
			Chromium	Quarterly	mg/L	0.001	0.0060	0.016
			Copper	Quarterly	mg/L	0.002	0.0128	0.038
			Nickel	Quarterly	mg/L	0.001	0.0088	0.03
Lead	Quarterly	mg/L	0.001	0.0245	0.094			
Zinc	Quarterly	mg/L	0.018	0.2660	0.998			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 3 – BH2	7/10/2021	13/10/2021	pH	Quarterly	pH	7.36	7.51	7.66
			Electrical Conductivity	Quarterly	µS/cm	436	474	502
			Sodium Absorption Ratio	Quarterly	-	0.28	0.3	0.36
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	232	248	265
			Chloride	Quarterly	mg/L	12	14	16
			Sodium	Quarterly	mg/L	10	12	13
			Nitrogen (total)	Quarterly	mg/L	1.8	3.8	6
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.6	3.6	5.8
			Nitrate	Quarterly	mg/L	0.09	0.13	0.17
			Sulfate	Quarterly	mg/L	11	16	22
			Phosphorus	Quarterly	mg/L	0.27	1.99	4.16
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.010	0.01
			Total Dissolved Solids	Quarterly	mg/L	280	292	310
			Fluoride	Quarterly	mg/L	0.5	0.7	0.8
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.0015	0.002
			Cadmium	Quarterly	mg/L	0.0001	0.0002	0.0003
			Chromium	Quarterly	mg/L	0.001	0.0015	0.003
			Copper	Quarterly	mg/L	0.003	0.0040	0.006
			Nickel	Quarterly	mg/L	0.001	0.0030	0.007
Lead	Quarterly	mg/L	0.001	0.0048	0.016			
Zinc	Quarterly	mg/L	0.006	0.0388	0.119			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 4 – BH3	7/10/2021	13/10/2021	pH	Quarterly	pH	7.33	7.5725	7.83
			Electrical Conductivity	Quarterly	µS/cm	440	487	561
			Sodium Absorption Ratio	Quarterly	-	0.37	0.42	0.52
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	204	223	247
			Chloride	Quarterly	mg/L	11	16	20
			Sodium	Quarterly	mg/L	13	15	19
			Nitrogen (total)	Quarterly	mg/L	1	4.1	10
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.9	2.2	3.2
			Nitrate	Quarterly	mg/L	0.04	1.86	6.3
			Sulfate	Quarterly	mg/L	16	22	32
			Phosphorus	Quarterly	mg/L	1	2	1.9
			Reactive Phosphorus	Quarterly	mg/L	0.02	0.08	0.16
			Total Dissolved Solids	Quarterly	mg/L	286	312	346
			Fluoride	Quarterly	mg/L	0.5	0.65	0.8
			Standing Water Level	Quarterly	mg/L	1	1.25	2
			Arsenic	Quarterly	mg/L	0.002	0.004	0.007
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0002
			Chromium	Quarterly	mg/L	0.001	0.002	0.004
			Copper	Quarterly	mg/L	0.002	0.008	0.018
			Nickel	Quarterly	mg/L	0.001	0.003	0.005
Lead	Quarterly	mg/L	0.001	0.003	0.006			
Zinc	Quarterly	mg/L	0.01	0.024	0.05			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 5 – BH4	7/10/2021	13/10/2021	pH	Quarterly	pH	7.31	7.38	7.45
			Electrical Conductivity	Quarterly	µS/cm	604	996	1430
			Sodium Absorption Ratio	Quarterly	-	0.28	1.56	2.77
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	239	306	486
			Chloride	Quarterly	mg/L	41	139	250
			Sodium	Quarterly	mg/L	10	66	108
			Nitrogen (total)	Quarterly	mg/L	1	2.7	5.7
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1	2.7	5.6
			Nitrate	Quarterly	mg/L	0.02	0.055	0.12
			Sulfate	Quarterly	mg/L	31	104	196
			Phosphorus	Quarterly	mg/L	0.6	11.42	33.70
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.020	0.03
			Total Dissolved Solids	Quarterly	mg/L	359	653	1030
			Fluoride	Quarterly	mg/L	0.6	0.8	1
			Standing Water Level	Quarterly	mg/L	0.5	1	1.5
			Arsenic	Quarterly	mg/L	0.001	0.003	0.004
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.002
			Copper	Quarterly	mg/L	0.001	0.004	0.007
			Nickel	Quarterly	mg/L	0.001	0.00225	0.004
Lead	Quarterly	mg/L	0.001	0.006	0.012			
Zinc	Quarterly	mg/L	0.007	0.03375	0.084			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 6 – BH5	7/10/2021	13/10/2021	pH	Quarterly	pH	7.48	7.79	8.1
			Electrical Conductivity	Quarterly	µS/cm	330	617	805
			Sodium Absorption Ratio	Quarterly	-	0.68	1.17	1.44
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	139	226	285
			Chloride	Quarterly	mg/L	13	53	97
			Sodium	Quarterly	mg/L	18	43.25	56
			Nitrogen (total)	Quarterly	mg/L	2	3.175	3.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.9	2.925	3.6
			Nitrate	Quarterly	mg/L	0.08	0.23	0.33
			Sulfate	Quarterly	mg/L	17	33	43
			Phosphorus	Quarterly	mg/L	1.33	1.8925	2.43
			Reactive Phosphorus	Quarterly	mg/L	0.04	0.105	0.18
			Total Dissolved Solids	Quarterly	mg/L	210	389.75	519
			Fluoride	Quarterly	mg/L	0.5	0.625	0.7
			Standing Water Level	Quarterly	mg/L	0.5	0.875	1
			Arsenic	Quarterly	mg/L	0.002	0.0025	0.003
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.002	0.002	0.002
			Nickel	Quarterly	mg/L	0.001	0.00125	0.002
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.007	0.012	0.017			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 7 – BH6	7/10/2021	13/10/2021	pH	Quarterly	pH	19	7.91	8.01
			Electrical Conductivity	Quarterly	µS/cm	592	628.75	663
			Sodium Absorption Ratio	Quarterly	-	0.52	0.595	0.69
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	239	277	336
			Chloride	Quarterly	mg/L	17	24	35
			Sodium	Quarterly	mg/L	20	23	25
			Nitrogen (total)	Quarterly	mg/L	2.4	3	3.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1	1.675	2.3
			Nitrate	Quarterly	mg/L	0.75	1.2925	1.9
			Sulfate	Quarterly	mg/L	19	32.75	46
			Phosphorus	Quarterly	mg/L	0.12	1.6525	4.22
			Reactive Phosphorus	Quarterly	mg/L	0.12	0.225	0.44
			Total Dissolved Solids	Quarterly	mg/L	366	397.75	432
			Fluoride	Quarterly	mg/L	0.6	0.7	0.9
			Standing Water Level	Quarterly	mg/L	0.5	0.875	1
			Arsenic	Quarterly	mg/L	0.001	0.00525	0.01
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.002667	0.004
			Copper	Quarterly	mg/L	0.002	0.00275	0.005
			Nickel	Quarterly	mg/L	0.001	0.00225	0.004
Lead	Quarterly	mg/L	0.001	0.0015	0.003			
Zinc	Quarterly	mg/L	0.010	0.01725	0.027			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – July 2021

Published: 15 September 2021 Licensee: BOC LIMITED EPL No.: 20165								
Qualifications related to limits Samples taken as per approved methods								
EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 1 Cooling Tower	12/07/2021	19/07/2021 Biocide & Dosing Chemical results authorised on: 31/08/2021	pH	Quarterly	pH	6.84	7.85	8.39
			Electrical Conductivity	Quarterly	µS/cm	1770	1927	2210
			Sodium Absorption Ratio	Quarterly	-	4.63	10.5	14.5
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	44	82	156
			Chloride	Quarterly	mg/L	408	455.3	481
			Sodium	Quarterly	mg/L	248	295	327
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	2	2	2
			Fluoride	Quarterly	mg/L	0.8	1.47	1.9
			Nitrogen (total)	Quarterly	mg/L	3.3	4.37	5.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.2	1.3	1.4
			Sulfate	Quarterly	mg/L	173	239	348
			Total Dissolved Solids	Quarterly	mg/L	1040	1180	1390
			Phosphorus	Quarterly	mg/L	0.11	0.20	0.26
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.002	0.002
			Copper	Quarterly	mg/L	0.023	0.028	0.033
			Nickel	Quarterly	mg/L	0.001	0.0010	0.001
			Lead	Quarterly	mg/L	0.001	0.001	0
			Zinc	Quarterly	mg/L	0.006	0.011	0.021
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001
Biocides (active component Isothiazoline)	Quarterly	mg/L	<0.05	<0.05	<0.05			
Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	0.1	0.1	0.1			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 2 – BH1	12/07/2021	19/07/2021	pH	Quarterly	pH	7.35	7.5	7.6
			Electrical Conductivity	Quarterly	µS/cm	448	486	516
			Sodium Absorption Ratio	Quarterly	-	0.35	0.90	1.79
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	203	258	341
			Chloride	Quarterly	mg/L	15	17	18
			Sodium	Quarterly	mg/L	12	37	76
			Nitrogen (total)	Quarterly	mg/L	0.9	2.9	4.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.9	2.9	4.4
			Nitrate	Quarterly	mg/L	0.03	0.1	0.3
			Sulfate	Quarterly	mg/L	14	17	21
			Phosphorus	Quarterly	mg/L	0.28	2.21	3.84
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.02	0.02
			Total Dissolved Solids	Quarterly	mg/L	256	307	336
			Fluoride	Quarterly	mg/L	0.4	0.5	0.5
			Standing Water Level	Quarterly	mg/L	1	1	2
			Arsenic	Quarterly	mg/L	0.001	0.0080	0.021
			Cadmium	Quarterly	mg/L	0.0001	0.0007	0.0013
			Chromium	Quarterly	mg/L	0.001	0.0085	0.016
			Copper	Quarterly	mg/L	0.002	0.014	0.038
			Nickel	Quarterly	mg/L	0.001	0.011	0.03
			Lead	Quarterly	mg/L	0.001	0.032	0.094
Zinc	Quarterly	mg/L	0.02	0.35	0.998			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 3 – BH2	12/07/2021	19/07/2021	pH	Quarterly	pH	7.36	7.45	7.54
			Electrical Conductivity	Quarterly	µS/cm	436	465	492
			Sodium Absorption Ratio	Quarterly	-	0.33	0.3	0.36
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	236	253	265
			Chloride	Quarterly	mg/L	12	13	14
			Sodium	Quarterly	mg/L	12	13	13
			Nitrogen (total)	Quarterly	mg/L	1.8	4.1	6
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.6	3.9	5.8
			Nitrate	Quarterly	mg/L	0.11	0.14	0.17
			Sulfate	Quarterly	mg/L	11	14	17
			Phosphorus	Quarterly	mg/L	0.27	2.11	4.16
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.010	0.01
			Total Dissolved Solids	Quarterly	mg/L	280	285	292
			Fluoride	Quarterly	mg/L	0.5	0.6	0.8
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.0017	0.002
			Cadmium	Quarterly	mg/L	0.0001	0.0002	0.0003
			Chromium	Quarterly	mg/L	0.001	0.0017	0.003
			Copper	Quarterly	mg/L	0.003	0.0043	0.006
			Nickel	Quarterly	mg/L	0.002	0.0037	0.007
Lead	Quarterly	mg/L	0.001	0.0060	0.016			
Zinc	Quarterly	mg/L	0.006	0.048	0.119			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 4 – BH3	12/07/2021	19/07/2021	pH	Quarterly	pH	7.33	7.487	7.65
			Electrical Conductivity	Quarterly	µS/cm	440	487.67	561
			Sodium Absorption Ratio	Quarterly	-	0.37	0.43	0.52
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	204	223	247
			Chloride	Quarterly	mg/L	15	17	20
			Sodium	Quarterly	mg/L	13	15	19
			Nitrogen (total)	Quarterly	mg/L	1	4.9	10
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.9	2.2	3.2
			Nitrate	Quarterly	mg/L	0.1	2.47	6.3
			Sulfate	Quarterly	mg/L	17	23	32
			Phosphorus	Quarterly	mg/L	1	1	1.9
			Reactive Phosphorus	Quarterly	mg/L	0.02	0.05	0.08
			Total Dissolved Solids	Quarterly	mg/L	286	314	346
			Fluoride	Quarterly	mg/L	0.5	0.67	0.8
			Standing Water Level	Quarterly	mg/L	1	1.3	2
			Arsenic	Quarterly	mg/L	0.002	0.004	0.007
			Cadmium	Quarterly	mg/L	0.0001	0.0002	0.0002
			Chromium	Quarterly	mg/L	0.001	0.003	0.004
			Copper	Quarterly	mg/L	0.002	0.005	0.011
			Nickel	Quarterly	mg/L	0.002	0.004	0.005
Lead	Quarterly	mg/L	0.001	0.004	0.006			
Zinc	Quarterly	mg/L	0.01	0.025	0.05			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 5 – BH4	12/07/2021	19/07/2021	pH	Quarterly	pH	7.31	7.38	7.45
			Electrical Conductivity	Quarterly	µS/cm	604	851.3	1020
			Sodium Absorption Ratio	Quarterly	-	0.28	1.46	2.77
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	239	245	249
			Chloride	Quarterly	mg/L	41	102	160
			Sodium	Quarterly	mg/L	10	57	108
			Nitrogen (total)	Quarterly	mg/L	1	1.7	2.1
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1	1.7	2.1
			Nitrate	Quarterly	mg/L	0.02	0.033	0.04
			Sulfate	Quarterly	mg/L	31	74	104
			Phosphorus	Quarterly	mg/L	0.6	3.99	9.42
			Reactive Phosphorus	Quarterly	mg/L	0.03	0.030	0.03
			Total Dissolved Solids	Quarterly	mg/L	359	528	640
			Fluoride	Quarterly	mg/L	0.6	0.8	1
			Standing Water Level	Quarterly	mg/L	1	1.167	1.5
			Arsenic	Quarterly	mg/L	0.003	0.004	0.004
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.002	0.002
			Copper	Quarterly	mg/L	0.001	0.004	0.007
			Nickel	Quarterly	mg/L	0.001	0.0027	0.004
Lead	Quarterly	mg/L	0.005	0.009	0.012			
Zinc	Quarterly	mg/L	0.007	0.042	0.084			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 7 – BH6	12/07/2021	19/07/2021	pH	Quarterly	pH	7.74	7.886	8.01
			Electrical Conductivity	Quarterly	µS/cm	592	633	663
			Sodium Absorption Ratio	Quarterly	-	0.52	0.61	0.69
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	239	284.33	336
			Chloride	Quarterly	mg/L	17	25	35
			Sodium	Quarterly	mg/L	22	24	25
			Nitrogen (total)	Quarterly	mg/L	3.1	3.2	3.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.5	1.9	2.3
			Nitrate	Quarterly	mg/L	0.75	1.26	1.9
			Sulfate	Quarterly	mg/L	30	37.3	46
			Phosphorus	Quarterly	mg/L	0.12	1.98	4.22
			Reactive Phosphorus	Quarterly	mg/L	0.12	0.247	0.44
			Total Dissolved Solids	Quarterly	mg/L	380	408.33	432
			Fluoride	Quarterly	mg/L	0.6	0.7	0.9
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.0037	0.006
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.003	0.0035	0.004
			Copper	Quarterly	mg/L	0.002	0.003	0.005
			Nickel	Quarterly	mg/L	0.002	0.0027	0.004
			Lead	Quarterly	mg/L	0.001	0.002	0.003
Zinc	Quarterly	mg/L	0.010	0.018	0.027			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 6 – BH5	12/07/2021	19/07/2021	pH	Quarterly	pH	7.48	7.68	7.78
			Electrical Conductivity	Quarterly	µS/cm	330	623	805
			Sodium Absorption Ratio	Quarterly	-	0.68	1.09	1.44
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	139	220	285
			Chloride	Quarterly	mg/L	13	59	97
			Sodium	Quarterly	mg/L	18	40.67	56
			Nitrogen (total)	Quarterly	mg/L	3	3.5666667	3.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	2.6	3.27	3.6
			Nitrate	Quarterly	mg/L	0.19	0.28	0.33
			Sulfate	Quarterly	mg/L	17	30	43
			Phosphorus	Quarterly	mg/L	1.33	1.92	2.43
			Reactive Phosphorus	Quarterly	mg/L	0.04	0.11	0.18
			Total Dissolved Solids	Quarterly	mg/L	210	394.33	519
			Fluoride	Quarterly	mg/L	0.6	0.67	0.7
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.002	0.002	0.003
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.002	0.002	0.002
			Nickel	Quarterly	mg/L	0.001	0.0013	0.002
			Lead	Quarterly	mg/L	0.001	0.001	0.001
Zinc	Quarterly	mg/L	0.007	0.0113	0.017			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001			

