APPENDIX P

Background Surface Water Quality Data

TABLE P-1
BACKGROUND SURFACE WATER QUALITY

Parameter	Unit	(2) (1) PWQO	BSW1 05-Dec-2012 BSW1	BSW1 09-May-2013 W-5	BSW1 24-Jul-2013 W-5	BSW1 15-Oct-2013 (4) W-4	BSW1 29-Nov-2013 S-3
General Chemistry							
Alkalinity (Total as CaCO3)	ug/l	-- (3)	120000	70000	54000	65000	83000
Ammonia Nitrogen	ug/l	--	240	310	110	54	54
Biologic Oxygen Demand, Five Day	ug/l	--	4000	4000	<2000	6000	<2000
Chemical Oxygen Demand	ug/l	--	45000	170000	90000	150000	150000
Chloride, dissolved	ug/l	--	47000	48000 (5)	34000 (5)	39000	34000
Conductivity	uS/cm	--	430	310	250	270	300
Conductivity (Field)	uS/cm	--	485	666	445	520	395
Dissolved Oxygen (Field)	ug/l	-- (6)	**2300**	**4770**	**3680**	**4110**	**3010**
Nitrate as N	ug/l	--	1200	<100	<500	<1000	<100
Nitrite as N	ug/l	--	58	<10	<50	<100	<10
Nitrogen, Total Kjeldahl	ug/l	--	1100	3100	1500	3400	2500
pH	-	8.5	7.06	7.36	7.33	7.26	7.08
pH (Field)	-	8.5	7.32	7.8	7.6	7.7	7.5
Phosphorus	ug/l	30 (7)	61	130	89	90	48
Sulfate, dissolved	ug/l	--	17000	<5000 (5)	<5000 (5)	<5000 (5)	<5000 (8)
Temperature (Field)	deg c	-- (9)	1.2	19	22	5	0
Total Dissolved Solids	ug/l	--	246000	170000	236000	260000	256000
Total Suspended Solids	ug/l	--	1000	6000	4000	5000	2000
Metals							
Arsenic	ug/l	5	<1.0	1.2	<1.0	<1	<1
Barium	ug/l	--	18	20	18	20	18
Boron	ug/l	200 (10)	17	11	17	13	<10
Cadmium	ug/l	0.5 (10)	<0.10	<0.10	<0.10	<0.1	0.1
Chromium	ug/l	1 (11)	<5.0	<5.0	<5.0	<5	<5
Copper	ug/l	5	2.5	2.0	1.7	1	2
Iron	ug/l	300	790	2400	2200	2600	1100
Lead	ug/l	5 (12)	<0.50	0.79	<0.50	0.8	1.2
Mercury, dissolved	ug/l	0.2	<0.10	<0.10	<0.10	<0.10	<0.10
Zinc	ug/l	30	16	11	<5.0	7	17
Phenols							
Phenolics, Total Recoverable	ug/l	1 (13)	<1.0	<1.0	<1.0	27	3.8

