

Annex F4

Effluent Quality Monitoring Results

Table F4.1 Effluent Monitoring Results

		1 Jul 22	3 Jul 22	4 Jul 22	5 Jul 22	6 Jul 22	7 Jul 22	8 Jul 22	9 Jul 22	11 Jul 22	12 Jul 22	13 Jul 22
On-site Measurements												
Temperature	°C	30.8	30.3	25.0	34.3	33.0	35.3	34.3	34.8	31.2	34.6	32.5
pH Value	pH Unit	8.4	8.3	8.4	8.4	8.4	8.4	8.4	8.4	8.6	8.4	8.2
Volume Discharged	m³	1,227	1,552	1,051	905	1,059	1,073	926	793	364	41	46
Laboratory Analysis												
Suspended Solids (SS)	mg/L	17.9	61.8	15.6	20.8	21.4	27.1	20.3	38.9	7.6	17.0	15.2
Alkalinity	mg/L	1790	1260	1080	1300	1360	1470	1500	1600	1700	1720	1730
Ammoniacal-nitrogen	mg/L	1.05	0.31	0.42	0.45	0.37	0.16	0.26	0.29	0.29	0.33	0.53
Chloride	mg/L	1730	1450	1210	1490	1500	1580	1660	1740	1820	1620	1600
Nitrite-nitrogen	mg/L	1.23	0.08	0.16	0.08	0.10	0.08	0.09	0.15	0.28	0.34	0.32
Phosphate	mg/L	4.04	4.18	2.47	1.96	2.49	2.50	3.22	3.23	2.87	3.00	4.44
Sulphate	mg/L	290	281	340	470	459	458	390	339	315	276	282
Total Nitrogen	mg/L	101.0	110.0	103.0	88.0	90.7	93.0	105.0	91.1	95.1	105.0	108.0
Nitrate-nitrogen	mg/L	45.1	68.5	60.7	46.4	61.6	46.9	62.1	49.5	53.3	61.4	59.6
Total Inorganic Nitrogen	mg/L	47.38	68.89	61.28	46.93	62.07	47.14	62.45	49.94	53.87	62.07	60.45
Biochemical Oxygen Demand (BOD)	mg/L	5	10	9	7	6	9	5	7	8	8	11
Chemical Oxygen Demand (COD)	mg/L	861	739	608	671	639	702	709	674	758	779	739
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	344	280	252	186	284	290	286	317	309	254	260
Boron	µg/L	4820	3930	3500	3770	3880	3840	3860	4060	4440	4610	4580
Calcium	mg/L	39.6	46.0	64.0	60.8	57.6	53.9	49.6	47.1	43.4	43.0	43.1
Iron	mg/L	1.72	1.28	1.04	1.06	1.17	1.27	1.30	1.37	1.24	1.39	1.37
Magnesium	mg/L	25.0	25.8	24.6	25.3	26.3	26.9	26.8	26.3	25.1	26.2	26.2
Potassium	mg/L	782	624	524	589	634	639	665	682	714	737	737
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	103	79	67	75	80	86	88	91	93	90	89
Copper	µg/L	<10	<10	<10	<10	<10	<10	<10	21	<10	20	11
Nickel	µg/L	96	71	62	74	84	84	88	91	95	100	102
Zinc	µg/L	79	79	62	65	72	70	68	94	70	104	104