Effluent and Groundwater Monitoring Data – April 2021

Published: 1 June 2021 Licensee: BOC LIMITED EPL No.: 20165								
Qualifications related to limits Samples taken as per approved methods								
EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 1 Cooling Tower	8/04/2021	15/04/2021 Biocide & Dosing Chemical results authorised on: 24/05/2021	pH	Quarterly	pH	6.84	7.62	8.39
			Electrical Conductivity	Quarterly	µS/cm	1800	2005	2210
			Sodium Absorption Ratio	Quarterly	-	4.63	8.5	12.3
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	45	101	156
			Chloride	Quarterly	mg/L	477	479	481
			Sodium	Quarterly	mg/L	248	280	311
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	<2	<2	<2
			Fluoride	Quarterly	mg/L	0.8	1.25	1.7
			Nitrogen (total)	Quarterly	mg/L	3.3	3.9	4.5
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.2	1.3	1.4
			Sulfate	Quarterly	mg/L	173	261	348
			Total Dissolved Solids	Quarterly	mg/L	1040	1215	1390
			Phosphorus	Quarterly	mg/L	0.22	0.24	0.26
			Arsenic	Quarterly	mg/L	<0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	0.002	0.002
			Copper	Quarterly	mg/L	0.002	0.028	0.033
			Nickel	Quarterly	mg/L	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	<0.001	<0.001	<0.001
			Zinc	Quarterly	mg/L	0.006	0.007	0.007
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001			
Biocides (active component isothiazoline)	Quarterly	mg/L	<0.05	<0.05	<0.05			
Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 2 – BH1	8/04/2021	15/04/2021	pH	Quarterly	pH	7.35	7.5	7.6
			Electrical Conductivity	Quarterly	µS/cm	448	482	516
			Sodium Absorption Ratio	Quarterly	-	0.35	0.46	0.56
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	203	217	230
			Chloride	Quarterly	mg/L	17	18	18
			Sodium	Quarterly	mg/L	12	18	24
			Nitrogen (total)	Quarterly	mg/L	0.9	2.7	4.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.9	2.7	4.4
			Nitrate	Quarterly	mg/L	0.03	0.2	0.3
			Sulfate	Quarterly	mg/L	14	18	21
			Phosphorus	Quarterly	mg/L	0.28	2.06	3.84
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.01	0.01
			Total Dissolved Solids	Quarterly	mg/L	256	296	336
			Fluoride	Quarterly	mg/L	0.4	0.5	0.5
			Standing Water Level	Quarterly	mg/L	1	2	2
			Arsenic	Quarterly	mg/L	0.001	0.0110	0.021
			Cadmium	Quarterly	mg/L	0.0013	0.0013	0.0013
			Chromium	Quarterly	mg/L	0.016	0.0160	0.016
			Copper	Quarterly	mg/L	0.002	0.02	0.038
			Nickel	Quarterly	mg/L	0.001	0.0155	0.03
			Lead	Quarterly	mg/L	<0.001	0.0475	0.094
			Zinc	Quarterly	mg/L	0.02	0.509	0.998
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 3 – BH2	8/04/2021	15/04/2021	pH	Quarterly	pH	7.36	7.41	7.46
			Electrical Conductivity	Quarterly	µS/cm	466	479	492
			Sodium Absorption Ratio	Quarterly	-	0.33	0.3	0.36
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	236	247	257
			Chloride	Quarterly	mg/L	12	13	14
			Sodium	Quarterly	mg/L	12	13	13
			Nitrogen (total)	Quarterly	mg/L	1.8	3.2	4.5
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.6	3	4.4
			Nitrate	Quarterly	mg/L	0.11	0.13	0.14
			Sulfate	Quarterly	mg/L	11	14	17
			Phosphorus	Quarterly	mg/L	0.27	1.08	1.89
			Reactive Phosphorus	Quarterly	mg/L	<0.01	<0.01	<0.01
			Total Dissolved Solids	Quarterly	mg/L	280	286	292
			Fluoride	Quarterly	mg/L	0.5	0.7	0.8
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.002	0.002	0.002
			Cadmium	Quarterly	mg/L	<0.0001	0.002	0.0003
			Chromium	Quarterly	mg/L	<0.001	0.002	0.003
			Copper	Quarterly	mg/L	0.003	0.0045	0.006
			Nickel	Quarterly	mg/L	0.002	0.0045	0.007
Lead	Quarterly	mg/L	<0.001	0.0085	0.016			
Zinc	Quarterly	mg/L	0.018	0.0685	0.119			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 4 – BH3	8/04/2021	15/04/2021	pH	Quarterly	pH	7.33	7.41	7.48
			Electrical Conductivity	Quarterly	µS/cm	462	511.5	561
			Sodium Absorption Ratio	Quarterly	-	0.37	0.45	0.52
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	204	211	217
			Chloride	Quarterly	mg/L	17	19	20
			Sodium	Quarterly	mg/L	13	16	19
			Nitrogen (total)	Quarterly	mg/L	1	5.5	10
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.9	2.1	3.2
			Nitrate	Quarterly	mg/L	0.1	3.2	6.3
			Sulfate	Quarterly	mg/L	17	25	32
			Phosphorus	Quarterly	mg/L	1	1	1.58
			Reactive Phosphorus	Quarterly	mg/L	0.02	0.04	0.05
			Total Dissolved Solids	Quarterly	mg/L	310	328	346
			Fluoride	Quarterly	mg/L	0.5	0.65	0.8
			Standing Water Level	Quarterly	mg/L	1	1.5	2
			Arsenic	Quarterly	mg/L	0.003	0.005	0.007
			Cadmium	Quarterly	mg/L	<0.0001	0.0002	0.0002
			Chromium	Quarterly	mg/L	<0.001	0.004	0.004
			Copper	Quarterly	mg/L	0.002	0.007	0.011
			Nickel	Quarterly	mg/L	0.004	0.005	0.005
Lead	Quarterly	mg/L	<0.001	0.006	0.006			
Zinc	Quarterly	mg/L	0.01	0.03	0.05			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 5 – BH4	8/04/2021	15/04/2021	pH	Quarterly	pH	7.31	7.35	7.38
			Electrical Conductivity	Quarterly	µS/cm	604	812	1020
			Sodium Absorption Ratio	Quarterly	-	1.34	2.06	2.77
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	239	244	249
			Chloride	Quarterly	mg/L	41	101	160
			Sodium	Quarterly	mg/L	53	81	108
			Nitrogen (total)	Quarterly	mg/L	2	2.1	2.1
			Total Kjeldahl Nitrogen	Quarterly	mg/L	2	2.1	2.1
			Nitrate	Quarterly	mg/L	0.04	0.04	0.04
			Sulfate	Quarterly	mg/L	31	68	104
			Phosphorus	Quarterly	mg/L	0.6	5.01	9.42
			Reactive Phosphorus	Quarterly	mg/L	0.03	0.03	0.03
			Total Dissolved Solids	Quarterly	mg/L	359	500	640
			Fluoride	Quarterly	mg/L	0.6	0.8	1
			Standing Water Level	Quarterly	mg/L	1	1.25	1.5
			Arsenic	Quarterly	mg/L	0.003	0.004	0.004
			Cadmium	Quarterly	mg/L	<0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	<0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.003	0.005
			Nickel	Quarterly	mg/L	0.001	0.0025	0.004
Lead	Quarterly	mg/L	<0.001	0.005	0.005			
Zinc	Quarterly	mg/L	0.007	0.0215	0.036			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 6 – BHS	8/04/2021	15/04/2021	pH	Quarterly	pH	7.48	7.63	7.78
			Electrical Conductivity	Quarterly	µS/cm	330	532	733
			Sodium Absorption Ratio	Quarterly	-	0.68	0.92	1.15
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	139	188	237
			Chloride	Quarterly	mg/L	13	40	67
			Sodium	Quarterly	mg/L	18	33	48
			Nitrogen (total)	Quarterly	mg/L	3	3.45	3.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	2.6	3.1	3.6
			Nitrate	Quarterly	mg/L	0.32	0.325	0.33
			Sulfate	Quarterly	mg/L	17	30	43
			Phosphorus	Quarterly	mg/L	1.33	1.68	2.02
			Reactive Phosphorus	Quarterly	mg/L	0.04	0.08	0.12
			Total Dissolved Solids	Quarterly	mg/L	210	332	454
			Fluoride	Quarterly	mg/L	0.6	0.65	0.7
			Standing Water Level	Quarterly	mg/L	1	1	11
			Arsenic	Quarterly	mg/L	0.002	0.002	0.002
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	0.002	0.002	0.002
			Nickel	Quarterly	mg/L	0.001	0.002	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.017	0.012	0.017			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 7 – BH6	8/04/2021	15/04/2021	pH	Quarterly	pH	7.74	7.88	8.01
			Electrical Conductivity	Quarterly	µS/cm	592	627.5	663
			Sodium Absorption Ratio	Quarterly	-	0.63	0.66	0.69
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	239	258.5	278
			Chloride	Quarterly	mg/L	23	29	35
			Sodium	Quarterly	mg/L	25	25	25
			Nitrogen (total)	Quarterly	mg/L	3.1	3.1	3.1
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.9	2.1	2.3
			Nitrate	Quarterly	mg/L	0.75	0.94	1.13
			Sulfate	Quarterly	mg/L	30	38	46
			Phosphorus	Quarterly	mg/L	1.59	2.91	4.22
			Reactive Phosphorus	Quarterly	mg/L	0.18	0.31	0.44
			Total Dissolved Solids	Quarterly	mg/L	380	406	432
			Fluoride	Quarterly	mg/L	0.6	0.75	0.9
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.0025	0.004
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	0.004	0.004
			Copper	Quarterly	mg/L	0.002	0.0035	0.005
			Nickel	Quarterly	mg/L	0.002	0.002	0.002
Lead	Quarterly	mg/L	0.001	0.002	0.003			
Zinc	Quarterly	mg/L	0.01	0.0185	0.027			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001			

Effluent and Groundwater Monitoring Data – January 2021

Published: 11 March 2021 Licensee: BOC LIMITED EPL No.: 20165								
Qualifications related to limits Samples taken as per approved methods								
EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 1 Cooling Tower	21/01/2021	28/01/2021	pH	Quarterly	pH	6.8	6.8	6.8
		Biocide & Dosing Chemical results authorised on 22/02/2021	Electrical Conductivity	Quarterly	µS/cm	2800	2800	2800
			Sodium Absorption Ratio	Quarterly	-	12.3	12.3	12.3
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	45	45	45
			Chloride	Quarterly	mg/L	481	481	481
			Sodium	Quarterly	mg/L	311	311	311
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	<2	<2	<2
			Fluoride	Quarterly	mg/L	0.8	0.8	0.8
			Nitrogen (total)	Quarterly	mg/L	3.3	3.3	3.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.2	1.2	1.2
			Sulfate	Quarterly	mg/L	173	173	173
			Total Dissolved Solids	Quarterly	mg/L	1040	1040	1040
			Phosphorus	Quarterly	mg/L	0.22	0.22	0.22
			Arsenic	Quarterly	mg/L	<0.001	<0.001	<0.001
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	0.023	0.023	0.023
			Nickel	Quarterly	mg/L	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	<0.001	<0.001	<0.001
			Zinc	Quarterly	mg/L	0.006	0.006	0.006
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001			
Biocides (active component isothiazoline)	Quarterly	mg/L	<0.05	<0.05	<0.05			
Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 2 – BH1	21/01/2021	28/01/2021	pH	Quarterly	pH	7.61	7.61	7.61
			Electrical Conductivity	Quarterly	µS/cm	516	516	516
			Sodium Absorption Ratio	Quarterly	-	0.56	0.56	0.56
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	230	230	230
			Chloride	Quarterly	mg/L	18	18	18
			Sodium	Quarterly	mg/L	24	24	24
			Nitrogen (total)	Quarterly	mg/L	4.4	4.4	4.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	4.4	4.4	4.4
			Nitrate	Quarterly	mg/L	0.03	0.03	0.03
			Sulfate	Quarterly	mg/L	21	21	21
			Phosphorus	Quarterly	mg/L	3.84	3.84	3.84
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.01	0.01
			Total Dissolved Solids	Quarterly	mg/L	336	336	336
			Fluoride	Quarterly	mg/L	0.5	0.5	0.5
			Standing Water Level	Quarterly	mg/L	2	2	2
			Arsenic	Quarterly	mg/L	0.021	0.021	0.021
			Cadmium	Quarterly	mg/L	0.0013	0.0013	0.0013
			Chromium	Quarterly	mg/L	0.016	0.016	0.016
			Copper	Quarterly	mg/L	0.038	0.038	0.038
			Nickel	Quarterly	mg/L	0.03	0.03	0.03
Lead	Quarterly	mg/L	0.094	0.094	0.094			
Zinc	Quarterly	mg/L	0.998	0.998	0.998			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 3 – BH2	21/01/2021	28/01/2021	pH	Quarterly	pH	7.46	7.46	7.46
			Electrical Conductivity	Quarterly	µS/cm	466	466	466
			Sodium Absorption Ratio	Quarterly	-	0.36	0.36	0.36
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	236	236	236
			Chloride	Quarterly	mg/L	14	14	14
			Sodium	Quarterly	mg/L	12	12	12
			Nitrogen (total)	Quarterly	mg/L	4.5	4.5	4.5
			Total Kjeldahl Nitrogen	Quarterly	mg/L	4.4	4.4	4.4
			Nitrate	Quarterly	mg/L	0.11	0.11	0.11
			Sulfate	Quarterly	mg/L	17	17	17
			Phosphorus	Quarterly	mg/L	1.89	1.89	1.89
			Reactive Phosphorus	Quarterly	mg/L	<0.01	<0.01	<0.01
			Total Dissolved Solids	Quarterly	mg/L	280	280	280
			Fluoride	Quarterly	mg/L	0.8	0.8	0.8
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.002	0.002	0.002
			Cadmium	Quarterly	mg/L	0.0003	0.0003	0.0003
			Chromium	Quarterly	mg/L	0.003	0.003	0.003
			Copper	Quarterly	mg/L	0.006	0.006	0.006
			Nickel	Quarterly	mg/L	0.007	0.007	0.007
Lead	Quarterly	mg/L	0.016	0.016	0.016			
Zinc	Quarterly	mg/L	0.119	0.119	0.119			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 4 – BH3	21/01/2021	28/01/2021	pH	Quarterly	pH	7.48	7.48	7.48
			Electrical Conductivity	Quarterly	µS/cm	462	462	462
			Sodium Absorption Ratio	Quarterly	-	0.37	0.37	0.37
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	204	204	204
			Chloride	Quarterly	mg/L	17	17	17
			Sodium	Quarterly	mg/L	13	13	13
			Nitrogen (total)	Quarterly	mg/L	1	1	1
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.9	0.9	0.9
			Nitrate	Quarterly	mg/L	0.1	0.1	0.1
			Sulfate	Quarterly	mg/L	17	17	17
			Phosphorus	Quarterly	mg/L	1	1	1
			Reactive Phosphorus	Quarterly	mg/L	0.05	0.05	0.05
			Total Dissolved Solids	Quarterly	mg/L	310	310	310
			Fluoride	Quarterly	mg/L	0.8	0.8	0.8
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.003	0.003	0.003
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	0.002	0.002	0.002
			Nickel	Quarterly	mg/L	0.004	0.004	0.004
Lead	Quarterly	mg/L	<0.001	<0.001	<0.001			
Zinc	Quarterly	mg/L	0.01	0.01	0.01			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 5 – BH4	21/01/2021	28/01/2021	pH	Quarterly	pH	7.31	7.31	7.31
			Electrical Conductivity	Quarterly	µS/cm	1020	1020	1020
			Sodium Absorption Ratio	Quarterly	-	2.77	2.77	2.77
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	249	249	249
			Chloride	Quarterly	mg/L	160	160	160
			Sodium	Quarterly	mg/L	108	108	108
			Nitrogen (total)	Quarterly	mg/L	2.1	2.1	2.1
			Total Kjeldahl Nitrogen	Quarterly	mg/L	2.1	2.1	2.1
			Nitrate	Quarterly	mg/L	0.04	0.04	0.04
			Sulfate	Quarterly	mg/L	104	104	104
			Phosphorus	Quarterly	mg/L	9.42	9.42	9.42
			Reactive Phosphorus	Quarterly	mg/L	0.03	0.03	0.03
			Total Dissolved Solids	Quarterly	mg/L	640	640	640
			Fluoride	Quarterly	mg/L	1	1	1
			Standing Water Level	Quarterly	mg/L	1.5	1.5	1.5
			Arsenic	Quarterly	mg/L	0.004	0.004	0.004
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	0.001	0.001	0.001
			Nickel	Quarterly	mg/L	0.001	0.001	0.001
Lead	Quarterly	mg/L	<0.001	<0.001	<0.001			
Zinc	Quarterly	mg/L	0.007	0.007	0.007			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 6 – BH5	21/01/2021	28/01/2021	pH	Quarterly	pH	7.78	7.78	7.78
			Electrical Conductivity	Quarterly	µS/cm	733	733	733
			Sodium Absorption Ratio	Quarterly	-	1.15	1.15	1.15
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	237	237	237
			Chloride	Quarterly	mg/L	67	67	67
			Sodium	Quarterly	mg/L	48	48	48
			Nitrogen (total)	Quarterly	mg/L	3	3	3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	2.6	2.6	2.6
			Nitrate	Quarterly	mg/L	0.33	0.33	0.33
			Sulfate	Quarterly	mg/L	43	43	43
			Phosphorus	Quarterly	mg/L	1.33	1.33	1.33
			Reactive Phosphorus	Quarterly	mg/L	0.12	0.12	0.12
			Total Dissolved Solids	Quarterly	mg/L	454	454	454
			Fluoride	Quarterly	mg/L	0.7	0.7	0.7
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.002	0.002	0.002
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	0.002	0.002	0.002
Nickel	Quarterly	mg/L	0.001	0.001	0.001			
Lead	Quarterly	mg/L	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.017	0.017	0.017			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001			

EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period & Monitoring Frequency Required	Units	2021 Values to date		
						Min Value	Mean Value	Max Value
EPL Point 7 – BH6	21/01/2021	28/01/2021	pH	Quarterly	pH	8.01	8.01	8.01
			Electrical Conductivity	Quarterly	µS/cm	663	663	663
			Sodium Absorption Ratio	Quarterly	-	0.63	0.63	0.63
			Alkalinity as Calcium Carbonate (hardness)	Quarterly	mg/L	278	278	278
			Chloride	Quarterly	mg/L	35	35	35
			Sodium	Quarterly	mg/L	25	25	25
			Nitrogen (total)	Quarterly	mg/L	3.1	3.1	3.1
			Total Kjeldahl Nitrogen	Quarterly	mg/L	2.3	2.3	2.3
			Nitrate	Quarterly	mg/L	0.75	0.75	0.75
			Sulfate	Quarterly	mg/L	30	30	30
			Phosphorus	Quarterly	mg/L	4.22	4.22	4.22
			Reactive Phosphorus	Quarterly	mg/L	0.44	0.44	0.44
			Total Dissolved Solids	Quarterly	mg/L	432	432	432
			Fluoride	Quarterly	mg/L	0.9	0.9	0.9
			Standing Water Level	Quarterly	mg/L	1	1	1
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	0.004	0.004	0.004
			Copper	Quarterly	mg/L	0.002	0.002	0.002
			Nickel	Quarterly	mg/L	0.002	0.002	0.002
Lead	Quarterly	mg/L	0.003	0.003	0.003			
Zinc	Quarterly	mg/L	0.027	0.027	0.027			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001			

Effluent and Groundwater Monitoring Data October 2020

Published: 14 December 2020 Licensee: BOC LIMITED EPL no.: 20165									
Qualifications related to limits Samples taken as per approved methods.									
EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period and Monitoring Frequency Required by Licence	Units	Value	2020 Values to date		
							Min Value	Mean Value	Max Value
EPL point 1 Cooling Tower Effluent	8/10/2020	19/10/2020	pH	Quarterly	pH	8.39	8.39	8.62	8.96
			Electrical conductivity	Quarterly	µS/cm	2010	1890	2038	2210
			Sodium Absorption Ratio	Quarterly	-	12.2	4.6	10.1	13.3
			Alkalinity as calcium carbonate (hardness)	Quarterly	mg/L	64	64	143	269
			Chloride	Quarterly	mg/L	434	425	453.25	486
			Sodium	Quarterly	mg/L	314	245	304	351
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	3	2	2.25	3
			Fluoride	Quarterly	mg/L	1.5	1.3	1.88	2.5
			Nitrogen (total)	Quarterly	mg/L	5.2	3.4	4.6	5.2
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.4	1	1.3	1.4
	Sulfate	Quarterly	mg/L	207	182	222	299		
	Total dissolved solids	Quarterly	mg/L	1080	1020	1183	1490		
	Phosphorus	Quarterly	mg/L	0.12	0.06	0.12	0.24		
	Arsenic	Quarterly	mg/L	0.001	0.001	0.001	0.001		
	Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001		
	Chromium	Quarterly	mg/L	0.002	0.001	0.003	0.007		
	Copper	Quarterly	mg/L	0.026	0.002	0.015	0.026		
	Nickel	Quarterly	mg/L	0.001	0.001	0.001	0.001		
	Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001		
	Zinc	Quarterly	mg/L	0.009	0.005	0.007	0.009		
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001			
Biocides (active component isothiazoline)	Quarterly	mg/L	<0.05	<0.05	<0.05	<0.05			
Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1	<0.1			
EPL point 2 BH1	8/10/2020	19/10/2020	pH	Quarterly	pH	7.6	7.6	7.7	8
			Conductivity	Quarterly	µS/cm	648	600	658	724
			Sodium Absorption Ratio	Quarterly	-	0.38	0.38	0.42	0.46
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	266	243	290	358