TABLE P-1
BACKGROUND SURFACE WATER QUALITY

Parameter	Unit	(2) (1) PWQO	BSW2 05-Dec-2012 BSW2	BSW2 09-May-2013 W-3	BSW2 24-Jul-2013 W-4	BSW2 15-Oct-2013 W-1	BSW2 29-Nov-2013 S-2
General Chemistry							
Alkalinity (Total as CaCO3)	ug/l	-- (3)	250000	230000	180000	180000	70000
Ammonia Nitrogen	ug/l	--	54	69	73	<50	55
Biologic Oxygen Demand, Five Day	ug/l	--	5000	3000	<2000	<2000	<2000
Chemical Oxygen Demand	ug/l	--	31000	60000	43000	51000	160000
Chloride, dissolved	ug/l	--	250000	130000	96000	110000	26000
Conductivity	uS/cm	--	1800	1100	770	910	240
Conductivity (Field)	uS/cm	--	1696	1010	1005	980	1005
Dissolved Oxygen (Field)	ug/l	-- (6)	8810	**5210**	5080	**5400**	**3220**
Nitrate as N	ug/l	--	<100	<100	<100	<100	<100
Nitrite as N	ug/l	--	<10	<10	<10	<10	<10
Nitrogen, Total Kjeldahl	ug/l	--	1200	970	980	1000	2600
pH	-	8.5	7.76	8.07	8.21	7.95	6.98
pH (Field)	-	8.5	6.86	7.7	7.5	7.4	7.7
Phosphorus	ug/l	30 (7)	37	69	38	29	54
Sulfate, dissolved	ug/l	--	200000	85000	68000	99000	<5000 (8)
Temperature (Field)	deg c	-- (9)	0	16	24	6	1
Total Dissolved Solids	ug/l	--	966000	616000	448000	538000	224000
Total Suspended Solids	ug/l	--	7000	7000	2000	2000	1000
Metals							
Arsenic	ug/l	5	<1.0	<1.0	<1.0	<1	<1
Barium	ug/l	--	68	47	24	46	18
Boron	ug/l	200 (10)	63	32	34	33	<10
Cadmium	ug/l	0.5 (10)	<0.10	<0.10	<0.10	0.1	0.2
Chromium	ug/l	1 (11)	<5.0	<5.0	<5.0	<5	<5
Copper	ug/l	5	3.1	2.5	1.7	<1	3
Iron	ug/l	300	680	830	110	210	1000
Lead	ug/l	5 (12)	0.63	<0.50	<0.50	<0.5	1.4
Mercury, dissolved	ug/l	0.2	<0.10	<0.10	<0.10	<0.10	<0.10
Zinc	ug/l	30	11	5.0	<5.0	6	19
Phenols							
Phenolics, Total Recoverable	ug/l	1 (13)	<1.0	<1.0	<1.0	5.9	3.1

TABLE P-1
BACKGROUND SURFACE WATER QUALITY

Parameter	Unit	(2) (1) PWQO	BSW3 05-Dec-2012 BSW3	BSW3 09-May-2013 W-2	BSW3 24-Jul-2013 W-2	BSW3 15-Oct-2013 W-3	BSW3 29-Nov-2013 S-1
General Chemistry							
Alkalinity (Total as CaCO3)	ug/l	-- (3)	83000	130000	230000	92000	150000
Ammonia Nitrogen	ug/l	--	<50	69	83	<50	56
Biologic Oxygen Demand, Five Day	ug/l	--	4000	3000	2000	4000	<2000
Chemical Oxygen Demand	ug/l	--	70000	99000	44000	81000	90000
Chloride, dissolved	ug/l	--	270000	210000	440000	140000	84000
Conductivity	uS/cm	--	1300	1100	2000	830	620
Conductivity (Field)	uS/cm	--	1175	1015	1075	985	1495
Dissolved Oxygen (Field)	ug/l	-- (6)	9290	5840	**3880**	**4010**	**2040**
Nitrate as N	ug/l	--	<100	<100	<100	<100	100
Nitrite as N	ug/l	--	<10	<10	<10	<10	<10
Nitrogen, Total Kjeldahl	ug/l	--	2200	1500	1000	940	2400
pH	-	8.5	6.94	7.76	7.98	7.44	7.23
pH (Field)	-	8.5	7.04	7.6	7.7	7.5	7.7
Phosphorus	ug/l	30 (7)	130	93	61	110	200
Sulfate, dissolved	ug/l	--	63000	18000	63000	52000	32000
Temperature (Field)	deg c	-- (9)	1.5	17	23	6	1
Total Dissolved Solids	ug/l	--	750000	596000	1070000	524000	376000
Total Suspended Solids	ug/l	--	8000	4000	2000	8000	19000
Metals							
Arsenic	ug/l	5	<1.0	1.1	<1.0	<1	<1
Barium	ug/l	--	61	68	83	47	53
Boron	ug/l	200 (10)	<10	15	19	13	15
Cadmium	ug/l	0.5 (10)	<0.10	<0.10	<0.10	<0.1	<0.1
Chromium	ug/l	1 (11)	<5.0	<5.0	<5.0	<5	<5
Copper	ug/l	5	6.9	2.4	2.2	2	2
Iron	ug/l	300	310	610	450	540	1300
Lead	ug/l	5 (12)	<0.50	<0.50	<0.50	<0.5	<0.5
Mercury, dissolved	ug/l	0.2	<0.10	<0.10	<0.10	<0.10	<0.10
Zinc	ug/l	30	13	26	<5.0	27	23
Phenols							
Phenolics, Total Recoverable	ug/l	1 (13)	<1.0	<1.0	<1.0	28	3.6