		14 Jul 22	15 Jul 22	16 Jul 22	17 Jul 22	18 Jul 22	19 Jul 22	20 Jul 22	21 Jul 22	22 Jul 22	23 Jul 22	24 Jul 22	25 Jul 22
On-site Measurements													
Temperature	°C	33.8	33.7	35.0	35.0	34.0	32.0	36.5	36.9	30.8	30.4	30.4	38.1
pH Value	pH Unit	8.3	8.3	8.2	8.2	8.3	8.3	8.3	8.3	8.5	8.6	8.6	8.5
Volume Discharged	m ³	108	1,197	1,176	1,126	830	789	1,077	1,303	1,309	1,312	1,316	1,192
Laboratory Analysis													
Suspended Solids (SS)	mg/L	7.8	26.0	26.8	95.2	18.3	24.1	24.4	18.8	25.8	14.5	61.0	19.5
Alkalinity	mg/L	1730	1700	1800	1820	1940	2000	2100	2050	2150	2120	2110	2230
Ammoniacal-nitrogen	mg/L	0.52	0.42	0.29	0.70	0.26	0.25	0.34	0.65	0.32	0.33	0.34	0.50
Chloride	mg/L	1640	1680	1800	1870	1870	1700	1760	1870	2000	2030	1950	2020
Nitrite-nitrogen	mg/L	0.47	0.12	0.12	0.13	0.14	0.11	0.11	0.12	0.14	0.16	0.12	0.16
Phosphate	mg/L	4.54	4.72	4.94	5.14	5.41	5.46	5.58	5.83	5.11	5.40	5.33	5.44
Sulphate	mg/L	303	283	258	274	220	162	172	202	186	198	176	182
Total Nitrogen	mg/L	97.2	90.6	92.2	99.4	98.0	92.1	95.0	97.4	109.0	106.0	111.0	111.0
Nitrate-nitrogen	mg/L	53.2	47.7	45.8	46.4	49.1	46.4	43.2	49.5	54.7	50.7	52.6	54.1
Total Inorganic Nitrogen	mg/L	54.19	48.24	46.21	47.23	49.50	46.76	43.65	50.27	55.16	51.19	53.06	54.76
Biochemical Oxygen Demand (BOD)	mg/L	11	11	12	8	6	9	8	3	6	4	13	7
Chemical Oxygen Demand (COD)	mg/L	641	739	770	746	840	832	899	837	887	940	953	997
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	304	309	320	359	354	348	380	374	366	380	394	401
Boron	µg/L	4620	4620	4680	4530	4920	4790	5040	5160	5570	5220	5970	6020
Calcium	mg/L	41.0	44.3	40.5	39.2	32.2	36.1	33.5	36.5	29.0	30.6	33.0	29.6
Iron	mg/L	1.24	1.46	1.39	1.60	1.40	1.57	1.55	1.52	1.56	1.67	1.74	1.79
Magnesium	mg/L	23.8	29.4	30.5	30.4	27.7	27.8	29.1	30.1	26.1	27.5	29.4	27.4
Potassium	mg/L	711	738	739	734	740	789	829	849	786	828	858	923
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	89	92	97	104	106	104	105	106	114	123	122	133
Copper	µg/L	<10	<10	11	<10	<10	<10	<10	<10	17	63	64	<10
Nickel	µg/L	98	96	104	103	108	104	105	107	114	120	119	127
Zinc	µg/L	70	72	82	88	73	76	69	74	81	105	108	78

		26 Jul 22	27 Jul 22	28 Jul 22	29 Jul 22	30 Jul 22	31 Jul 22	1 Aug 22	2 Aug 22	3 Aug 22	7 Sep 22
On-site Measurements											
Temperature	°C	38.1	37.8	35.7	35.5	34.9	32.5	37.0	37.0	36.7	32.9
pH Value	pH										
	Unit	8.2	8.2	8.4	8.4	8.5	8.5	8.3	8.4	8.3	8.4
Volume Discharged	m ³	1,192	1,010	1,074	1,273	1,086	1,127	831	918	1,202	1,251
Laboratory Analysis											
Suspended Solids (SS)	mg/L	33.5	45.5	40.5	41.6	37.9	40.8	27.0	24.5	26.8	25.4
Alkalinity	mg/L	2220	2310	2320	2310	2270	2310	2460	2470	2280	1980
Ammoniacal-nitrogen	mg/L	0.54	0.49	0.35	0.59	0.49	0.55	0.30	0.44	0.32	0.29
Chloride	mg/L	1920	2070	2000	1990	2000	2000	2060	2090	2000	1730
Nitrite-nitrogen	mg/L	0.16	0.13	0.14	0.14	0.16	0.16	0.16	0.14	0.16	0.11
Phosphate	mg/L	5.7	5.41	5.74	6.4	6.53	5.72	6.47	6.55	7.28	5.73
Sulphate	mg/L	157	165	174	171	197	186	193	167	163	149
Total Nitrogen	mg/L	104.0	103	100.0	103.0	107.0	110.0	92.6	94.2	99.5	86.5
Nitrate-nitrogen	mg/L	55	56.8	47.5	48.1	49.2	48.9	37.8	36.6	48.1	45.7
Total Inorganic Nitrogen	mg/L	55.70	57.42	47.99	48.83	49.85	49.61	38.26	37.18	48.58	46.10
Biochemical Oxygen Demand (BOD)	mg/L	9	10	10	8	7	8	10	10	8	8
Chemical Oxygen Demand (COD)	mg/L	990	1040	963	973	978	953	921	1030	1000	1110
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Organic Carbon (TOC)	mg/L	382	434	424	395	394	412	426	410	340	273
Boron	µg/L	5570	5260	5100	5560	5550	5620	5900	5880	5500	4850
Calcium	mg/L	28.1	23.8	27.3	26.6	27.4	26.4	25.7	25.7	24.9	29.2
Iron	mg/L	1.93	1.7	1.77	1.85	1.82	1.83	1.92	1.95	1.80	1.38
Magnesium	mg/L	29.8	23.4	26.3	25.8	26.6	26.4	27.8	28.1	26.6	19.5
Potassium	mg/L	871	794	904	877	900	890	968	983	919	785
Cadmium	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	µg/L	129	124	115	122	126	127	134	129	115	109
Copper	µg/L	<10	15	<10	<10	<10	<10	<10	<10	<10	<10
Nickel	µg/L	126	114	109	113	116	118	124	118	106	108
Zinc	µg/L	84	84	64	68	66	69	71	67	59	58