			Chloride	Quarterly	mg/L	25	22	26	33
			Sodium	Quarterly	mg/L	16	16	17	17
			Nitrogen (total)	Quarterly	mg/L	5	1.7	6	14.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	4.9	1.7	5.9	14.8
			Nitrate	Quarterly	mg/L	0.06	0.01	0.1	0.12
			Sulfate	Quarterly	mg/L	36	36	52	82
			Phosphorus	Quarterly	mg/L	6.96	1.6	4.87	8.62
			Reactive Phosphorus	Quarterly	mg/L	0.04	0.02	0.04	0.06
			Total dissolved solids	Quarterly	mg/L	396	396	409	421
			Fluoride	Quarterly	mg/L	0.5	0.5	0.5	0.6
			Standing Water Level	Quarterly	m	1	1	2	2
			Arsenic	Quarterly	mg/L	0.001	0.001	0.003	0.007
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0002
			Chromium	Quarterly	mg/L	0.001	0.001	0.0017	0.003
			Copper	Quarterly	mg/L	0.001	0.001	0.004	0.007
			Nickel	Quarterly	mg/L	0.001	0.001	0.0017	0.003
			Lead	Quarterly	mg/L	0.002	0.001	0.0047	0.011
			Zinc	Quarterly	mg/L	0.038	0.006	0.05	0.106
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
EPL point 3 BH2	8/10/2020	19/10/2020	pH	Quarterly	pH	7.47	7.38	7.53	7.65
			Conductivity	Quarterly	µS/cm	531	446	577	679
			Sodium Absorption Ratio	Quarterly	-	0.29	0.29	0.4	0.75
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	242	192	241	268
			Chloride	Quarterly	mg/L	15	15	22	34
			Sodium	Quarterly	mg/L	11	11	16	28
			Nitrogen (total)	Quarterly	mg/L	4.5	2.6	10.8	24.5
			Total Kjeldahl Nitrogen	Quarterly	mg/L	4.4	2.5	10.7	24.5
			Nitrate	Quarterly	mg/L	0.13	0.03	0.1	0.13
			Sulfate	Quarterly	mg/L	27	24	37	61
			Phosphorus	Quarterly	mg/L	2.19	0.9	3.3	5.39
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.01	0.01	0.01
			Total dissolved solids	Quarterly	mg/L	314	264	324	369
			Fluoride	Quarterly	mg/L	0.8	0.5	0.7	0.8
			Standing Water Level	Quarterly	m	1	1	1.75	3
			Arsenic	Quarterly	mg/L	0.004	0.001	0.002	0.004
			Cadmium	Quarterly	mg/L	0.0002	0.0001	0.0001	0.0002
			Chromium	Quarterly	mg/L	0.002	0.001	0.0013	0.002
			Copper	Quarterly	mg/L	0.003	0.001	0.0025	0.005
			Nickel	Quarterly	mg/L	0.005	0.001	0.002	0.005
			Lead	Quarterly	mg/L	0.014	0.001	0.0043	0.014
			Zinc	Quarterly	mg/L	0.122	0.005	0.0475	0.122
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
	8/10/2020	19/10/2020	pH	Quarterly	pH	7.68	7.68	7.82	8.04

EPL point 4 BH3			Conductivity	Quarterly	µS/cm	504	440	497.25	564
			Sodium Absorption Ratio	Quarterly	-	0.37	0.37	0.53	0.66
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	203	182	212	234
			Chloride	Quarterly	mg/L	19	14	17	19
			Sodium	Quarterly	mg/L	13	13	17	22
			Nitrogen (total)	Quarterly	mg/L	2	1.1	2	2.6
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.7	0.7	1.6	2.5
			Nitrate	Quarterly	mg/L	1.3	0.06	0.42	1.3
			Sulfate	Quarterly	mg/L	31	24	30	38
			Phosphorus	Quarterly	mg/L	0.67	0.67	3	6.76
			Reactive Phosphorus	Quarterly	mg/L	0.11	0.06	0.14	0.27
			Total dissolved solids	Quarterly	mg/L	302	221	280	310
			Fluoride	Quarterly	mg/L	0.6	0.5	0.58	0.6
			Standing Water Level	Quarterly	m	1	0.5	1.88	4
			Arsenic	Quarterly	mg/L	0.003	0.002	0.003	0.004
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.002	0.001	0.002	0.004
			Nickel	Quarterly	mg/L	0.002	0.001	0.001	0.002
			Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Zinc	Quarterly	mg/L	0.0031	0.005	0.017	0.0031
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001			
EPL point 5 BH4	8/10/2020	19/10/2020	pH	Quarterly	pH	7.51	7.27	7.45	7.53
			Conductivity	Quarterly	µS/cm	1290	1290	1425	1550
			Sodium Absorption Ratio	Quarterly	-	2.38	2.38	3.21	3.63
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	272	263	312	446
			Chloride	Quarterly	mg/L	180	180	243	295
			Sodium	Quarterly	mg/L	106	106	143	162
			Nitrogen (total)	Quarterly	mg/L	2	2	18.2	64.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.9	1.9	18.1	64.2
			Nitrate	Quarterly	mg/L	0.1	0.01	0.043	0.1
			Sulfate	Quarterly	mg/L	133	133	165	192
			Phosphorus	Quarterly	mg/L	5.04	1.08	95.11	362
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.01	0.02	0.05
			Total dissolved solids	Quarterly	mg/L	680	680	825	891
			Fluoride	Quarterly	mg/L	0.8	0.8	0.8	0.9
			Standing Water Level	Quarterly	m	1	1	1.875	3
			Arsenic	Quarterly	mg/L	0.002	0.001	0.003	0.009
Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001			
Chromium	Quarterly	mg/L	0.001	0.001	0.001	0.002			

			Copper	Quarterly	mg/L	0.001	0.001	0.003	0.007
			Nickel	Quarterly	mg/L	0.001	0.001	0.00175	0.004
			Lead	Quarterly	mg/L	0.001	0.001	0.003	0.01
			Zinc	Quarterly	mg/L	0.021	0.005	0.107	0.308
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
EPL point 6 BH5	8/10/2020	19/10/2020	pH	Quarterly	pH	7.88	7.78	7.82	7.88
			Conductivity	Quarterly	µS/cm	654	654	780	990
			Sodium Absorption Ratio	Quarterly	-	1.14	0.86	1.08	1.27
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	216	216	268	307
			Chloride	Quarterly	mg/L	57	52	71	116
			Sodium	Quarterly	mg/L	46	34	43.25	56
			Nitrogen (total)	Quarterly	mg/L	1.5	0.9	1.68	2.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.3	0.7	1.5	2.8
			Nitrate	Quarterly	mg/L	0.16	0.04	0.17	0.32
			Sulfate	Quarterly	mg/L	27	27	42	62
			Phosphorus	Quarterly	mg/L	0.96	0.37	1.028	1.56
			Reactive Phosphorus	Quarterly	mg/L	0.11	0.05	421.25	0.15
			Total dissolved solids	Quarterly	mg/L	364	364	0.7	496
			Fluoride	Quarterly	mg/L	0.8	0.6	2.18	0.8
			Standing Water Level	Quarterly	m	1	1	0.0028	3
			Arsenic	Quarterly	mg/L	0.003	0.002	0.0001	0.004
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.00125	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.0015	0.002
			Copper	Quarterly	mg/L	0.001	0.001	0.0015	0.003
			Nickel	Quarterly	mg/L	0.003	0.001	0.0015	0.003
Lead	Quarterly	mg/L	0.002	0.001	0.00125	0.002			
Zinc	Quarterly	mg/L	0.062	0.005	0.0275	0.062			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001			
EPL point 7 BH6	8/10/2020	19/10/2020	pH	Quarterly	pH	8.1	7.53	7.95	8.12
			Conductivity	Quarterly	µS/cm	688	685	741.75	843
			Sodium Absorption Ratio	Quarterly	-	0.55	0.55	0.82	0.99
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	297	287	303.75	321
			Chloride	Quarterly	mg/L	33	33	55.75	79
			Sodium	Quarterly	mg/L	21	21	32.25	41
			Nitrogen (total)	Quarterly	mg/L	1.9	1.4	2.23	3.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.8	0.9	2	3.2
			Nitrate	Quarterly	mg/L	0.11	0.11	0.21	0.44
			Sulfate	Quarterly	mg/L	24	1	17.25	24
			Phosphorus	Quarterly	mg/L	2.13	0.95	2.21	4.32
			Reactive Phosphorus	Quarterly	mg/L	0.55	0.35	0.45	0.55
Total dissolved solids	Quarterly	mg/L	388	367	421.25	478			

			Fluoride	Quarterly	mg/L	0.9	0.9	0.93	1
			Standing Water Level	Quarterly	m	1	0.	0.93	3
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.001	0.0015	0.003
			Nickel	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Zinc	Quarterly	mg/L	0.005	0.005	0.0098	0.02
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001

Effluent and Groundwater Monitoring Data July 2020

Published: 1 October 2020 Licensee: BOC LIMITED EPL no.: 20165											
Qualifications related to limits Samples taken as per approved methods.											
EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period and Monitoring Frequency Required by Licence	Units	Value	2020 Values to date				
							Min Value	Mean Value	Max Value		
EPL point 1 Cooling Tower Effluent	21/07/2020	28/07/2020	pH	Quarterly	pH	8.49	8.49	8.7	8.96		
			Electrical conductivity	Quarterly	µS/cm	2210	1890	2046.7	2210		
			Sodium Absorption Ratio	Quarterly	-	4.6	4.6	9.4	13.3		
			Alkalinity as calcium carbonate (hardness)	Quarterly	mg/L	269	106	169	269		
			Chloride	Quarterly	mg/L	468	425	459.7	486		
			Sodium	Quarterly	mg/L	245	245	301	351		
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	2	2	2	2		
			Fluoride	Quarterly	mg/L	2.2	1.3	2	2.5		
			Nitrogen (total)	Quarterly	mg/L	4.7	3.4	4.4	5		
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.4	1	1.2	1.4		
			Sulfate	Quarterly	mg/L	299	182	226.3	299		
			Total dissolved solids	Quarterly	mg/L	1,490	1,020	1,216.7	1,490		
			Phosphorus	Quarterly	mg/L	0.24	0.06	0.12	0.24		
	Arsenic	Quarterly	mg/L	0.001	0.001	0.001	0.001				
	6/7/2020	17/8/2020	Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001		
			Chromium	Quarterly	mg/L	0.001	0.001	0.0036	0.007		
			6/7/2020	17/8/2020	Copper	Quarterly	mg/L	0.016	0.002	0.011	0.016
					Nickel	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001		
			Zinc	Quarterly	mg/L	0.005	0.005	0.006	0.008		
Mercury			Quarterly	mg/L	0.0001	0.001	0.0001	0.0001			
Biocides (active component isothiazoline)	Quarterly	mg/L	<0.05	<0.05	<0.050	<0.050					
Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1	<0.1					
EPL point 2 BH1	21/07/2020	28/07/2020	pH	Quarterly	pH	7.62	7.62	7.8	8		
			Conductivity	Quarterly	µS/cm	659	600	661	724		
			Sodium Absorption Ratio	Quarterly	-	0.43	0.39	0.43	0.46		

			Total Alkalinity as calcium carbonate	Quarterly	mg/L	292	243	298	358
			Chloride	Quarterly	mg/L	33	22	26	33
			Sodium	Quarterly	mg/L	17	17	17	17
			Nitrogen (total)	Quarterly	mg/L	2.2	1.7	6.3	14.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	2.2	1.7	6.2	14.8
			Nitrate	Quarterly	mg/L	0.02	0.01	0.1	0.12
			Sulfate	Quarterly	mg/L	46	42	57	82
			Phosphorus	Quarterly	mg/L	2.28	1.6	4.17	8.62
			Reactive Phosphorus	Quarterly	mg/L	0.02	0.02	0.04	0.06
			Total dissolved solids	Quarterly	mg/L	396	396	413	421
			Fluoride	Quarterly	mg/L	0.5	0.5	0.5	0.6
			Standing Water Level	Quarterly	m	1	1	2	2
			Arsenic	Quarterly	mg/L	0.001	0.001	0.004	0.007
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0002	0.0002
			Chromium	Quarterly	mg/L	0.001	0.001	0.004	0.007
			Copper	Quarterly	mg/L	0.001	0.001	0.004	0.007
			Nickel	Quarterly	mg/L	0.001	0.001	0.002	0.003
			Lead	Quarterly	mg/L	0.001	0.001	0.006	0.011
			Zinc	Quarterly	mg/L	0.005	0.006	0.0560	0.106
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
EPL point 3 BH2	21/07/2020	28/07/2020	pH	Quarterly	pH	7.65	7.38	7.55	7.65
			Conductivity	Quarterly	µS/cm	446	446	592	679
			Sodium Absorption Ratio	Quarterly	-	0.37	0.36	0.5	0.75
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	192	192	241	268
			Chloride	Quarterly	mg/L	22	18	25	34
			Sodium	Quarterly	mg/L	11	11	18	28
			Nitrogen (total)	Quarterly	mg/L	2.6	2.6	12.8	24.5
			Total Kjeldahl Nitrogen	Quarterly	mg/L	2.5	2.5	12.8	24.5
			Nitrate	Quarterly	mg/L	0.1	0.3	0.08	0.12
			Sulfate	Quarterly	mg/L	24	24	40	61
			Phosphorus	Quarterly	mg/L	0.9	0.9	3.66	5.39
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.01	0.01	0.01
			Total dissolved solids	Quarterly	mg/L	264	264	327	369
			Fluoride	Quarterly	mg/L	0.8	0.5	0.7	0.8
			Standing Water Level	Quarterly	m	1	1	2	3
			Arsenic	Quarterly	mg/L	0.001	0.001	0.0013	0.002
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.001	0.0023	0.005
			Nickel	Quarterly	mg/L	0.001	0.001	0.001	0.001

			Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Zinc	Quarterly	mg/L	0.005	0.005	0.023	0.043
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
EPL point 4 BH3	21/07/2020	28/07/2020	pH	Quarterly	pH	7.78	7.77	7.86	8.04
			Conductivity	Quarterly	µS/cm	481	440	495	564
			Sodium Absorption Ratio	Quarterly	-	0.46	0.46	0.58	0.66
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	230	182	215	234
			Chloride	Quarterly	mg/L	17	14	16	18
			Sodium	Quarterly	mg/L	14	14	19	22
			Nitrogen (total)	Quarterly	mg/L	2.3	1.1	2.0	2.6
			Total Kjeldahl Nitrogen	Quarterly	mg/L	2.1	1	1.9	2.5
			Nitrate	Quarterly	mg/L	0.19	0.06	0.12	0.19
			Sulfate	Quarterly	mg/L	28	24	30	38
			Phosphorus	Quarterly	mg/L	2.36	1.35	3	6.76
			Reactive Phosphorus	Quarterly	mg/L	0.06	0.06	0.15	0.27
			Total dissolved solids	Quarterly	mg/L	287	221	273	310
			Fluoride	Quarterly	mg/L	0.6	0.5	0.57	0.6
			Standing Water Level	Quarterly	m	0.5	0.5	2.17	4
			Arsenic	Quarterly	mg/L	0.002	0.002	0.003	0.004
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.001	0.002	0.004
			Nickel	Quarterly	mg/L	0.001	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.005	0.005	0.012	0.027			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001			
EPL point 5 BH4	21/07/2020	28/07/2020	pH	Quarterly	pH	7.5	7.27	7.43	7.53
			Conductivity	Quarterly	µS/cm	1,410	1,410	1,470	1,550
			Sodium Absorption Ratio	Quarterly	-	3.5	3.34	3.49	3.63
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	268	263	326	446
			Chloride	Quarterly	mg/L	272	224	264	295
			Sodium	Quarterly	mg/L	146	146	156	162
			Nitrogen (total)	Quarterly	mg/L	4	2.4	23.6	64.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	3.9	2.4	23.5	64.2
			Nitrate	Quarterly	mg/L	0.01	0.01	0.023	0.05
			Sulfate	Quarterly	mg/L	166	166	176	192
			Phosphorus	Quarterly	mg/L	12.3	1.08	125	362
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.01	0.23	0.05
			Total dissolved solids	Quarterly	mg/L	891	862	873	891
			Fluoride	Quarterly	mg/L	0.8	0.8	0.8	0.9

			Standing Water Level	Quarterly	m	1.5	1.5	2.2	3
			Arsenic	Quarterly	mg/L	0.001	0.001	0.004	0.009
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001	0.002
			Copper	Quarterly	mg/L	0.001	0.001	0.003	0.007
			Nickel	Quarterly	mg/L	0.001	0.001	0.002	0.004
			Lead	Quarterly	mg/L	0.001	0.001	0.004	0.01
			Zinc	Quarterly	mg/L	0.005	0.005	0.135	0.308
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
EPL point 6 BH5	21/07/2020	28/07/2020	pH	Quarterly	pH	7.78	7.78	7.8	7.8
			Conductivity	Quarterly	µS/cm	709	709	822	990
			Sodium Absorption Ratio	Quarterly	-	1.04	0.86	1.06	1.27
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	250	250	285	307
			Chloride	Quarterly	mg/L	57	52	75	116
			Sodium	Quarterly	mg/L	37	34	42.3	56
			Nitrogen (total)	Quarterly	mg/L	1.5	0.9	1.7	2.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.2	0.7	1.6	2.8
			Nitrate	Quarterly	mg/L	0.32	0.04	0.17	0.32
			Sulfate	Quarterly	mg/L	62	35	47	62
			Phosphorus	Quarterly	mg/L	1.22	0.37	1.05	1.56
			Reactive Phosphorus	Quarterly	mg/L	0.05	0.05	0.11	0.15
			Total dissolved solids	Quarterly	mg/L	420	405	440	496
			Fluoride	Quarterly	mg/L	0.6	0.6	0.67	0.8
			Standing Water Level	Quarterly	m	1.7	1.7	2.6	3
			Arsenic	Quarterly	mg/L	0.002	0.002	0.003	0.004
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001	0.002
			Copper	Quarterly	mg/L	0.001	0.001	0.002	0.003
			Nickel	Quarterly	mg/L	0.001	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.005	0.005	0.016	0.037			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001			
EPL point 7 BH6	21/07/2020	28/07/2020	pH	Quarterly	pH	8.06	7.53	7.9	8.12
			Conductivity	Quarterly	µS/cm	751	685	760	843
			Sodium Absorption Ratio	Quarterly	-	0.89	0.84	0.91	0.99
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	287	287	306	321
			Chloride	Quarterly	mg/L	72	39	63	79
			Sodium	Quarterly	mg/L	33	33	36	41
			Nitrogen (total)	Quarterly	mg/L	2.3	1.4	2.3	3.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	2.1	0.9	2.1	3.2

			Nitrate	Quarterly	mg/L	0.18	0.11	0.24	0.44
			Sulfate	Quarterly	mg/L	21	1	15	23
			Phosphorus	Quarterly	mg/L	4.32	0.95	2.24	4.32
			Reactive Phosphorus	Quarterly	mg/L	0.41	0.35	0.42	0.5
			Total dissolved solids	Quarterly	mg/L	452	367	432	478
			Fluoride	Quarterly	mg/L	1	0.9	0.9	1
			Standing Water Level	Quarterly	m	0.7	0.7	2.23	3
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.001	0.001	0.0017	0.003
			Nickel	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Lead	Quarterly	mg/L	0.001	0.001	0.01	0.001
			Zinc	Quarterly	mg/L	0.005	0.005	0.01	0.02
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001

Effluent and Groundwater Monitoring Data April 2020

Published: 18 June 2020 Licensee: BOC LIMITED EPL no.: 20165									
Qualifications related to limits Samples taken as per approved methods.									
EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period and Monitoring Frequency Required by Licence	Units	Value	2020 Values to date		
							Min Value	Mean Value	Max Value
EPL point 1 Cooling Tower Effluent	29/04/2020	06/05/2020	pH	Quarterly	pH	8.96	8.65	8.81	8.96
			Electrical conductivity	Quarterly	µS/cm	2,040	1890	1965	2040
			Sodium Absorption Ratio	Quarterly	-	13.3	10.2	11.8	13.3
			Alkalinity as calcium carbonate (hardness)	Quarterly	mg/L	132	106	119	132
			Chloride	Quarterly	mg/L	486	425	455.5	486
			Sodium	Quarterly	mg/L	351	307	329	351
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	<2	<2	<2	<2
			Fluoride	Quarterly	mg/L	2.5	1.3	1.9	2.5
			Nitrogen (total)	Quarterly	mg/L	5	3.4	4.2	5
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.3	1.0	1.2	1.3
			Sulfate	Quarterly	mg/L	198	182	190	198
			Total dissolved solids	Quarterly	mg/L	1,140	1020	1080	1140
			Phosphorus	Quarterly	mg/L	0.06	0.06	0.06	0.06
	Arsenic	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001		
	Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001		
	Chromium	Quarterly	mg/L	0.007	0.003	0.003	0.007		
	Copper	Quarterly	mg/L	0.015	0.002	0.009	0.015		
	Nickel	Quarterly	mg/L	0.001	<0.001	<0.001	<0.001		
	Lead	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001		
	Zinc	Quarterly	mg/L	0.008	0.005	0.007	0.008		
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001			
Biocides (active component isothiazoline)	Quarterly	mg/L	<0.05	<0.05	<0.050	<0.050			
Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1	<0.1			
EPL point 2 BH1	29/04/2020	06/05/2020	pH	Quarterly	pH	7.71	7.71	7.8	8.0
			Conductivity	Quarterly	µS/cm	724	600	662	724
			Sodium Absorption Ratio	Quarterly	-	0.39	0.39	0.43	0.46