TABLE P-1
BACKGROUND SURFACE WATER QUALITY

Parameter	Unit	(2) (1) PWQO	BSW4 05-Dec-2012 BSW4	BSW4 09-May-2013 W-4	BSW4 24-Jul-2013 W-9	BSW4 15-Oct-2013 W-5	BSW4 29-Nov-2013 S-7
General Chemistry							
Alkalinity (Total as CaCO3)	ug/l	-- (3)	200000	240000	170000	180000	240000
Ammonia Nitrogen	ug/l	--	50	52	85	<50	150
Biologic Oxygen Demand, Five Day	ug/l	--	3000	3000	<2000	2000	<2000
Chemical Oxygen Demand	ug/l	--	18000	58000	43000	45000	44000
Chloride, dissolved	ug/l	--	210000	140000	95000	110000	110000
Conductivity	uS/cm	--	1500	1100	770	910	900
Conductivity (Field)	uS/cm	--	1420	1070	995	1020	1015
Dissolved Oxygen (Field)	ug/l	-- (6)	**5520**	**5110**	**4440**	**4600**	**2990**
Nitrate as N	ug/l	--	220	<100	<100	<100	3200
Nitrite as N	ug/l	--	<10	<10	<10	<10	<10
Nitrogen, Total Kjeldahl	ug/l	--	770	790	810	930	1400
pH	-	8.5	7.66	8.10	8.31	7.99	7.74
pH (Field)	-	8.5	6.85	7.6	7.6	7.4	7.6
Phosphorus	ug/l	30 (7)	26	65	39	28	110
Sulfate, dissolved	ug/l	--	170000	93000	68000	99000	42000
Temperature (Field)	deg c	-- (9)	0.5	17	20	5	0
Total Dissolved Solids	ug/l	--	796000	646000	462000	532000	492000
Total Suspended Solids	ug/l	--	6000	7000	<1000	3000	61000
Metals							
Arsenic	ug/l	5	<1.0	<1.0	<1.0	<1	<1
Barium	ug/l	--	51	48	22	45	110
Boron	ug/l	200 (10)	65	35	32	31	35
Cadmium	ug/l	0.5 (10)	<0.10	<0.10	<0.10	<0.1	<0.1
Chromium	ug/l	1 (11)	<5.0	<5.0	<5.0	<5	6
Copper	ug/l	5	3.4	2.7	1.4	1	4
Iron	ug/l	300	640	840	<100	210	2900
Lead	ug/l	5 (12)	0.61	<0.50	<0.50	<0.5	1.3
Mercury, dissolved	ug/l	0.2	<0.10	<0.10	<0.10	<0.10	<0.10
Zinc	ug/l	30	17	9.5	<5.0	8	20
Phenols							
Phenolics, Total Recoverable	ug/l	1 (13)	<1.0	<1.0	<1.0	8.0	<1.0