			Total Alkalinity as calcium carbonate	Quarterly	mg/L	358	243	301	358
			Chloride	Quarterly	mg/L	24	22	23	24
			Sodium	Quarterly	mg/L	17	17	17	17
			Nitrogen (total)	Quarterly	mg/L	1.7	1.7	8.3	14.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.7	1.7	8.3	14.8
			Nitrate	Quarterly	mg/L	0.01	0.01	0.1	0.12
			Sulfate	Quarterly	mg/L	82	42	62	82
			Phosphorus	Quarterly	mg/L	1.6	1.6	5.11	8.62
			Reactive Phosphorus	Quarterly	mg/L	0.03	0.03	0.05	0.06
			Total dissolved solids	Quarterly	mg/L	421	421	421	421
			Fluoride	Quarterly	mg/L	0.5	0.5	0.6	0.6
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.007	0.001	0.0040	0.007
			Cadmium	Quarterly	mg/L	0.0002	0.0001	0.0002	0.0002
			Chromium	Quarterly	mg/L	0.003	0.001	0.0020	0.003
			Copper	Quarterly	mg/L	0.007	0.001	0.0040	0.007
			Nickel	Quarterly	mg/L	0.003	0.001	0.0020	0.003
			Lead	Quarterly	mg/L	0.011	0.001	0.0060	0.011
			Zinc	Quarterly	mg/L	0.106	0.006	0.0560	0.106
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
EPL point 3 BH2	29/04/2020	06/05/2020	pH	Quarterly	pH	7.62	7.38	7.50	7.62
			Conductivity	Quarterly	µS/cm	652	652	666	679
			Sodium Absorption Ratio	Quarterly	-	0.75	0.36	0.6	0.75
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	263	263	266	268
			Chloride	Quarterly	mg/L	34	18	26	34
			Sodium	Quarterly	mg/L	28	15	22	28
			Nitrogen (total)	Quarterly	mg/L	24.5	11.4	18.0	24.5
			Total Kjeldahl Nitrogen	Quarterly	mg/L	24.5	11.3	17.9	24.5
			Nitrate	Quarterly	mg/L	0.03	0.03	0.08	0.12
			Sulfate	Quarterly	mg/L	34	34	48	61
			Phosphorus	Quarterly	mg/L	4.7	4.7	5.05	5.39
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.01	0.010	0.01
			Total dissolved solids	Quarterly	mg/L	369	347	358	369
			Fluoride	Quarterly	mg/L	0.5	0.5	0.7	0.8
			Standing Water Level	Quarterly	m	2	2	2.5	3
			Arsenic	Quarterly	mg/L	0.002	0.001	0.0015	0.002
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.0010	0.001
			Copper	Quarterly	mg/L	0.005	0.001	0.0030	0.005
			Nickel	Quarterly	mg/L	0.001	0.001	0.0010	0.001

			Lead	Quarterly	mg/L	0.001	0.001	0.0010	0.001
			Zinc	Quarterly	mg/L	0.043	0.020	0.0315	0.043
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
EPL point 4 BH3	29/04/2020	06/05/2020	pH	Quarterly	pH	7.77	7.77	7.905	8.04
			Conductivity	Quarterly	µS/cm	564	440	502	564
			Sodium Absorption Ratio	Quarterly	-	0.62	0.62	0.64	0.66
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	234	182	208	234
			Chloride	Quarterly	mg/L	18	14	16	18
			Sodium	Quarterly	mg/L	22	20	21	22
			Nitrogen (total)	Quarterly	mg/L	1.1	1.1	1.9	2.6
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1	1	1.8	2.5
			Nitrate	Quarterly	mg/L	0.06	0.06	0.09	0.11
			Sulfate	Quarterly	mg/L	38	24	31	38
			Phosphorus	Quarterly	mg/L	1.35	1.35	4	6.76
			Reactive Phosphorus	Quarterly	mg/L	0.13	0.13	0.20	0.27
			Total dissolved solids	Quarterly	mg/L	310	221	266	310
			Fluoride	Quarterly	mg/L	0.5	0.5	0.55	0.6
			Standing Water Level	Quarterly	m	2	2	3	4
			Arsenic	Quarterly	mg/L	0.004	0.003	0.004	0.004
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.000	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.004	0.001	0.003	0.004
			Nickel	Quarterly	mg/L	0.001	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.027	0.005	0.016	0.027			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001			
EPL point 5 BH4	29/04/2020	06/05/2020	pH	Quarterly	pH	7.53	7.27	7.40	7.53
			Conductivity	Quarterly	µS/cm	1,550	1450	1500	1550
			Sodium Absorption Ratio	Quarterly	-	3.34	3.34	3.49	3.63
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	446	263	355	446
			Chloride	Quarterly	mg/L	295	224	260	295
			Sodium	Quarterly	mg/L	162	159	161	162
			Nitrogen (total)	Quarterly	mg/L	2.4	2.4	33.4	64.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	2.4	2.4	33.3	64.2
			Nitrate	Quarterly	mg/L	0.01	0.01	0.030	0.05
			Sulfate	Quarterly	mg/L	192	170	181	192
			Phosphorus	Quarterly	mg/L	1.08	1.08	181.54	362.00
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.01	0.030	0.05
			Total dissolved solids	Quarterly	mg/L	862	862	864	866
Fluoride	Quarterly	mg/L	0.8	0.8	0.9	0.9			

			Standing Water Level	Quarterly	m	3	2	2.5	3
			Arsenic	Quarterly	mg/L	0.009	0.001	0.005	0.009
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.002	0.001	0.002	0.002
			Copper	Quarterly	mg/L	0.007	0.001	0.004	0.007
			Nickel	Quarterly	mg/L	0.004	0.001	0.003	0.004
			Lead	Quarterly	mg/L	0.01	0.001	0.006	0.01
			Zinc	Quarterly	mg/L	0.093	0.093	0.201	0.308
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
EPL point 6 BH5	29/04/2020	06/05/2020	pH	Quarterly	pH	7.8	7.8	7.81	7.82
			Conductivity	Quarterly	µS/cm	766	766	878	990
			Sodium Absorption Ratio	Quarterly	-	0.86	0.86	1.07	1.27
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	297	297	302	307
			Chloride	Quarterly	mg/L	52	52	84	116
			Sodium	Quarterly	mg/L	34	34	45	56
			Nitrogen (total)	Quarterly	mg/L	0.9	0.9	1.9	2.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.7	0.7	1.8	2.8
			Nitrate	Quarterly	mg/L	0.16	0.04	0.10	0.16
			Sulfate	Quarterly	mg/L	44	35	40	44
			Phosphorus	Quarterly	mg/L	0.37	0.37	0.97	1.56
			Reactive Phosphorus	Quarterly	mg/L	0.12	0.12	0.14	0.15
			Total dissolved solids	Quarterly	mg/L	405	405	451	496
			Fluoride	Quarterly	mg/L	0.6	0.6	0.70	0.8
			Standing Water Level	Quarterly	m	3	3	3	3
			Arsenic	Quarterly	mg/L	0.004	0.002	0.003	0.004
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.002	0.001	0.002	0.002
			Copper	Quarterly	mg/L	0.003	0.001	0.002	0.003
			Nickel	Quarterly	mg/L	0.001	0.001	0.001	0.001
Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001			
Zinc	Quarterly	mg/L	0.037	0.006	0.022	0.037			
Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001			
EPL point 7 BH6	29/04/2020	06/05/2020	pH	Quarterly	pH	7.53	7.53	7.825	8.12
			Conductivity	Quarterly	µS/cm	685	685	764	843
			Sodium Absorption Ratio	Quarterly	-	0.84	0.84	0.92	0.99
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	310	310	316	321
			Chloride	Quarterly	mg/L	39	39	59	79
			Sodium	Quarterly	mg/L	34	34	38	41
			Nitrogen (total)	Quarterly	mg/L	1.4	1.4	2.4	3.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.9	0.9	2.1	3.2

			Nitrate	Quarterly	mg/L	0.44	0.11	0.28	0.44
			Sulfate	Quarterly	mg/L	23	1	12.00	23
			Phosphorus	Quarterly	mg/L	0.95	0.95	1.20	1.45
			Reactive Phosphorus	Quarterly	mg/L	0.5	0.35	0.43	0.5
			Total dissolved solids	Quarterly	mg/L	367	367	423	478
			Fluoride	Quarterly	mg/L	0.9	0.9	0.9	0.9
			Standing Water Level	Quarterly	m	3	3	3	3
			Arsenic	Quarterly	mg/L	0.001	0.001	0.0010	0.001
			Cadmium	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.003	0.001	0.002	0.003
			Nickel	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Zinc	Quarterly	mg/L	0.02	0.009	0.0145	0.02
			Mercury	Quarterly	mg/L	0.0001	0.0001	0.0001	0.0001

Effluent and Groundwater Monitoring Data January 2020

Published: 18 March, 2020 Licensee: BOC LIMITED EPL no.: 20165									
Qualifications related to limits Samples taken as per approved methods.									
EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period and Monitoring Frequency Required by Licence	Units	Value 29/01/2020	2020 Values to date		
							Min Value	Mean Value	Max Value
EPL point 1 Cooling Tower Effluent	29/01/2020	17/03/2020	pH	Quarterly	pH	8.65	8.65	8.65	8.65
			Electrical conductivity	Quarterly	µS/cm	1,890	1,890	1,890	1,890
			Sodium Absorption Ratio	Quarterly	-	10.2	10.2	10.2	10.2
			Alkalinity as calcium carbonate (hardness)	Quarterly	mg/L	106	106	106	106
			Chloride	Quarterly	mg/L	425	425	425	425
			Sodium	Quarterly	mg/L	307	307	307	307
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	<2	<2	<2	<2
			Fluoride	Quarterly	mg/L	1.3	1.3	1.3	1.3
			Nitrogen (total)	Quarterly	mg/L	3.4	3.4	3.4	3.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.0	1.0	1.0	1.0
			Sulfate	Quarterly	mg/L	182	182	182	182
			Total dissolved solids	Quarterly	mg/L	1,020	1,020	1,020	1,020
			Phosphorus	Quarterly	mg/L	0.06	0.06	0.06	0.06
			Arsenic	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	0.003	0.003	0.003	0.003
			Copper	Quarterly	mg/L	0.002	0.002	0.002	0.002
			Nickel	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Zinc	Quarterly	mg/L	<0.005	<0.005	<0.005	<0.005
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001			
Biocides (active component isothiazoline)	Quarterly	mg/L	<0.1	<0.1	<0.1	<0.1			
Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1	<0.1			
EPL point 2 BH1	29/01/2020	17/03/2020	pH	Quarterly	pH	7.97	7.97	7.97	7.97
			Conductivity	Quarterly	µS/cm	600	600	600	600
			Sodium Absorption Ratio	Quarterly	-	0.46	0.46	0.46	0.46

			Total Alkalinity as calcium carbonate	Quarterly	mg/L	243	243	243	243
			Chloride	Quarterly	mg/L	22	22	22	22
			Sodium	Quarterly	mg/L	17	17	17	17
			Nitrogen (total)	Quarterly	mg/L	14.9	14.9	14.9	14.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	14.8	14.8	14.8	14.8
			Nitrate	Quarterly	mg/L	0.12	0.12	0.12	0.12
			Sulfate	Quarterly	mg/L	42	42	42	42
			Phosphorus	Quarterly	mg/L	8.62	8.62	8.62	8.62
			Reactive Phosphorus	Quarterly	mg/L	0.06	0.06	0.06	0.06
			Total dissolved solids	Quarterly	mg/L	421	421	421	421
			Fluoride	Quarterly	mg/L	0.6	0.6	0.6	0.6
			Standing Water Level	Quarterly	m	2.0	2.0	2.0	2.0
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Nickel	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Zinc	Quarterly	mg/L	0.006	0.006	0.006	0.006
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 4 BH3	29/01/2020	17/03/2020	pH	Quarterly	pH	7.38	7.38	7.38	7.38
			Conductivity	Quarterly	µS/cm	679	679	679	679
			Sodium Absorption Ratio	Quarterly	-	0.36	0.36	0.36	0.36
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	268	268	268	268
			Chloride	Quarterly	mg/L	18	18	18	18
			Sodium	Quarterly	mg/L	15	15	15	15
			Nitrogen (total)	Quarterly	mg/L	11.4	11.4	11.4	11.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	11.3	11.3	11.3	11.3
			Nitrate	Quarterly	mg/L	0.12	0.12	0.12	0.12
			Sulfate	Quarterly	mg/L	61	61	61	61
			Phosphorus	Quarterly	mg/L	5.39	5.39	5.39	5.39
			Reactive Phosphorus	Quarterly	mg/L	<0.01	<0.01	<0.01	<0.01
			Total dissolved solids	Quarterly	mg/L	347	347	347	347
			Fluoride	Quarterly	mg/L	0.8	0.8	0.8	0.8
			Standing Water Level	Quarterly	m	3	3	3	3
			Arsenic	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001			

			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Nickel	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Zinc	Quarterly	mg/L	0.020	0.020	0.020	0.020
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 5 BH4	29/01/2020	17/03/2020	pH	Quarterly	pH	8.04	8.04	8.04	8.04
			Conductivity	Quarterly	µS/cm	440	440	440	440
			Sodium Absorption Ratio	Quarterly	-	0.66	0.66	0.66	0.66
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	182	182	182	182
			Chloride	Quarterly	mg/L	14	14	14	14
			Sodium	Quarterly	mg/L	20	20	20	20
			Nitrogen (total)	Quarterly	mg/L	2.6	2.6	2.6	2.6
			Total Kjeldahl Nitrogen	Quarterly	mg/L	2.5	2.5	2.5	2.5
			Nitrate	Quarterly	mg/L	0.11	0.11	0.11	0.11
			Sulfate	Quarterly	mg/L	24	24	24	24
			Phosphorus	Quarterly	mg/L	6.76	6.76	6.76	6.76
			Reactive Phosphorus	Quarterly	mg/L	0.27	0.27	0.27	0.27
			Total dissolved solids	Quarterly	mg/L	221	221	221	221
			Fluoride	Quarterly	mg/L	0.6	0.6	0.6	0.6
			Standing Water Level	Quarterly	m	4	4	4	4
			Arsenic	Quarterly	mg/L	0.003	0.003	0.003	0.003
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Nickel	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Zinc	Quarterly	mg/L	<0.005	<0.005	<0.005	<0.005
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 6 BH5	29/01/2020	17/03/2020	pH	Quarterly	pH	7.82	7.82	7.82	7.82
			Conductivity	Quarterly	µS/cm	990	990	990	990
			Sodium Absorption Ratio	Quarterly	-	1.27	1.27	1.27	1.27
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	307	307	307	307
			Chloride	Quarterly	mg/L	116	116	116	116
			Sodium	Quarterly	mg/L	56	56	56	56
			Nitrogen (total)	Quarterly	mg/L	2.8	2.8	2.8	2.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	2.8	2.8	2.8	2.8
			Nitrate	Quarterly	mg/L	0.04	0.04	0.04	0.04
			Sulfate	Quarterly	mg/L	35	35	35	35

			Phosphorus	Quarterly	mg/L	1.56	1.56	1.56	1.56
			Reactive Phosphorus	Quarterly	mg/L	0.15	0.15	0.15	0.15
			Total dissolved solids	Quarterly	mg/L	496	496	496	496
			Fluoride	Quarterly	mg/L	0.8	0.8	0.8	0.8
			Standing Water Level	Quarterly	m	3	3	3	3
			Arsenic	Quarterly	mg/L	0.002	0.002	0.002	0.002
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Nickel	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Zinc	Quarterly	mg/L	0.006	0.006	0.006	0.006
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 7 BH6	29/01/2020	17/03/2020	pH	Quarterly	pH	8.12	8.12	8.12	8.12
			Conductivity	Quarterly	µS/cm	843	843	843	843
			Sodium Absorption Ratio	Quarterly	-	0.99	0.99	0.99	0.99
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	321	321	321	321
			Chloride	Quarterly	mg/L	79	79	79	79
			Sodium	Quarterly	mg/L	41	41	41	41
			Nitrogen (total)	Quarterly	mg/L	3.3	3.3	3.3	3.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	3.2	3.2	3.2	3.2
			Nitrate	Quarterly	mg/L	0.11	0.11	0.11	0.11
			Sulfate	Quarterly	mg/L	<1	<1	<1	<1
			Phosphorus	Quarterly	mg/L	1.45	1.45	1.45	1.45
			Reactive Phosphorus	Quarterly	mg/L	0.35	0.35	0.35	0.35
			Total dissolved solids	Quarterly	mg/L	478	478	478	478
			Fluoride	Quarterly	mg/L	0.9	0.9	0.9	0.9
			Standing Water Level	Quarterly	m	3	3	3	3
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Nickel	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Zinc	Quarterly	mg/L	0.009	0.009	0.009	0.009
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001

Effluent and Groundwater Monitoring Data October 2019

Published: 20 November 2019 Licensee: BOC LIMITED EPL no.: 20165									
Qualifications related to limits Samples taken as per approved methods.									
EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period and Monitoring Frequency Required by Licence	Units	Value 22/10/2019	2019 Values to date		
							Min Value	Mean Value	Max Value
EPL point 1 Cooling Tower Effluent	22/10/2019	18/11/2019	pH	Quarterly	pH	8.44	8.21	8.52	9.14
			Electrical conductivity	Quarterly	µS/cm	2030	1660	1998	2490
			Sodium Absorption Ratio	Quarterly	-	5.75	4.16	10.3	21.4
			Alkalinity as calcium carbonate (hardness)	Quarterly	mg/L	142	57	121	218
			Chloride	Quarterly	mg/L	433	404	436.75	482
			Sodium	Quarterly	mg/L	246	232	286	401
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	<2	<2	<2	<2
			Fluoride	Quarterly	mg/L	0.3	0.3	1.1	2.8
			Nitrogen (total)	Quarterly	mg/L	3.4	3.2	4.375	5.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.8	0.8	1	1.8
			Sulfate	Quarterly	mg/L	201	112	207	318
			Total dissolved solids	Quarterly	mg/L	1,280	904	1139	1340
			Phosphorus	Quarterly	mg/L	0.08	0.06	0.13	0.21
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Zinc	Quarterly	mg/L	0.007	0.006	0.040	0.136
			Arsenic	Quarterly	mg/L	<0.001	<0.001	0.001	0.002
			Chromium	Quarterly	mg/L	0.001	<0.001	0.006	0.018
			Copper	Quarterly	mg/L	0.02	0.01	0.023	0.033
			Lead	Quarterly	mg/L	<0.001	<0.001	0.002	0.006
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	Quarterly	mg/L	<0.001	<0.001	0.001	0.002			
Biocides (active component isothiazoline)	Quarterly	mg/L	<0.05	<0.05	<0.06	<0.1			
Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1	<0.1			
EPL point 2 BH1	22/10/2019	18/11/2019	pH	Quarterly	pH	7.6	7.6	7.7	7.9
			Conductivity	Quarterly	µS/cm	564	486	565	682
			Sodium Absorption Ratio	Quarterly	-	0.51	0.48	0.59	0.82