TABLE P-1
BACKGROUND SURFACE WATER QUALITY

Parameter	Unit	(2) (1) PWQO	BSW5 05-Dec-2012 (14) 5	BSW5 09-May-2013 W-1	BSW5 24-Jul-2013 W-1	BSW5 15-Oct-2013 (4) W-9	BSW5 29-Nov-2013 S-8
General Chemistry							
Alkalinity (Total as CaCO3)	ug/l	-- (3)	--	180000	140000	150000	350000
Ammonia Nitrogen	ug/l	--	--	<50	100	<50	<50
Biologic Oxygen Demand, Five Day	ug/l	--	--	2000	<2000	38000	<2000
Chemical Oxygen Demand	ug/l	--	--	75000	47000	150000	42000
Chloride, dissolved	ug/l	--	--	440000	170000	87000	430000
Conductivity	uS/cm	--	--	1900	1000	630	2200
Conductivity (Field)	uS/cm	--	--	1800	720	810	870
Dissolved Oxygen (Field)	ug/l	-- (6)	--	6290	**3110**	**3490**	**2740**
Nitrate as N	ug/l	--	--	<100	<100	<1000	<100
Nitrite as N	ug/l	--	--	<10	<10	<100	<10
Nitrogen, Total Kjeldahl	ug/l	--	--	1400	1000	2200	1100
pH	-	8.5	--	7.90	7.74	7.65	7.56
pH (Field)	-	8.5	--	7.5	7.8	7.7	7.6
Phosphorus	ug/l	30 (7)	--	71	45	140	38
Sulfate, dissolved	ug/l	--	--	42000	55000	11000	110000
Temperature (Field)	deg c	-- (9)	--	18	22	7	0
Total Dissolved Solids	ug/l	--	--	1070000	558000	420000	1210000
Total Suspended Solids	ug/l	--	--	3000	8000	5000	9000
Metals							
Arsenic	ug/l	5	--	<1.0	<1.0	<1	<1
Barium	ug/l	--	--	62	39	37	65
Boron	ug/l	200 (10)	--	13	19	22	<10
Cadmium	ug/l	0.5 (10)	--	<0.10	<0.10	<0.1	<0.1
Chromium	ug/l	1 (11)	--	<5.0	<5.0	<5	<5
Copper	ug/l	5	--	1.3	2.1	1	1
Iron	ug/l	300	--	1100	910	3100	1600
Lead	ug/l	5 (12)	--	<0.50	<0.50	<0.5	<0.5
Mercury, dissolved	ug/l	0.2	--	<0.10	<0.10	<0.10	<0.10
Zinc	ug/l	30	--	5.4	<5.0	6	9
Phenols							
Phenolics, Total Recoverable	ug/l	1 (13)	--	<1.0	<1.0	55	2.1

TABLE P-1
BACKGROUND SURFACE WATER QUALITY

Parameter	Unit	(2) (1) PWQO	BSW6 05-Dec-2012 BSW6	BSW6 09-May-2013 W-7	BSW6 24-Jul-2013 W-7	BSW6 15-Oct-2013 W-7	BSW6 29-Nov-2013 S-5
General Chemistry							
Alkalinity (Total as CaCO3)	ug/l	-- (3)	230000	180000	250000	220000	280000
Ammonia Nitrogen	ug/l	--	<50	72	110	<50	<50
Biologic Oxygen Demand, Five Day	ug/l	--	3000	<2000	<2000	<2000	<2000
Chemical Oxygen Demand	ug/l	--	14000	38000	17000	41000	8100
Chloride, dissolved	ug/l	--	160000	68000	90000	90000	57000
Conductivity	uS/cm	--	1200	650	850	800	830
Conductivity (Field)	uS/cm	--	1190	596	970	995	825
Dissolved Oxygen (Field)	ug/l	-- (6)	8540	11020	5910	**6200**	**5600**
Nitrate as N	ug/l	--	3500	3500	3500	2700	8400
Nitrite as N	ug/l	--	<10	39	58	<10	<10
Nitrogen, Total Kjeldahl	ug/l	--	790	900	1100	160	610
pH	-	8.5	7.97	8.24	8.09	8.15	7.89
pH (Field)	-	8.5	7.17	8.1	7.8	7.6	7.8
Phosphorus	ug/l	30 (7)	42	38	52	24	29
Sulfate, dissolved	ug/l	--	75000	26000	36000	35000	34000
Temperature (Field)	deg c	-- (9)	0.3	19	20	6	1
Total Dissolved Solids	ug/l	--	670000	316000	502000	462000	460000
Total Suspended Solids	ug/l	--	4000	3000	7000	5000	24000
Metals							
Arsenic	ug/l	5	<1.0	<1.0	<1.0	<1	<1
Barium	ug/l	--	100	120	120	79	210
Boron	ug/l	200 (10)	54	36	59	46	68
Cadmium	ug/l	0.5 (10)	<0.10	<0.10	<0.10	<0.1	<0.1
Chromium	ug/l	1 (11)	<5.0	<5.0	<5.0	<5	<5
Copper	ug/l	5	4.5	1.8	2.0	2	3
Iron	ug/l	300	740	840	240	1700	610
Lead	ug/l	5 (12)	<0.50	<0.50	<0.50	<0.5	<0.5
Mercury, dissolved	ug/l	0.2	<0.10	<0.10	<0.10	<0.10	<0.10
Zinc	ug/l	30	<5.0	<5.0	<5.0	6	7
Phenols							
Phenolics, Total Recoverable	ug/l	1 (13)	<1.0	<1.0	<1.0	4.9	<1.0