			Total Alkalinity as calcium carbonate	Quarterly	mg/L	180	180	208	226
			Chloride	Quarterly	mg/L	27	17	21	27
			Sodium	Quarterly	mg/L	20	19	22	26
			Nitrogen (total)	Quarterly	mg/L	1.9	1.9	14.0	39.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.8	1.8	13.9	39.3
			Nitrate	Quarterly	mg/L	0.06	<0.01	0.05	0.07
			Sulfate	Quarterly	mg/L	46	14	55	93
			Phosphorus	Quarterly	mg/L	3.63	2.38	7.38	17.5
			Reactive Phosphorus	Quarterly	mg/L	0.03	0.02	0.02	0.03
			Total dissolved solids	Quarterly	mg/L	367	367	772	1,550
			Fluoride	Quarterly	mg/L	0.5	0.5	0.55	0.6
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.002	<0.001	0.001	0.002
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	0.002	<0.001	0.0009	0.002
			Nickel	Quarterly	mg/L	0.002	<0.001	0.0009	0.002
			Lead	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Zinc	Quarterly	mg/L	0.006	<0.005	0.003	0.006
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 3 BH2	22/10/2019	18/11/2019	pH	Quarterly	pH	7.36	7.33	7.44	7.62
			Conductivity	Quarterly	µS/cm	628	511	681	879
			Sodium Absorption Ratio	Quarterly	-	0.33	0.28	8.0	31
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	234	220	245	274
			Chloride	Quarterly	mg/L	18	15	18	20
			Sodium	Quarterly	mg/L	13	13	14	15
			Nitrogen (total)	Quarterly	mg/L	1.1	1.1	6.6	14.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.1	1.1	6.4	14.8
			Nitrate	Quarterly	mg/L	0.01	0.01	0.17	0.60
			Sulfate	Quarterly	mg/L	41	24	80	137
			Phosphorus	Quarterly	mg/L	1.15	1.04	3.7	9.58
			Reactive Phosphorus	Quarterly	mg/L	<0.01	<0.01	0.006	0.01
			Total dissolved solids	Quarterly	mg/L	395	395	505	649
			Fluoride	Quarterly	mg/L	0.9	0.8	0.9	1
			Standing Water Level	Quarterly	m	3	2	2	3
			Arsenic	Quarterly	mg/L	0.002	<0.001	0.004	0.011
Cadmium	Quarterly	mg/L	<0.0001	<0.0001	0.0001	0.0002			

			Chromium	Quarterly	mg/L	<0.001	<0.001	0.004	0.014
			Copper	Quarterly	mg/L	<0.001	<0.001	0.009	0.033
			Nickel	Quarterly	mg/L	0.002	<0.001	0.007	0.024
			Lead	Quarterly	mg/L	<0.001	<0.001	0.036	0.14
			Zinc	Quarterly	mg/L	<0.01	0.008	0.26	1.02
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 4 BH3	22/10/2019	18/11/2019	pH	Quarterly	pH	7.87	7.56	7.81	7.91
			Conductivity	Quarterly	µS/cm	422	422	512	555
			Sodium Absorption Ratio	Quarterly	-	0.87	0.73	0.88	1.00
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	133	133	168	189
			Chloride	Quarterly	mg/L	18	18	30	41
			Sodium	Quarterly	mg/L	25	25	29	36
			Nitrogen (total)	Quarterly	mg/L	0.8	0.8	4.6	11.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.7	0.7	4.5	11.4
			Nitrate	Quarterly	mg/L	0.07	<0.01	0.09	0.27
			Sulfate	Quarterly	mg/L	36	36	41	48
			Phosphorus	Quarterly	mg/L	2.8	2.8	10	21.5
			Reactive Phosphorus	Quarterly	mg/L	0.18	0.18	0.20	0.22
			Total dissolved solids	Quarterly	mg/L	256	256	349	471
			Fluoride	Quarterly	mg/L	0.5	0.5	0.58	0.6
			Standing Water Level	Quarterly	m	4	2	2.5	4
			Arsenic	Quarterly	mg/L	0.003	0.002	0.003	0.004
			Cadmium	Quarterly	mg/L	0.0004	<0.0001	0.0001	0.0004
			Chromium	Quarterly	mg/L	0.001	<0.001	0.0006	0.001
			Copper	Quarterly	mg/L	0.006	<0.001	0.003	0.006
			Nickel	Quarterly	mg/L	0.006	<0.001	0.002	0.006
Lead	Quarterly	mg/L	<0.001	<0.001	0.002	0.006			
Zinc	Quarterly	mg/L	0.042	<0.005	0.13	0.49			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001			
EPL point 5 BH4	22/10/2019	18/11/2019	pH	Quarterly	pH	7.30	7.19	7.35	7.64
			Conductivity	Quarterly	µS/cm	1,380	1,380	1,628	1,890
			Sodium Absorption Ratio	Quarterly	-	3.43	2.74	3.15	3.43
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	201	197	205	217
			Chloride	Quarterly	mg/L	207	207	276	308
			Sodium	Quarterly	mg/L	150	135	154	171
			Nitrogen (total)	Quarterly	mg/L	6.9	3.5	18.9	55
			Total Kjeldahl Nitrogen	Quarterly	mg/L	6.9	3.5	18.9	55
			Nitrate	Quarterly	mg/L	0.03	0.03	0.03	0.04
			Sulfate	Quarterly	mg/L	152	152	208	248

			Phosphorus	Quarterly	mg/L	3.28	3.28	21.4	53.9
			Reactive Phosphorus	Quarterly	mg/L	<0.01	<0.01	0.006	0.01
			Total dissolved solids	Quarterly	mg/L	840	840	1,068	1,170
			Fluoride	Quarterly	mg/L	0.8	0.8	0.8	0.9
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.002	<0.001	0.003	0.005
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	0.0009	0.002
			Nickel	Quarterly	mg/L	<0.001	<0.001	0.0009	0.002
			Lead	Quarterly	mg/L	<0.001	<0.001	0.0006	0.001
			Zinc	Quarterly	mg/L	0.006	<0.005	0.015	0.048
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 6 BH5	22/10/2019	18/11/2019	pH	Quarterly	pH	7.81	7.64	7.77	7.93
			Conductivity	Quarterly	µS/cm	734	676	994	1,890
			Sodium Absorption Ratio	Quarterly	-	0.91	0.61	0.84	1.02
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	203	203	234	260
			Chloride	Quarterly	mg/L	67	39	52	67
			Sodium	Quarterly	mg/L	37	26	34	42
			Nitrogen (total)	Quarterly	mg/L	1.9	1.9	3.9	6.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.6	1.6	3.2	4.3
			Nitrate	Quarterly	mg/L	0.31	0.06	0.75	1.92
			Sulfate	Quarterly	mg/L	32	16	31	38
			Phosphorus	Quarterly	mg/L	3.76	2.27	3.08	3.96
			Reactive Phosphorus	Quarterly	mg/L	0.30	0.04	0.16	0.30
			Total dissolved solids	Quarterly	mg/L	434	408	433	469
			Fluoride	Quarterly	mg/L	0.8	0.6	0.7	0.8
			Standing Water Level	Quarterly	m	3	2	2.3	3
			Arsenic	Quarterly	mg/L	0.002	0.001	0.003	0.007
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	0.0002	0.0006
			Chromium	Quarterly	mg/L	<0.001	<0.001	0.004	0.016
			Copper	Quarterly	mg/L	<0.001	<0.001	0.003	0.011
			Nickel	Quarterly	mg/L	<0.001	<0.001	0.003	0.006
			Lead	Quarterly	mg/L	<0.001	<0.001	0.009	0.036
			Zinc	Quarterly	mg/L	<0.005	<0.005	0.101	0.390
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 7 BH6	22/10/2019	18/11/2019	pH	Quarterly	pH	8.03	7.96	8.06	8.13
			Conductivity	Quarterly	µS/cm	712	601	655	712
			Sodium Absorption Ratio	Quarterly	-	0.82	0.74	0.82	0.90

			Total Alkalinity as calcium carbonate	Quarterly	mg/L	222	222	235	253
			Chloride	Quarterly	mg/L	59	35	49	62
			Sodium	Quarterly	mg/L	32	28	32	35
			Nitrogen (total)	Quarterly	mg/L	1.6	1.6	3.9	7.1
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.2	1.2	3.0	7.1
			Nitrate	Quarterly	mg/L	0.39	<0.01	0.32	0.86
			Sulfate	Quarterly	mg/L	11	3	9	17
			Phosphorus	Quarterly	mg/L	1.58	1.58	2.48	3.04
			Reactive Phosphorus	Quarterly	mg/L	0.45	0.38	0.41	0.45
			Total dissolved solids	Quarterly	mg/L	419	360	422	488
			Fluoride	Quarterly	mg/L	0.9	0.9	1.0	1.0
			Standing Water Level	Quarterly	m	3	2	2.3	3
			Arsenic	Quarterly	mg/L	<0.001	<0.001	0.0009	0.001
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	0.0006	0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	0.0009	0.002
			Nickel	Quarterly	mg/L	<0.001	<0.001	0.0006	0.001
			Lead	Quarterly	mg/L	<0.001	<0.001	0.0009	0.002
			Zinc	Quarterly	mg/L	<0.005	<0.005	0.023	0.084
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001

Effluent and Groundwater Monitoring Data July 2019

Published: 10 September 2019 Licensee: BOC LIMITED EPL no.: 20165									
Qualifications related to limits Samples taken as per approved methods.									
EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period and Monitoring Frequency Required by Licence	Units	Value 10/07/2019	2019 Values to date		
							Min Value	Mean Value	Max Value
EPL point 1 Cooling Tower Effluent	10/07/2019	31/07/2019	pH	Quarterly	pH	8.3	8.21	8.54	9.14
			Electrical conductivity	Quarterly	µS/cm	2,490	1,660	1,987	2,490
			Sodium Absorption Ratio	Quarterly	-	4.16	4.16	11.9	21.4
			Alkalinity as calcium carbonate (hardness)	Quarterly	mg/L	218	57	114	218
			Chloride	Quarterly	mg/L	428	404	438	482
			Sodium	Quarterly	mg/L	232	232	299	401
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	2	2	2	2
			Fluoride	Quarterly	mg/L	1.1	0.5	1.3	2.8
			Nitrogen (total)	Quarterly	mg/L	5	3.2	4.7	5.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.7	0.9	1	1.8
			Sulfate	Quarterly	mg/L	318	112	208	318
			Total dissolved solids	Quarterly	mg/L	1,340	904	1,091	1,340
			Phosphorus	Quarterly	mg/L	0.21	0.06	0.14	0.21
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Zinc	Quarterly	mg/L	0.009	0.006	0.050	0.136
			Arsenic	Quarterly	mg/L	0.001	<0.001	0.001	0.002
			Chromium	Quarterly	mg/L	<0.001	<0.001	0.007	0.018
			Copper	Quarterly	mg/L	0.033	0.01	0.024	0.033
			Lead	Quarterly	mg/L	<0.001	<0.001	0.002	0.006
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	Quarterly	mg/L	0.002	<0.001	0.0015	0.002			
		09/09/2019	Biocides (active component isothiazoline)	Quarterly	mg/L	<0.05	< 0.05	< 0.05	< 0.1
		09/09/2019	Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
EPL point 2 BH1	10/07/2019	31/07/2019	pH	Quarterly	pH	7.76	7.76	7.8	7.85
			Conductivity	Quarterly	µS/cm	682	486	565	682
			Sodium Absorption Ratio	Quarterly	-	0.48	0.48	0.61	0.82

			Total Alkalinity as calcium carbonate	Quarterly	mg/L	202	202	217	226
			Chloride	Quarterly	mg/L	20	17	19	20
			Sodium	Quarterly	mg/L	19	19	22	26
			Nitrogen (total)	Quarterly	mg/L	4.6	4.6	18.0	39.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	4.5	4.5	18.0	39.3
			Nitrate	Quarterly	mg/L	0.07	<0.01	0.05	0.07
			Sulfate	Quarterly	mg/L	93	14	57	93
			Phosphorus	Quarterly	mg/L	2.38	2.38	8.63	17.5
			Reactive Phosphorus	Quarterly	mg/L	0.02	0.02	0.02	0.02
			Total dissolved solids	Quarterly	mg/L	452	452	907	1550
			Fluoride	Quarterly	mg/L	0.5	0.5	0.57	0.6
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	<0.001	<0.001	0.001	0.002
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Nickel	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Zinc	Quarterly	mg/L	<0.005	<0.005	<0.005	<0.005
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 3 BH2	10/07/2019	31/07/2019	pH	Quarterly	pH	7.62	7.33	7.47	7.62
			Conductivity	Quarterly	µS/cm	879	511	698	879
			Sodium Absorption Ratio	Quarterly	-	0.28	0.28	11	31
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	274	220	249	274
			Chloride	Quarterly	mg/L	20	15	18	20
			Sodium	Quarterly	mg/L	13	13	14	15
			Nitrogen (total)	Quarterly	mg/L	3.7	3.7	8.4	14.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	3.1	3.1	8.2	14.8
			Nitrate	Quarterly	mg/L	0.6	0.02	0	0.6
			Sulfate	Quarterly	mg/L	119	24	93	137
			Phosphorus	Quarterly	mg/L	1.04	1.04	4.61	9.58
			Reactive Phosphorus	Quarterly	mg/L	<0.01	0.01	0.007	0.01
			Total dissolved solids	Quarterly	mg/L	528	448	542	649
			Fluoride	Quarterly	mg/L	0.8	0.8	0.9	1
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	<0.001	<0.001	0.004	0.011
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	0.0001	0.0002

			Chromium	Quarterly	mg/L	<0.001	<0.001	0.005	0.014
			Copper	Quarterly	mg/L	<0.001	<0.001	0.011	0.033
			Nickel	Quarterly	mg/L	<0.001	<0.001	0.008	0.024
			Lead	Quarterly	mg/L	0.002	<0.001	0.048	0.140
			Zinc	Quarterly	mg/L	0.016	<0.008	0.348	1.02
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 4 BH3	10/07/2019	31/07/2019	pH	Quarterly	pH	7.9	7.56	7.79	7.91
			Conductivity	Quarterly	µS/cm	534	534	542	555
			Sodium Absorption Ratio	Quarterly	-	0.73	0.73	0.89	1.00
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	171	171	180	189
			Chloride	Quarterly	mg/L	22	22	34	41
			Sodium	Quarterly	mg/L	25	25	31	36
			Nitrogen (total)	Quarterly	mg/L	4.3	2	5.9	11.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	4	2	5.8	11.4
			Nitrate	Quarterly	mg/L	0.27	<0.01	0.10	0.27
			Sulfate	Quarterly	mg/L	42	38	43	48
			Phosphorus	Quarterly	mg/L	8.89	7.07	12	21.5
			Reactive Phosphorus	Quarterly	mg/L	0.19	0.19	0.2	0.22
			Total dissolved solids	Quarterly	mg/L	281	281	380	471
			Fluoride	Quarterly	mg/L	0.6	0.6	0.6	0.6
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.002	0.002	0.003	0.004
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	0.001	0.003
			Nickel	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	<0.001	<0.001	0.002	0.006
			Zinc	Quarterly	mg/L	<0.005	<0.005	0.165	0.491
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 5 BH4	10/07/2019	31/07/2019	pH	Quarterly	pH	7.64	7.19	7.37	7.64
			Conductivity	Quarterly	µS/cm	1,890	1,620	1,710	1,890
			Sodium Absorption Ratio	Quarterly	-	3.22	2.74	3.06	3.22
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	217	197	206	217
			Chloride	Quarterly	mg/L	293	293	298	308
			Sodium	Quarterly	mg/L	158	135	155	171
			Nitrogen (total)	Quarterly	mg/L	3.5	3.5	22.8	55
			Total Kjeldahl Nitrogen	Quarterly	mg/L	3.5	3.5	22.8	55
			Nitrate	Quarterly	mg/L	0.03	0.03	0.033	0.04
			Sulfate	Quarterly	mg/L	220	212	227	248

			Phosphorus	Quarterly	mg/L	7.37	7.37	27.5	53.9
			Reactive Phosphorus	Quarterly	mg/L	<0.01	0.01	0.007	0.01
			Total dissolved solids	Quarterly	mg/L	1,100	1,100	1,143	1,170
			Fluoride	Quarterly	mg/L	0.8	0.8	0.9	0.9
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	<0.001	<0.001	0.003	0.005
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	0.001	0.002
			Nickel	Quarterly	mg/L	0.002	<0.001	0.001	0.002
			Lead	Quarterly	mg/L	<0.001	<0.001	0.0007	0.001
			Zinc	Quarterly	mg/L	<0.005	<0.005	0.018	0.048
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 6 BH5	10/07/2019	31/07/2019	pH	Quarterly	pH	7.93	7.64	7.75	7.93
			Conductivity	Quarterly	µS/cm	1890	676	1,081	1,890
			Sodium Absorption Ratio	Quarterly	-	0.8	0.61	0.81	1.02
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	242	232	245	260
			Chloride	Quarterly	mg/L	39	39	46	53
			Sodium	Quarterly	mg/L	31	26	33	42
			Nitrogen (total)	Quarterly	mg/L	4	3.5	4.6	6.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	3.3	3.3	3.7	4.3
			Nitrate	Quarterly	mg/L	0.7	0.06	0.89	1.92
			Sulfate	Quarterly	mg/L	38	16	31	38
			Phosphorus	Quarterly	mg/L	3.96	2.27	2.85	3.96
			Reactive Phosphorus	Quarterly	mg/L	0.17	0.04	0.11	0.17
			Total dissolved solids	Quarterly	mg/L	408	408	432	469
			Fluoride	Quarterly	mg/L	0.7	0.6	0.67	0.7
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.001	0.001	0.003	0.007
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	0.0002	0.0006
			Chromium	Quarterly	mg/L	<0.001	<0.001	0.006	0.016
			Copper	Quarterly	mg/L	<0.001	<0.001	0.004	0.011
			Nickel	Quarterly	mg/L	0.003	<0.001	0.003	0.006
			Lead	Quarterly	mg/L	<0.001	<0.001	0.012	0.036
			Zinc	Quarterly	mg/L	0.007	<0.005	0.133	0.390
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 7 BH6	10/07/2019	31/07/2019	pH	Quarterly	pH	8.13	7.96	8.07	8.13
			Conductivity	Quarterly	µS/cm	688	601	636	688
			Sodium Absorption Ratio	Quarterly	-	0.74	0.74	0.82	0.9

			Total Alkalinity as calcium carbonate	Quarterly	mg/L	241	224	239	253
			Chloride	Quarterly	mg/L	35	35	45	62
			Sodium	Quarterly	mg/L	28	28	31	35
			Nitrogen (total)	Quarterly	mg/L	5	1.9	4.7	7.1
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.7	1.7	3.6	7.1
			Nitrate	Quarterly	mg/L	0.86	0.01	0.30	0.86
			Sulfate	Quarterly	mg/L	17	3	8	17
			Phosphorus	Quarterly	mg/L	2.36	2.36	2.78	3.04
			Reactive Phosphorus	Quarterly	mg/L	0.42	0.38	0.40	0.42
			Total dissolved solids	Quarterly	mg/L	360	360	423	488
			Fluoride	Quarterly	mg/L	0.9	0.9	1.0	1
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	0.0008	0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	0.001	0.002
			Nickel	Quarterly	mg/L	0.001	<0.001	0.0007	0.001
			Lead	Quarterly	mg/L	<0.001	<0.001	0.001	0.002
			Zinc	Quarterly	mg/L	<0.005	<0.005	0.030	0.084
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001

Effluent and Groundwater Monitoring Data April-May 2019

Published: 24 May 2019 Licensee: BOC LIMITED EPL no.: 20165										
Qualifications related to limits Samples taken as per approved methods.										
EPA Point ID	Sampling Date(s)	Date Results Received	Pollutant	Measurement Period and Monitoring Frequency Required by Licence	Units	Value 18/04/2019	Value 13/05/2019*	2019 Values to date		
								Min Value	Mean Value	Max Value
EPL point 1 Cooling Tower Effluent	18/04/2019 and 13/05/2019	22/05/2019	pH	Quarterly	pH	9.14	8.21	8.21	8.61	9.14
			Electrical conductivity	Quarterly	µS/cm	1810	-	1660	1735	1810
			Sodium Absorption Ratio	Quarterly	-	21.4	-	10	15.7	21.4
			Alkalinity as calcium carbonate (hardness)	Quarterly	mg/L	68	-	57	63	68
			Chloride	Quarterly	mg/L	482	-	404	443	482
			Sodium	Quarterly	mg/L	401	-	263	332	401
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	<2	-	<2	<2	<2
			Fluoride	Quarterly	mg/L	2.8	0.5	0.5	1.4	2.8
			Nitrogen (total)	Quarterly	mg/L	5.9	-	3.2	4.6	5.9
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.8	-	0.9	1.4	1.8
			Sulfate	Quarterly	mg/L	195	-	112	154	195
			Total dissolved solids	Quarterly	mg/L	904	-	904	967	1030
			Phosphorus	Quarterly	mg/L	0.06	-	0.06	0.11	0.15
			Cadmium	Quarterly	mg/L	<0.0001	-	<0.0001	<0.0001	<0.0001
			Zinc	Quarterly	mg/L	0.006	-	0.006	0.071	0.136
			Arsenic	Quarterly	mg/L	<0.001	-	<0.001	0.0015	0.002
			Chromium	Quarterly	mg/L	0.018	-	0.003	0.011	0.018
			Copper	Quarterly	mg/L	0.01	-	0.010	0.020	0.029
			Lead	Quarterly	mg/L	<0.001	-	<0.001	0.003	0.006
			Mercury	Quarterly	mg/L	<0.0001	-	<0.0001	<0.0001	<0.0001
Nickel	Quarterly	mg/L	<0.001	-	<0.001	0.001	0.002			
Biocides (active component isothiazoline)	Quarterly	mg/L	< 0.05	-	< 0.05	< 0.075	< 0.1			
Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	< 0.1	-	< 0.1	< 0.1	< 0.1			
EPL point 2 BH1	18/04/2019	22/05/2019	pH	Quarterly	pH	7.85	-	7.78	7.82	7.85
			Conductivity	Quarterly	µS/cm	526	-	486	506	526

			Sodium Absorption Ratio	Quarterly	-	0.54	-	0.54	0.68	0.82
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	223	-	223	225	226
			Chloride	Quarterly	mg/L	17	-	17	18	19
			Sodium	Quarterly	mg/L	21	-	21	23.5	26
			Nitrogen (total)	Quarterly	mg/L	10.1	-	10.1	24.8	39.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	10.1	-	10.1	24.7	39.3
			Nitrate	Quarterly	mg/L	<0.01	-	<0.01	0.02	0.06
			Sulfate	Quarterly	mg/L	65	-	14	39.5	65
			Phosphorus	Quarterly	mg/L	6	-	6	11.8	17.5
			Reactive Phosphorus	Quarterly	mg/L	0.02	-	0.02	0.02	0.02
			Total dissolved solids	Quarterly	mg/L	720	-	720	1135	1550
			Fluoride	Quarterly	mg/L	0.6	-	0.6	0.6	0.6
			Standing Water Level	Quarterly	m	2	-	2	2	2
			Arsenic	Quarterly	mg/L	0.002	-	<0.001	0.001	0.002
			Cadmium	Quarterly	mg/L	<0.0001	-	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	-	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	-	<0.001	<0.001	<0.001
			Nickel	Quarterly	mg/L	<0.001	-	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	<0.001	-	<0.001	<0.001	<0.001
			Zinc	Quarterly	mg/L	<0.005	-	<0.005	<0.005	<0.005
			Mercury	Quarterly	mg/L	<0.0001	-	<0.0001	<0.0001	<0.0001
EPL point 3 BH2	18/04/2019	22/05/2019	pH	Quarterly	pH	7.33	-	7.33	7.40	7.46
			Conductivity	Quarterly	µS/cm	704	-	511	608	704
			Sodium Absorption Ratio	Quarterly	-	31	-	0.34	15.67	31
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	252	-	220	236	252
			Chloride	Quarterly	mg/L	18	-	15	17	18
			Sodium	Quarterly	mg/L	15	-	14	14.5	15
			Nitrogen (total)	Quarterly	mg/L	6.8	-	6.8	10.8	14.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	6.7	-	6.7	10.8	14.8
			Nitrate	Quarterly	mg/L	0.05	-	0.02	0.04	0.05
			Sulfate	Quarterly	mg/L	137	-	24	81	137
			Phosphorus	Quarterly	mg/L	3.22	-	3.22	6.40	9.58
			Reactive Phosphorus	Quarterly	mg/L	<0.01	-	<0.01	0.008	0.01
			Total dissolved solids	Quarterly	mg/L	649	-	448	549	649
			Fluoride	Quarterly	mg/L	1	-	1	1	1

			Standing Water Level	Quarterly	m	2	-	2	2	2
			Arsenic	Quarterly	mg/L	<0.001	-	<0.001	0.006	0.011
			Cadmium	Quarterly	mg/L	<0.0001	-	<0.0001	0.0001	0.0002
			Chromium	Quarterly	mg/L	<0.001	-	<0.001	0.007	0.014
			Copper	Quarterly	mg/L	<0.001	-	<0.001	0.017	0.033
			Nickel	Quarterly	mg/L	<0.001	-	<0.001	0.012	0.024
			Lead	Quarterly	mg/L	<0.001	-	<0.001	0.070	0.140
			Zinc	Quarterly	mg/L	0.008	-	<0.008	0.514	1.02
			Mercury	Quarterly	mg/L	<0.0001	-	<0.0001	<0.0001	<0.0001
EPL point 4 BH3	18/04/2019	22/05/2019	pH	Quarterly	pH	7.91	-	7.56	7.74	7.91
			Conductivity	Quarterly	µS/cm	537	-	537	546	555
			Sodium Absorption Ratio	Quarterly	-	1.0	-	0.93	0.97	1.0
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	189	-	180	185	189
			Chloride	Quarterly	mg/L	38	-	38	40	41
			Sodium	Quarterly	mg/L	36	-	31	34	36
			Nitrogen (total)	Quarterly	mg/L	2	-	2	6.7	11.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	2	-	2	6.7	11.4
			Nitrate	Quarterly	mg/L	0.02	-	<0.01	0.01	0.02
			Sulfate	Quarterly	mg/L	48	-	38	43	48
			Phosphorus	Quarterly	mg/L	7.07	-	7.07	14.3	21.5
			Reactive Phosphorus	Quarterly	mg/L	0.22	-	0.19	0.21	0.22
			Total dissolved solids	Quarterly	mg/L	389	-	389	430	471
			Fluoride	Quarterly	mg/L	0.6	-	0.6	0.6	0.6
			Standing Water Level	Quarterly	m	2	-	2	2	2
			Arsenic	Quarterly	mg/L	0.004	-	0.004	0.004	0.004
			Cadmium	Quarterly	mg/L	<0.0001	-	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	-	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	-	<0.001	0.002	0.003
			Nickel	Quarterly	mg/L	<0.001	-	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	<0.001	-	<0.001	0.003	0.006
			Zinc	Quarterly	mg/L	<0.005	-	<0.005	0.247	0.491
			Mercury	Quarterly	mg/L	<0.0001	-	<0.0001	<0.0001	<0.0001
EPL point 5 BH4	18/04/2019	22/05/2019	pH	Quarterly	pH	7.19	-	7.19	7.23	7.27
			Conductivity	Quarterly	µS/cm	1620	-	1620	1620	1620
			Sodium Absorption Ratio	Quarterly	-	3.21	-	2.74	2.98	3.21
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	205	-	197	201	205
			Chloride	Quarterly	mg/L	308	-	294	301	308
			Sodium	Quarterly	mg/L	171	-	135	153	171

			Nitrogen (total)	Quarterly	mg/L	10	-	10	33	55
			Total Kjeldahl Nitrogen	Quarterly	mg/L	10	-	10	33	55
			Nitrate	Quarterly	mg/L	0.04	-	0.03	0.04	0.04
			Sulfate	Quarterly	mg/L	248	-	212	230	248
			Phosphorus	Quarterly	mg/L	21.2	-	21.2	37.6	53.9
			Reactive Phosphorus	Quarterly	mg/L	<0.01	-	<0.01	0.01	0.01
			Total dissolved solids	Quarterly	mg/L	1160	-	1160	1165	1170
			Fluoride	Quarterly	mg/L	0.8	-	0.8	0.9	0.9
			Standing Water Level	Quarterly	m	2	-	2	2	2
			Arsenic	Quarterly	mg/L	0.003	-	0.003	0.004	0.005
			Cadmium	Quarterly	mg/L	<0.0001	-	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	-	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	-	<0.001	0.001	0.002
			Nickel	Quarterly	mg/L	<0.001	-	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	<0.001	-	<0.001	0.001	0.001
			Zinc	Quarterly	mg/L	<0.005	-	<0.005	0.025	0.048
			Mercury	Quarterly	mg/L	<0.0001	-	<0.0001	<0.0001	<0.0001
EPL point 6 BH5	18/04/2019	22/05/2019	pH	Quarterly	pH	7.68	-	7.64	7.66	7.68
			Conductivity	Quarterly	µS/cm	676	-	676	676	676
			Sodium Absorption Ratio	Quarterly	-	1.02	-	0.61	0.82	1.02
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	232	-	232	246	260
			Chloride	Quarterly	mg/L	53	-	47	50	53
			Sodium	Quarterly	mg/L	42	-	26	34	42
			Nitrogen (total)	Quarterly	mg/L	6.3	-	3.5	4.9	6.3
			Total Kjeldahl Nitrogen	Quarterly	mg/L	4.3	-	3.4	3.9	4.3
			Nitrate	Quarterly	mg/L	1.92	-	0.06	0.99	1.92
			Sulfate	Quarterly	mg/L	38	-	16	27	38
			Phosphorus	Quarterly	mg/L	2.27	-	2.27	2.29	2.31
			Reactive Phosphorus	Quarterly	mg/L	0.11	-	0.04	0.08	0.11
			Total dissolved solids	Quarterly	mg/L	420	-	420	445	469
			Fluoride	Quarterly	mg/L	0.7	-	0.6	0.7	0.7
			Standing Water Level	Quarterly	m	2	-	2	2	2
			Arsenic	Quarterly	mg/L	0.001	-	0.001	0.004	0.007
			Cadmium	Quarterly	mg/L	<0.0001	-	<0.0001	0.0003	0.0006
			Chromium	Quarterly	mg/L	<0.001	-	<0.001	0.008	0.016
			Copper	Quarterly	mg/L	<0.001	-	<0.001	0.006	0.011
			Nickel	Quarterly	mg/L	<0.001	-	<0.001	0.003	0.006
			Lead	Quarterly	mg/L	<0.001	-	<0.001	0.018	0.036

			Zinc	Quarterly	mg/L	<0.005	-	<0.005	0.196	0.390
			Mercury	Quarterly	mg/L	<0.0001	-	<0.0001	<0.0001	<0.0001
EPL point 7 BH6	18/04/2019	22/05/2019	pH	Quarterly	pH	8.12	-	7.96	8.04	8.12
			Conductivity	Quarterly	µS/cm	620	-	601	611	620
			Sodium Absorption Ratio	Quarterly	-	0.9	-	0.81	0.86	0.9
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	224	-	224	239	253
			Chloride	Quarterly	mg/L	62	-	39	51	62
			Sodium	Quarterly	mg/L	35	-	31	33	35
			Nitrogen (total)	Quarterly	mg/L	7.1	-	1.9	4.5	7.1
			Total Kjeldahl Nitrogen	Quarterly	mg/L	7.1	-	1.9	4.5	7.1
			Nitrate	Quarterly	mg/L	<0.01	-	<0.01	0.02	0.03
			Sulfate	Quarterly	mg/L	3	-	3	4	5
			Phosphorus	Quarterly	mg/L	3.04	-	2.94	2.99	3.04
			Reactive Phosphorus	Quarterly	mg/L	0.39	-	0.38	0.39	0.39
			Total dissolved solids	Quarterly	mg/L	488	-	420	454	488
			Fluoride	Quarterly	mg/L	1	-	1	1	1
			Standing Water Level	Quarterly	m	2	-	2	2	2
			Arsenic	Quarterly	mg/L	0.001	-	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	<0.0001	-	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	-	<0.001	0.001	0.001
			Copper	Quarterly	mg/L	<0.001	-	<0.001	0.001	0.002
			Nickel	Quarterly	mg/L	<0.001	-	<0.001	<0.001	<0.001
Lead	Quarterly	mg/L	<0.001	-	<0.001	0.001	0.002			
Zinc	Quarterly	mg/L	<0.005	-	<0.005	0.043	0.084			
Mercury	Quarterly	mg/L	<0.0001	-	<0.0001	<0.0001	<0.0001			

* EPL 1: Samples were repeated for pH and Fluoride in May 2019 following optimisation of the processes onsite.

Effluent and Groundwater Monitoring Data January 2019

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EPL no.: 20165

Qualifications related to limits

Samples taken as per approved methods.

EPA Point ID	Sampling Date	Date Results Received	Pollutant	Measurement Period and Monitoring Frequency Required by Licence	Units	Value 10/01/2019	2019 Values to date		
							Min Value	Mean Value	Max Value
EPL point 1 Cooling Tower Effluent	10/01/2019	25/01/2019	pH	Quarterly	pH	8.49	8.49	8.49	8.49
			Electrical conductivity	Quarterly	µS/cm	1660	1660	1660	1660
			Sodium Absorption Ratio	Quarterly	-	10	10	10	10
			Alkalinity as calcium carbonate (hardness)	Quarterly	mg/L	57	57	57	57
			Chloride	Quarterly	mg/L	404	404	404	404
			Sodium	Quarterly	mg/L	263	263	263	263
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	< 2	< 2	< 2	< 2
			Fluoride	Quarterly	mg/L	0.8	0.8	0.8	0.8
			Nitrogen (total)	Quarterly	mg/L	3.2	3.2	3.2	3.2
			Total Kjeldahl Nitrogen	Quarterly	mg/L	0.9	0.9	0.9	0.9
			Sulfate	Quarterly	mg/L	112	112	112	112
			Total dissolved solids	Quarterly	mg/L	1030	1030	1030	1030
			Phosphorus	Quarterly	mg/L	0.15	0.15	0.15	0.15
			Cadmium	Quarterly	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
			Zinc	Quarterly	m	0.136	0.136	0.136	0.136
Arsenic	Quarterly	mg/L	0.002	0.002	0.002	0.002			
Chromium	Quarterly	mg/L	0.003	0.003	0.003	0.003			

			Copper	Quarterly	mg/L	0.029	0.029	0.029	0.029
			Lead	Quarterly	mg/L	0.006	0.006	0.006	0.006
			Mercury	Quarterly	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
			Nickel	Quarterly	mg/L	0.002	0.002	0.002	0.002
			Biocides (active component isothiazoline)	Quarterly	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
			Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
EPL point 2 BH1	10/01/2019	25/01/2019	pH	Quarterly	pH	7.78	7.78	7.78	7.78
			Conductivity	Quarterly	µS/cm	486	486	486	486
			Sodium Absorption Ratio	Quarterly	-	0.82	0.82	0.82	0.82
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	226	226	226	226
			Chloride	Quarterly	mg/L	19	19	19	19
			Sodium	Quarterly	mg/L	26	26	26	26
			Nitrogen (total)	Quarterly	mg/L	39.4	39.4	39.4	39.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	39.3	39.3	39.3	39.3
			Nitrate	Quarterly	mg/L	0.06	0.06	0.06	0.06
			Sulfate	Quarterly	mg/L	14	14	14	14
			Phosphorus	Quarterly	mg/L	17.5	17.5	17.5	17.5
			Reactive Phosphorus	Quarterly	mg/L	0.02	0.02	0.02	0.02
			Total dissolved solids	Quarterly	mg/L	1550	1550	1550	1550
			Fluoride	Quarterly	mg/L	0.6	0.6	0.6	0.6
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001

			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Nickel	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Zinc	Quarterly	mg/L	<0.005	<0.005	<0.005	<0.005
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 3 BH2	10/01/2019	25/01/2019	pH	Quarterly	pH	7.46	7.46	7.46	7.46
			Conductivity	Quarterly	µS/cm	511	511	511	511
			Sodium Absorption Ratio	Quarterly	-	0.34	0.34	0.34	0.34
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	220	220	220	220
			Chloride	Quarterly	mg/L	15	15	15	15
			Sodium	Quarterly	mg/L	14	14	14	14
			Nitrogen (total)	Quarterly	mg/L	14.8	14.8	14.8	14.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	14.8	14.8	14.8	14.8
			Nitrate	Quarterly	mg/L	0.02	0.02	0.02	0.02
			Sulfate	Quarterly	mg/L	24	24	24	24
			Phosphorus	Quarterly	mg/L	9.58	9.58	9.58	9.58
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.01	0.01	0.01
			Total dissolved solids	Quarterly	mg/L	448	448	448	448
			Fluoride	Quarterly	mg/L	1	1	1	1
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.11	0.11	0.11	0.11
			Cadmium	Quarterly	mg/L	0.0002	0.0002	0.0002	0.0002
			Chromium	Quarterly	mg/L	0.014	0.014	0.014	0.014
			Copper	Quarterly	mg/L	0.033	0.033	0.033	0.033
			Nickel	Quarterly	mg/L	0.024	0.024	0.024	0.024
			Lead	Quarterly	mg/L	0.14	0.14	0.14	0.14

			Zinc	Quarterly	mg/L	1.02	1.02	1.02	1.02
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 4 BH3	10/01/2019	25/01/2019	pH	Quarterly	pH	7.56	7.56	7.56	7.56
			Conductivity	Quarterly	µS/cm	555	555	555	555
			Sodium Absorption Ratio	Quarterly	-	0.93	0.93	0.93	0.93
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	180	180	180	180
			Chloride	Quarterly	mg/L	41	41	41	41
			Sodium	Quarterly	mg/L	31	31	31	31
			Nitrogen (total)	Quarterly	mg/L	11.4	11.4	11.4	11.4
			Total Kjeldahl Nitrogen	Quarterly	mg/L	11.4	11.4	11.4	11.4
			Nitrate	Quarterly	mg/L	<0.01	<0.01	<0.01	<0.01
			Sulfate	Quarterly	mg/L	38	38	38	38
			Phosphorus	Quarterly	mg/L	21.5	21.5	21.5	21.5
			Reactive Phosphorus	Quarterly	mg/L	0.19	0.19	0.19	0.19
			Total dissolved solids	Quarterly	mg/L	471	471	471	471
			Fluoride	Quarterly	mg/L	0.6	0.6	0.6	0.6
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.004	0.004	0.004	0.004
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	0.003	0.003	0.003	0.003
			Nickel	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
Lead	Quarterly	mg/L	0.006	0.006	0.006	0.006			
Zinc	Quarterly	mg/L	0.491	0.491	0.491	0.491			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001			
EPL point 5	10/01/2019	25/01/2019	pH	Quarterly	pH	7.27	7.27	7.27	7.27
			Conductivity	Quarterly	µS/cm	1620	1620	1620	1620

BH4			Sodium Absorption Ratio	Quarterly	-	2.74	2.74	2.74	2.74
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	197	197	197	197
			Chloride	Quarterly	mg/L	294	294	294	294
			Sodium	Quarterly	mg/L	135	135	135	135
			Nitrogen (total)	Quarterly	mg/L	55	55	55	55
			Total Kjeldahl Nitrogen	Quarterly	mg/L	55	55	55	55
			Nitrate	Quarterly	mg/L	0.03	0.03	0.03	0.03
			Sulfate	Quarterly	mg/L	212	212	212	212
			Phosphorus	Quarterly	mg/L	53.9	53.9	53.9	53.9
			Reactive Phosphorus	Quarterly	mg/L	0.01	0.01	0.01	0.01
			Total dissolved solids	Quarterly	mg/L	1170	1170	1170	1170
			Fluoride	Quarterly	mg/L	0.9	0.9	0.9	0.9
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.005	0.005	0.005	0.005
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	0.002	0.002	0.002	0.002
			Nickel	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Zinc	Quarterly	mg/L	0.048	0.048	0.048	0.048
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001			
EPL point 6 BH5	10/01/2019	25/01/2019	pH	Quarterly	pH	7.64	7.64	7.64	7.64
			Conductivity	Quarterly	µS/cm	676	676	676	676
			Sodium Absorption Ratio	Quarterly	-	0.61	0.61	0.61	0.61
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	260	260	260	260

			Chloride	Quarterly	mg/L	47	47	47	47
			Sodium	Quarterly	mg/L	26	26	26	26
			Nitrogen (total)	Quarterly	mg/L	3.5	3.5	3.5	3.5
			Total Kjeldahl Nitrogen	Quarterly	mg/L	3.4	3.4	3.4	3.4
			Nitrate	Quarterly	mg/L	0.06	0.06	0.06	0.06
			Sulfate	Quarterly	mg/L	16	16	16	16
			Phosphorus	Quarterly	mg/L	2.31	2.31	2.31	2.31
			Reactive Phosphorus	Quarterly	mg/L	0.04	0.04	0.04	0.04
			Total dissolved solids	Quarterly	mg/L	469	469	469	469
			Fluoride	Quarterly	mg/L	0.6	0.6	0.6	0.6
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.007	0.007	0.007	0.007
			Cadmium	Quarterly	mg/L	0.0006	0.0006	0.0006	0.0006
			Chromium	Quarterly	mg/L	0.016	0.016	0.016	0.016
			Copper	Quarterly	mg/L	0.011	0.011	0.011	0.011
			Nickel	Quarterly	mg/L	0.006	0.006	0.006	0.006
			Lead	Quarterly	mg/L	0.036	0.036	0.036	0.036
			Zinc	Quarterly	mg/L	0.39	0.39	0.39	0.39
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 7 BH6	10/01/2019	25/01/2019	pH	Quarterly	pH	7.96	7.96	7.96	7.96
			Conductivity	Quarterly	µS/cm	601	601	601	601
			Sodium Absorption Ratio	Quarterly	-	0.81	0.81	0.81	0.81
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	253	253	253	253
			Chloride	Quarterly	mg/L	39	39	39	39
			Sodium	Quarterly	mg/L	31	31	31	31
			Nitrogen (total)	Quarterly	mg/L	1.9	1.9	1.9	1.9

			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.9	1.9	1.9	1.9
			Nitrate	Quarterly	mg/L	0.03	0.03	0.03	0.03
			Sulfate	Quarterly	mg/L	5	5	5	5
			Phosphorus	Quarterly	mg/L	2.94	2.94	2.94	2.94
			Reactive Phosphorus	Quarterly	mg/L	0.38	0.38	0.38	0.38
			Total dissolved solids	Quarterly	mg/L	420	420	420	420
			Fluoride	Quarterly	mg/L	1	1	1	1
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Copper	Quarterly	mg/L	0.002	0.002	0.002	0.002
			Nickel	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Lead	Quarterly	mg/L	0.002	0.002	0.002	0.002
			Zinc	Quarterly	mg/L	0.084	0.084	0.084	0.084
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001

Effluent and Groundwater Monitoring Data October 2018

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Qualifications related to limits

Samples taken as per approved methods.

EPA Point ID	Sampling Date	Date Results Received	Pollutant	Measurement Period and Monitoring Frequency Required by Licence	Units	Value 29/10/2018	2018 Values to date		
							Min Value	Mean Value	Max Value
EPL point 1 Cooling Tower Effluent	22/10/2018	10/12/2018	pH	Quarterly	pH	8.36	8.15	8.36	8.56
			Electrical conductivity	Quarterly	µS/cm	1,910	1,610	1,733	1,910
			Sodium Absorption Ratio	Quarterly	-	4.51	4.06	4.98	6.38
			Alkalinity as calcium carbonate (hardness)	Quarterly	mg/L	129	66	99	129
			Chloride	Quarterly	mg/L	342	342	352	371
			Sodium	Quarterly	mg/L	215	177	198	215
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	<2	<2	<2	<2
			Fluoride	Quarterly	mg/L	4.1	1.4	3.7	5.5
			Nitrogen (total)	Quarterly	mg/L	3.2	3.20	3.37	3.50
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.2	1.2	1.5	1.7
			Sulfate	Quarterly	mg/L	286	205	248	286
			Total dissolved solids	Quarterly	mg/L	988	848	921	988
			Phosphorus	Quarterly	mg/L	0.15	0.12	0.27	0.55
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Zinc	Quarterly	mg/L	0.01	0.009	0.015	0.026
Arsenic	Quarterly	mg/L	<0.001	<0.001	0.001	0.001			
Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001			

			Copper	Quarterly	mg/L	0.062	0.03	0.09	0.16
			Lead	Quarterly	mg/L	<0.001	<0.001	0.001	0.001
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Nickel	Quarterly	mg/L	0.001	<0.001	0.001	0.002
			Biocides (active component isothiazoline)	Quarterly	mg/L	<0.1	<0.1	<0.1	<0.1
			Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.1	<0.1	<0.1	<0.1
EPL point 2 BH1	22/10/2018	10/12/2018	pH	Quarterly	pH	7.86	7.84	7.85	7.86
			Conductivity	Quarterly	µS/cm	615	579	597	615
			Sodium Absorption Ratio	Quarterly	-	2	0.8	1.4	2.0
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	227	176	202	227
			Chloride	Quarterly	mg/L	25	25	34	42
			Sodium	Quarterly	mg/L	35	30	33	35
			Nitrogen (total)	Quarterly	mg/L	48.7	32.2	40.5	48.7
			Total Kjeldahl Nitrogen	Quarterly	mg/L	48.7	32.2	40.5	48.7
			Nitrate	Quarterly	mg/L	<0.01	0.01	0.02	0.03
			Sulfate	Quarterly	mg/L	29	29	35	40
			Phosphorus	Quarterly	mg/L	12.2	12	20	27
			Reactive Phosphorus	Quarterly	mg/L	0.02	0.01	0.02	0.02
			Total dissolved solids	Quarterly	mg/L	366	366	476	586
			Fluoride	Quarterly	mg/L	0.5	0.5	0.6	0.6
			Standing Water Level	Quarterly	m	2	1	2	2
			Arsenic	Quarterly	mg/L	0.004	0.004	0.009	0.013
			Cadmium	Quarterly	mg/L	0.0003	0.0003	0.0005	0.0006

			Chromium	Quarterly	mg/L	0.006	0.006	0.016	0.026
			Copper	Quarterly	mg/L	0.018	0.018	0.027	0.036
			Nickel	Quarterly	mg/L	0.008	0.008	0.018	0.027
			Lead	Quarterly	mg/L	0.04	0.040	0.089	0.137
			Zinc	Quarterly	mg/L	0.276	0.276	0.548	0.820
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 3 BH2	22/10/2018	10/12/2018	pH	Quarterly	pH	7.61	7.60	7.61	7.61
			Conductivity	Quarterly	µS/cm	520	436	478	520
			Sodium Absorption Ratio	Quarterly	-	0.6	0.3	0.5	0.6
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	221	178	200	221
			Chloride	Quarterly	mg/L	13	12	13	13
			Sodium	Quarterly	mg/L	18	10	14	18
			Nitrogen (total)	Quarterly	mg/L	16.4	16.4	17.1	17.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	16.4	16.4	17.1	17.7
			Nitrate	Quarterly	mg/L	0.01	0.01	0.08	0.14
			Sulfate	Quarterly	mg/L	16	16	17	18
			Phosphorus	Quarterly	mg/L	9.51	10	11	13
			Reactive Phosphorus	Quarterly	mg/L	<0.01	<0.01	<0.01	<0.01
			Total dissolved solids	Quarterly	mg/L	322	322	427	532
			Fluoride	Quarterly	mg/L	0.7	0.7	0.7	0.7
			Standing Water Level	Quarterly	m	2	1	2	2
			Arsenic	Quarterly	mg/L	0.002	0.002	0.004	0.006
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	0.0001	0.0002
			Chromium	Quarterly	mg/L	0.001	0.001	0.005	0.008
			Copper	Quarterly	mg/L	0.004	0.004	0.010	0.016
			Nickel	Quarterly	mg/L	0.002	0.002	0.007	0.011
Lead	Quarterly	mg/L	0.006	0.006	0.029	0.051			

			Zinc	Quarterly	mg/L	0.084	0.084	0.264	0.443
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 4 BH3	22/10/2018	10/12/2018	pH	Quarterly	pH	7.95	7.85	7.90	7.95
			Conductivity	Quarterly	µS/cm	600	519	560	600
			Sodium Absorption Ratio	Quarterly	-	0.96	0.6	0.8	1.0
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	186	167	177	186
			Chloride	Quarterly	mg/L	30	22	26	30
			Sodium	Quarterly	mg/L	30	19	25	30
			Nitrogen (total)	Quarterly	mg/L	10.5	10.5	13.3	16.0
			Total Kjeldahl Nitrogen	Quarterly	mg/L	9.6	9.6	10.9	12.2
			Nitrate	Quarterly	mg/L	0.9	0.90	2.34	3.77
			Sulfate	Quarterly	mg/L	32	32	32	32
			Phosphorus	Quarterly	mg/L	13.7	13.7	19.3	24.9
			Reactive Phosphorus	Quarterly	mg/L	0.18	0.08	0.13	0.18
			Total dissolved solids	Quarterly	mg/L	418	398	408	418
			Fluoride	Quarterly	mg/L	0.5	0.5	0.6	0.7
			Standing Water Level	Quarterly	m	2	1.2	1.6	2.0
			Arsenic	Quarterly	mg/L	0.004	0.003	0.004	0.004
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	0.002	0.002	0.003	0.004
			Copper	Quarterly	mg/L	0.003	0.003	0.004	0.005
			Nickel	Quarterly	mg/L	0.001	0.001	0.003	0.004
Lead	Quarterly	mg/L	0.005	0.005	0.010	0.014			
Zinc	Quarterly	mg/L	0.06	0.060	0.097	0.134			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001			
EPL point 5	22/10/2018	10/12/2018	pH	Quarterly	pH	7.48	7.39	7.44	7.48
			Conductivity	Quarterly	µS/cm	1780	1260	1520	1780

BH4			Sodium Absorption Ratio	Quarterly	-	2.35	0.8	1.6	2.4
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	203	172	188	203
			Chloride	Quarterly	mg/L	335	208	272	335
			Sodium	Quarterly	mg/L	120	38	79	120
			Nitrogen (total)	Quarterly	mg/L	23.4	23.4	23.5	23.5
			Total Kjeldahl Nitrogen	Quarterly	mg/L	23.4	23.4	23.4	23.4
			Nitrate	Quarterly	mg/L	0.04	0.04	0.06	0.08
			Sulfate	Quarterly	mg/L	202	145	174	202
			Phosphorus	Quarterly	mg/L	11.9	7.61	9.76	11.90
			Reactive Phosphorus	Quarterly	mg/L	<0.01	<0.01	<0.01	<0.01
			Total dissolved solids	Quarterly	mg/L	1240	656	948	1240
			Fluoride	Quarterly	mg/L	0.6	0.6	0.6	0.6
			Standing Water Level	Quarterly	m	2	1	2	2
			Arsenic	Quarterly	mg/L	0.028	0.002	0.015	0.028
			Cadmium	Quarterly	mg/L	0.0006	<0.0001	0.0004	0.0006
			Chromium	Quarterly	mg/L	0.011	<0.001	0.006	0.011
			Copper	Quarterly	mg/L	0.027	<0.001	0.014	0.027
			Nickel	Quarterly	mg/L	0.014	0.001	0.008	0.014
			Lead	Quarterly	mg/L	0.127	<0.001	0.064	0.127
Zinc	Quarterly	mg/L	0.65	0.023	0.337	0.650			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001			
EPL point 6 BH5	22/10/2018	10/12/2018	pH	Quarterly	pH	7.76	7.76	7.86	7.96
			Conductivity	Quarterly	µS/cm	820	820	835	850
			Sodium Absorption Ratio	Quarterly	-	1.04	1.0	1.1	1.2
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	292	258	275	292

			Chloride	Quarterly	mg/L	54	54	71	87
			Sodium	Quarterly	mg/L	38	38	39	40
			Nitrogen (total)	Quarterly	mg/L	12.2	4.6	8.4	12.2
			Total Kjeldahl Nitrogen	Quarterly	mg/L	10.5	4.4	7.5	10.5
			Nitrate	Quarterly	mg/L	1.62	0.15	0.89	1.62
			Sulfate	Quarterly	mg/L	12	12	14	16
			Phosphorus	Quarterly	mg/L	6.06	3.6	4.8	6.1
			Reactive Phosphorus	Quarterly	mg/L	0.12	0.12	0.41	0.70
			Total dissolved solids	Quarterly	mg/L	620	483	552	620
			Fluoride	Quarterly	mg/L	0.4	0.4	0.6	0.8
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.006	0.005	0.006	0.006
			Cadmium	Quarterly	mg/L	0.0002	<0.0001	0.0002	0.0002
			Chromium	Quarterly	mg/L	0.019	0.011	0.015	0.019
			Copper	Quarterly	mg/L	0.017	0.007	0.012	0.017
			Nickel	Quarterly	mg/L	0.012	0.008	0.010	0.012
			Lead	Quarterly	mg/L	0.042	0.018	0.030	0.042
			Zinc	Quarterly	mg/L	0.4	0.224	0.312	0.400
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 7 BH6	22/10/2018	10/12/2018	pH	Quarterly	pH	8.06	8.04	8.05	8.06
			Conductivity	Quarterly	µS/cm	693	623	658	693
			Sodium Absorption Ratio	Quarterly	-	0.87	0.6	0.8	0.9
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	288	237	263	288
			Chloride	Quarterly	mg/L	25	25	27	29
			Sodium	Quarterly	mg/L	32	23	28	32
			Nitrogen (total)	Quarterly	mg/L	5.3	4.5	4.9	5.3

			Total Kjeldahl Nitrogen	Quarterly	mg/L	4.4	4.2	4.3	4.4
			Nitrate	Quarterly	mg/L	0.86	0.32	0.59	0.86
			Sulfate	Quarterly	mg/L	13	13	17	21
			Phosphorus	Quarterly	mg/L	4.74	3.66	4.20	4.74
			Reactive Phosphorus	Quarterly	mg/L	0.32	0.32	0.35	0.38
			Total dissolved solids	Quarterly	mg/L	444	314	379	444
			Fluoride	Quarterly	mg/L	0.7	0.7	0.8	0.9
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.003	0.002	0.003	0.003
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	0.005	<0.001	0.003	0.005
			Copper	Quarterly	mg/L	0.005	<0.001	0.003	0.005
			Nickel	Quarterly	mg/L	0.002	0.002	0.002	0.002
			Lead	Quarterly	mg/L	0.006	0.001	0.004	0.006
			Zinc	Quarterly	mg/L	0.23	0.077	0.154	0.230
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001

Groundwater Monitoring Data August 2018

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EPL no.: 20165

Qualifications related to limits

Samples taken as per approved methods.

EPA Point ID	Sampling Date	Date Results Received	Pollutant	Measurement Period and Monitoring Frequency Required by Licence	Units	Value 14/08/2018	2018 Values to date		
							Min Value	Mean Value	Max Value
EPL point 1 Cooling Tower Effluent	14/08/2018	08/10/2018	pH	Quarterly	pH	8.56	8.15	8.36	8.56
			Electrical conductivity	Quarterly	µS/cm	1,610	1,610	1,645	1,680
			Sodium Absorption Ratio	Quarterly	-	6.38	4.06	5.22	6.38
			Alkalinity as calcium carbonate (hardness)	Quarterly	mg/L	66	66	84	101
			Chloride	Quarterly	mg/L	371	343	357	371
			Sodium	Quarterly	mg/L	201	177	189	201
			Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	<2	<2	<2	<2
			Fluoride	Quarterly	mg/L	1.4	1.4	3.5	5.5
			Nitrogen (total)	Quarterly	mg/L	3.5	3.40	3.45	3.50
			Total Kjeldahl Nitrogen	Quarterly	mg/L	1.6	1.6	1.7	1.7
			Sulfate	Quarterly	mg/L	205	205	229	252
			Total dissolved solids	Quarterly	mg/L	926	848	887	926
			Phosphorus	Quarterly	mg/L	0.12	0.12	0.34	0.55
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Zinc	Quarterly	m	0.009	0.009	0.018	0.026
Arsenic	Quarterly	mg/L	0.001	0.001	0.001	0.001			
Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001			

			Copper	Quarterly	mg/L	0.033	0.03	0.10	0.16
			Lead	Quarterly	mg/L	0.001	<0.001	0.001	0.001
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Nickel	Quarterly	mg/L	<0.001	<0.001	0.001	0.002
			Biocides (active component isothiazoline)	Quarterly	mg/L	<0.10	<0.10	<0.10	<0.10
			Dosing chemicals (active component benzotriazole)	Quarterly	mg/L	<0.10	<0.10	<0.10	<0.10
EPL point 2 BH1	14/08/2018	08/10/2018	pH	Quarterly	pH	7.84	7.84	7.84	7.84
			Conductivity	Quarterly	µS/cm	579	579	579	579
			Sodium Absorption Ratio	Quarterly	-	0.8	0.8	0.8	0.8
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	176	176	176	176
			Chloride	Quarterly	mg/L	42	42	42	42
			Sodium	Quarterly	mg/L	30	30	30	30
			Nitrogen (total)	Quarterly	mg/L	32.2	32.2	32.2	32.2
			Total Kjeldahl Nitrogen	Quarterly	mg/L	32.2	32.2	32.2	32.2
			Nitrate	Quarterly	mg/L	0.03	0.03	0.03	0.03
			Sulfate	Quarterly	mg/L	40	40	40	40
			Phosphorus	Quarterly	mg/L	27	27	27	27
			Reactive Phosphorus	Quarterly	mg/L	<0.01	<0.01	<0.01	<0.01
			Total dissolved solids	Quarterly	mg/L	586	586	586	586
			Fluoride	Quarterly	mg/L	0.6	0.6	0.6	0.6
			Standing Water Level	Quarterly	m	1	1	1	1
			Arsenic	Quarterly	mg/L	0.013	0.013	0.013	0.013
			Cadmium	Quarterly	mg/L	0.0006	0.0006	0.0006	0.0006

			Chromium	Quarterly	mg/L	0.026	0.026	0.026	0.026
			Copper	Quarterly	mg/L	0.036	0.036	0.036	0.036
			Nickel	Quarterly	mg/L	0.027	0.027	0.027	0.027
			Lead	Quarterly	mg/L	0.137	0.137	0.137	0.137
			Zinc	Quarterly	mg/L	0.820	0.820	0.820	0.820
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 3 BH2	14/08/2018	08/10/2018	pH	Quarterly	pH	7.60	7.60	7.60	7.60
			Conductivity	Quarterly	µS/cm	436	436	436	436
			Sodium Absorption Ratio	Quarterly	-	0.3	0.3	0.3	0.3
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	178	178	178	178
			Chloride	Quarterly	mg/L	12	12	12	12
			Sodium	Quarterly	mg/L	10	10	10	10
			Nitrogen (total)	Quarterly	mg/L	17.8	17.8	17.8	17.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	17.7	17.7	17.7	17.7
			Nitrate	Quarterly	mg/L	0.14	0.14	0.14	0.14
			Sulfate	Quarterly	mg/L	18	18	18	18
			Phosphorus	Quarterly	mg/L	13	13	13	13
			Reactive Phosphorus	Quarterly	mg/L	<0.01	<0.01	<0.01	<0.01
			Total dissolved solids	Quarterly	mg/L	532	532	532	532
			Fluoride	Quarterly	mg/L	0.7	0.7	0.7	0.7
			Standing Water Level	Quarterly	m	1	1	1	1
			Arsenic	Quarterly	mg/L	0.006	0.006	0.006	0.006
			Cadmium	Quarterly	mg/L	0.0002	0.0002	0.0002	0.0002
			Chromium	Quarterly	mg/L	0.008	0.008	0.008	0.008
			Copper	Quarterly	mg/L	0.016	0.016	0.016	0.016
			Nickel	Quarterly	mg/L	0.011	0.011	0.011	0.011
Lead	Quarterly	mg/L	0.051	0.051	0.051	0.051			

			Zinc	Quarterly	mg/L	0.443	0.443	0.443	0.443
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 4 BH3	14/08/2018	08/10/2018	pH	Quarterly	pH	7.85	7.85	7.85	7.85
			Conductivity	Quarterly	µS/cm	519	519	519	519
			Sodium Absorption Ratio	Quarterly	-	0.57	0.6	0.6	0.6
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	167	167	167	167
			Chloride	Quarterly	mg/L	22	22	22	22
			Sodium	Quarterly	mg/L	19	19	19	19
			Nitrogen (total)	Quarterly	mg/L	16	16.0	16.0	16.0
			Total Kjeldahl Nitrogen	Quarterly	mg/L	12.2	12.2	12.2	12.2
			Nitrate	Quarterly	mg/L	3.77	3.77	3.77	3.77
			Sulfate	Quarterly	mg/L	32	32	32	32
			Phosphorus	Quarterly	mg/L	24.9	24.9	24.9	24.9
			Reactive Phosphorus	Quarterly	mg/L	0.08	0.08	0.08	0.08
			Total dissolved solids	Quarterly	mg/L	398	398	398	398
			Fluoride	Quarterly	mg/L	0.7	0.7	0.7	0.7
			Standing Water Level	Quarterly	m	1.2	1.2	1.2	1.2
			Arsenic	Quarterly	mg/L	0.003	0.003	0.003	0.003
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	0.004	0.004	0.004	0.004
			Copper	Quarterly	mg/L	0.005	0.005	0.005	0.005
			Nickel	Quarterly	mg/L	0.004	0.004	0.004	0.004
Lead	Quarterly	mg/L	0.014	0.014	0.014	0.014			
Zinc	Quarterly	mg/L	0.134	0.134	0.134	0.134			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001			
EPL point 5	14/08/2018	08/10/2018	pH	Quarterly	pH	7.39	7.39	7.39	7.39
			Conductivity	Quarterly	µS/cm	1260	1260	1260	1260

BH4			Sodium Absorption Ratio	Quarterly	-	0.77	0.8	0.8	0.8
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	172	172	172	172
			Chloride	Quarterly	mg/L	208	208	208	208
			Sodium	Quarterly	mg/L	38	38	38	38
			Nitrogen (total)	Quarterly	mg/L	23.5	23.5	23.5	23.5
			Total Kjeldahl Nitrogen	Quarterly	mg/L	23.4	23.4	23.4	23.4
			Nitrate	Quarterly	mg/L	0.08	0.08	0.08	0.08
			Sulfate	Quarterly	mg/L	145	145	145	145
			Phosphorus	Quarterly	mg/L	7.61	7.61	7.61	7.61
			Reactive Phosphorus	Quarterly	mg/L	<0.01	<0.01	<0.01	<0.01
			Total dissolved solids	Quarterly	mg/L	656	656	656	656
			Fluoride	Quarterly	mg/L	0.6	0.6	0.6	0.6
			Standing Water Level	Quarterly	m	1	1	1	1
			Arsenic	Quarterly	mg/L	0.002	0.002	0.002	0.002
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Nickel	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Lead	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Zinc	Quarterly	mg/L	0.023	0.023	0.023	0.023
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001			
EPL point 6 BH5	14/08/2018	08/10/2018	pH	Quarterly	pH	7.96	7.96	7.96	7.96
			Conductivity	Quarterly	µS/cm	850	850	850	850
			Sodium Absorption Ratio	Quarterly	-	1.24	1.2	1.2	1.2
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	258	258	258	258

			Chloride	Quarterly	mg/L	87	87	87	87
			Sodium	Quarterly	mg/L	40	40	40	40
			Nitrogen (total)	Quarterly	mg/L	4.6	4.6	4.6	4.6
			Total Kjeldahl Nitrogen	Quarterly	mg/L	4.4	4.4	4.4	4.4
			Nitrate	Quarterly	mg/L	0.15	0.15	0.15	0.15
			Sulfate	Quarterly	mg/L	16	16	16	16
			Phosphorus	Quarterly	mg/L	3.6	3.6	3.6	3.6
			Reactive Phosphorus	Quarterly	mg/L	0.7	0.70	0.70	0.70
			Total dissolved solids	Quarterly	mg/L	483	483	483	483
			Fluoride	Quarterly	mg/L	0.8	0.8	0.8	0.8
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.005	0.005	0.005	0.005
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	0.011	0.011	0.011	0.011
			Copper	Quarterly	mg/L	0.007	0.007	0.007	0.007
			Nickel	Quarterly	mg/L	0.008	0.008	0.008	0.008
			Lead	Quarterly	mg/L	0.018	0.018	0.018	0.018
			Zinc	Quarterly	mg/L	0.224	0.224	0.224	0.224
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 7 BH6	14/08/2018	08/10/2018	pH	Quarterly	pH	8.04	8.04	8.04	8.04
			Conductivity	Quarterly	µS/cm	623	623	623	623
			Sodium Absorption Ratio	Quarterly	-	0.6	0.6	0.6	0.6
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	237	237	237	237
			Chloride	Quarterly	mg/L	29	29	29	29
			Sodium	Quarterly	mg/L	23	23	23	23
			Nitrogen (total)	Quarterly	mg/L	4.5	4.5	4.5	4.5

			Total Kjeldahl Nitrogen	Quarterly	mg/L	4.2	4.2	4.2	4.2
			Nitrate	Quarterly	mg/L	0.32	0.32	0.32	0.32
			Sulfate	Quarterly	mg/L	21	21	21	21
			Phosphorus	Quarterly	mg/L	3.66	3.66	3.66	3.66
			Reactive Phosphorus	Quarterly	mg/L	0.38	0.38	0.38	0.38
			Total dissolved solids	Quarterly	mg/L	314	314	314	314
			Fluoride	Quarterly	mg/L	0.9	0.9	0.9	0.9
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.002	0.002	0.002	0.002
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Nickel	Quarterly	mg/L	0.002	0.002	0.002	0.002
			Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Zinc	Quarterly	mg/L	0.077	0.077	0.077	0.077
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001

Groundwater Monitoring Data July 2018

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Qualifications related to limits

Samples taken as per approved methods.

EPA Point ID	Sampling Date	Date Results Received	Pollutant	Measurement Period and Monitoring Frequency Required by Licence	Units	Value 19/07/2018	2018 Values to date		
							Min Value	Mean Value	Max Value
EPL point 1 Cooling Tower Effluent	19/07/2018	25/07/2018	pH	Quarterly	pH	8.15	8.15	8.15	8.15
		Electrical conductivity	Quarterly	µS/cm	1,680	1,680	1,680	1,680	
		Sodium Absorption Ratio	Quarterly	-	4.06	4.06	4.06	4.06	
		Alkalinity as calcium carbonate (hardness)	Quarterly	mg/L	101	101	101	101	
		Chloride	Quarterly	mg/L	343	343	343	343	
		Sodium	Quarterly	mg/L	177	177	177	177	
		Biochemical Oxygen Demand (BOD)	Quarterly	mg/L	<2	<2	<2	<2	
		Fluoride	Quarterly	mg/L	5.5	5.5	5.5	5.5	
		Nitrogen (total)	Quarterly	mg/L	3.4	3.4	3.4	3.4	
		Total Kjeldahl Nitrogen	Quarterly	mg/L	1.7	1.7	1.7	1.7	
		Sulfate	Quarterly	mg/L	252	252	252	252	
		Total dissolved solids	Quarterly	mg/L	848	848	848	848	
		Phosphorus	Quarterly	mg/L	0.55	0.55	0.55	0.55	
		Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
Zinc	Quarterly	m	0.026	0.026	0.026	0.026			
Arsenic	Quarterly	mg/L	0.001	0.001	0.001	0.001			

			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	0.160	0.160	0.160	0.160
			Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Nickel	Quarterly	mg/L	0.002	0.002	0.002	0.002
			Biocide	To be provided					
EPL point 2 BH1	19/07/2018	25/07/2018	pH	Quarterly	pH	7.84	7.84	7.84	7.84
		Conductivity	Quarterly	µS/cm	579	579	579	579	
		Sodium Absorption Ratio	Quarterly	-	0.8	0.8	0.8	0.8	
		Total Alkalinity as calcium carbonate	Quarterly	mg/L	176	176	176	176	
		Chloride	Quarterly	mg/L	42	42	42	42	
		Sodium	Quarterly	mg/L	30	30	30	30	
		Nitrogen (total)	Quarterly	mg/L	32.2	32.2	32.2	32.2	
		Total Kjeldahl Nitrogen	Quarterly	mg/L	32.2	32.2	32.2	32.2	
		Nitrate	Quarterly	mg/L	0.03	0.03	0.03	0.03	
		Sulfate	Quarterly	mg/L	40	40	40	40	
		Phosphorus	Quarterly	mg/L	27	27	27	27	
		Reactive Phosphorus	Quarterly	mg/L	<0.01	<0.01	<0.01	<0.01	
		Total dissolved solids	Quarterly	mg/L	586	586	586	586	
		Fluoride	Quarterly	mg/L	0.6	0.6	0.6	0.6	
		Standing Water Level	Quarterly	m	1	1	1	1	
		Arsenic	Quarterly	mg/L	0.013	0.013	0.013	0.013	
		Cadmium	Quarterly	mg/L	0.0006	0.0006	0.0006	0.0006	
Chromium	Quarterly	mg/L	0.026	0.026	0.026	0.026			
Copper	Quarterly	mg/L	0.036	0.036	0.036	0.036			
Nickel	Quarterly	mg/L	0.027	0.027	0.027	0.027			

			Lead	Quarterly	mg/L	0.137	0.137	0.137	0.137
			Zinc	Quarterly	mg/L	0.820	0.820	0.820	0.820
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 3 BH2	19/07/2018	25/07/2018	pH	Quarterly	pH	7.60	7.60	7.60	7.60
			Conductivity	Quarterly	µS/cm	436	436	436	436
			Sodium Absorption Ratio	Quarterly	-	0.3	0.3	0.3	0.3
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	178	178	178	178
			Chloride	Quarterly	mg/L	12	12	12	12
			Sodium	Quarterly	mg/L	10	10	10	10
			Nitrogen (total)	Quarterly	mg/L	17.8	17.8	17.8	17.8
			Total Kjeldahl Nitrogen	Quarterly	mg/L	17.7	17.7	17.7	17.7
			Nitrate	Quarterly	mg/L	0.14	0.14	0.14	0.14
			Sulfate	Quarterly	mg/L	18	18	18	18
			Phosphorus	Quarterly	mg/L	13	13	13	13
			Reactive Phosphorus	Quarterly	mg/L	<0.01	<0.01	<0.01	<0.01
			Total dissolved solids	Quarterly	mg/L	532	532	532	532
			Fluoride	Quarterly	mg/L	0.7	0.7	0.7	0.7
			Standing Water Level	Quarterly	m	1	1	1	1
			Arsenic	Quarterly	mg/L	0.006	0.006	0.006	0.006
			Cadmium	Quarterly	mg/L	0.0002	0.0002	0.0002	0.0002
			Chromium	Quarterly	mg/L	0.008	0.008	0.008	0.008
			Copper	Quarterly	mg/L	0.016	0.016	0.016	0.016
			Nickel	Quarterly	mg/L	0.011	0.011	0.011	0.011
	Lead	Quarterly	mg/L	0.051	0.051	0.051	0.051		
	Zinc	Quarterly	mg/L	0.443	0.443	0.443	0.443		
	Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001		

EPL point 4 BH3	19/07/2018	25/07/2018	pH	Quarterly	pH	7.85	7.85	7.85	7.85
		Conductivity	Quarterly	µS/cm	519	519	519	519	
		Sodium Absorption Ratio	Quarterly	-	0.57	0.6	0.6	0.6	
		Total Alkalinity as calcium carbonate	Quarterly	mg/L	167	167	167	167	
		Chloride	Quarterly	mg/L	22	22	22	22	
		Sodium	Quarterly	mg/L	19	19	19	19	
		Nitrogen (total)	Quarterly	mg/L	16	16.0	16.0	16.0	
		Total Kjeldahl Nitrogen	Quarterly	mg/L	12.2	12.2	12.2	12.2	
		Nitrate	Quarterly	mg/L	3.77	3.77	3.77	3.77	
		Sulfate	Quarterly	mg/L	32	32	32	32	
		Phosphorus	Quarterly	mg/L	24.9	24.9	24.9	24.9	
		Reactive Phosphorus	Quarterly	mg/L	0.08	0.08	0.08	0.08	
		Total dissolved solids	Quarterly	mg/L	398	398	398	398	
		Fluoride	Quarterly	mg/L	0.7	0.7	0.7	0.7	
		Standing Water Level	Quarterly	m	1.2	1.2	1.2	1.2	
		Arsenic	Quarterly	mg/L	0.003	0.003	0.003	0.003	
		Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
		Chromium	Quarterly	mg/L	0.004	0.004	0.004	0.004	
		Copper	Quarterly	mg/L	0.005	0.005	0.005	0.005	
		Nickel	Quarterly	mg/L	0.004	0.004	0.004	0.004	
Lead	Quarterly	mg/L	0.014	0.014	0.014	0.014			
Zinc	Quarterly	mg/L	0.134	0.134	0.134	0.134			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001			
EPL point 5	19/07/2018	25/07/2018	pH	Quarterly	pH	7.39	7.39	7.39	7.39
		Conductivity	Quarterly	µS/cm	1260	1260	1260	1260	

BH4			Sodium Absorption Ratio	Quarterly	-	0.77	0.8	0.8	0.8
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	172	172	172	172
			Chloride	Quarterly	mg/L	208	208	208	208
			Sodium	Quarterly	mg/L	38	38	38	38
			Nitrogen (total)	Quarterly	mg/L	23.5	23.5	23.5	23.5
			Total Kjeldahl Nitrogen	Quarterly	mg/L	23.4	23.4	23.4	23.4
			Nitrate	Quarterly	mg/L	0.08	0.08	0.08	0.08
			Sulfate	Quarterly	mg/L	145	145	145	145
			Phosphorus	Quarterly	mg/L	7.61	7.61	7.61	7.61
			Reactive Phosphorus	Quarterly	mg/L	<0.01	<0.01	<0.01	<0.01
			Total dissolved solids	Quarterly	mg/L	656	656	656	656
			Fluoride	Quarterly	mg/L	0.6	0.6	0.6	0.6
			Standing Water Level	Quarterly	m	1	1	1	1
			Arsenic	Quarterly	mg/L	0.002	0.002	0.002	0.002
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Nickel	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Lead	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
Zinc	Quarterly	mg/L	0.023	0.023	0.023	0.023			
Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001			
EPL point 6 BH5	19/07/2018	25/07/2018	pH	Quarterly	pH	7.96	7.96	7.96	7.96
		Conductivity	Quarterly	µS/cm	850	850	850	850	
		Sodium Absorption Ratio	Quarterly	-	1.24	1.2	1.2	1.2	
		Total Alkalinity as	Quarterly	mg/L	258	258	258	258	

			calcium carbonate						
			Chloride	Quarterly	mg/L	87	87	87	87
			Sodium	Quarterly	mg/L	40	40	40	40
			Nitrogen (total)	Quarterly	mg/L	4.6	4.6	4.6	4.6
			Total Kjeldahl Nitrogen	Quarterly	mg/L	4.4	4.4	4.4	4.4
			Nitrate	Quarterly	mg/L	0.15	0.15	0.15	0.15
			Sulfate	Quarterly	mg/L	16	16	16	16
			Phosphorus	Quarterly	mg/L	3.6	3.6	3.6	3.6
			Reactive Phosphorus	Quarterly	mg/L	0.7	0.70	0.70	0.70
			Total dissolved solids	Quarterly	mg/L	483	483	483	483
			Fluoride	Quarterly	mg/L	0.8	0.8	0.8	0.8
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.005	0.005	0.005	0.005
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	0.011	0.011	0.011	0.011
			Copper	Quarterly	mg/L	0.007	0.007	0.007	0.007
			Nickel	Quarterly	mg/L	0.008	0.008	0.008	0.008
			Lead	Quarterly	mg/L	0.018	0.018	0.018	0.018
			Zinc	Quarterly	mg/L	0.224	0.224	0.224	0.224
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
EPL point 7 BH6	19/07/2018	25/07/2018	pH	Quarterly	pH	8.04	8.04	8.04	8.04
			Conductivity	Quarterly	µS/cm	623	623	623	623
			Sodium Absorption Ratio	Quarterly	-	0.6	0.6	0.6	0.6
			Total Alkalinity as calcium carbonate	Quarterly	mg/L	237	237	237	237
			Chloride	Quarterly	mg/L	29	29	29	29
			Sodium	Quarterly	mg/L	23	23	23	23

			Nitrogen (total)	Quarterly	mg/L	4.5	4.5	4.5	4.5
			Total Kjeldahl Nitrogen	Quarterly	mg/L	4.2	4.2	4.2	4.2
			Nitrate	Quarterly	mg/L	0.32	0.32	0.32	0.32
			Sulfate	Quarterly	mg/L	21	21	21	21
			Phosphorus	Quarterly	mg/L	3.66	3.66	3.66	3.66
			Reactive Phosphorus	Quarterly	mg/L	0.38	0.38	0.38	0.38
			Total dissolved solids	Quarterly	mg/L	314	314	314	314
			Fluoride	Quarterly	mg/L	0.9	0.9	0.9	0.9
			Standing Water Level	Quarterly	m	2	2	2	2
			Arsenic	Quarterly	mg/L	0.002	0.002	0.002	0.002
			Cadmium	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
			Chromium	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Copper	Quarterly	mg/L	<0.001	<0.001	<0.001	<0.001
			Nickel	Quarterly	mg/L	0.002	0.002	0.002	0.002
			Lead	Quarterly	mg/L	0.001	0.001	0.001	0.001
			Zinc	Quarterly	mg/L	0.077	0.077	0.077	0.077
			Mercury	Quarterly	mg/L	<0.0001	<0.0001	<0.0001	<0.0001