TABLE P-1
BACKGROUND SURFACE WATER QUALITY

Parameter	Unit	(2) (1) PWQO	BSW7 05-Dec-2012 BSW7	BSW7 09-May-2013 W-8	BSW7 24-Jul-2013 W-8	BSW7 15-Oct-2013 W-8	BSW7 29-Nov-2013 S-6
General Chemistry							
Alkalinity (Total as CaCO3)	ug/l	-- (3)	220000	190000	250000	220000	220000
Ammonia Nitrogen	ug/l	--	66	<50	110	<50	210
Biologic Oxygen Demand, Five Day	ug/l	--	3000	<2000	<2000	<2000	<2000
Chemical Oxygen Demand	ug/l	--	17000	26000	16000	42000	56000
Chloride, dissolved	ug/l	--	220000	86000	92000	98000	87000
Conductivity	uS/cm	--	1400	750	870	810	790
Conductivity (Field)	uS/cm	--	1325	700	895	915	860
Dissolved Oxygen (Field)	ug/l	-- (6)	12350	11490	6880	6940	**5840**
Nitrate as N	ug/l	--	3000	3500	2800	1900	2800
Nitrite as N	ug/l	--	<10	74	27	<10	26
Nitrogen, Total Kjeldahl	ug/l	--	810	800	970	550	2000
pH	-	8.5	7.93	8.14	8.11	8.12	7.69
pH (Field)	-	8.5	7.13	7.8	7.9	7.7	7.9
Phosphorus	ug/l	30 (7)	42	21	37	47	110
Sulfate, dissolved	ug/l	--	83000	32000	39000	39000	37000
Temperature (Field)	deg c	-- (9)	0.6	18	22	6	1
Total Dissolved Solids	ug/l	--	736000	416000	510000	474000	456000
Total Suspended Solids	ug/l	--	12000	3000	3000	3000	51000
Metals							
Arsenic	ug/l	5	<1.0	<1.0	<1.0	<1	<1
Barium	ug/l	--	120	110	110	80	93
Boron	ug/l	200 (10)	41	42	62	47	32
Cadmium	ug/l	0.5 (10)	<0.10	<0.10	<0.10	<0.1	<0.1
Chromium	ug/l	1 (11)	<5.0	<5.0	<5.0	<5	<5
Copper	ug/l	5	3.4	1.8	2.1	1	3
Iron	ug/l	300	860	310	130	770	2300
Lead	ug/l	5 (12)	<0.50	<0.50	<0.50	<0.5	1.0
Mercury, dissolved	ug/l	0.2	<0.10	<0.10	<0.10	<0.10	<0.10
Zinc	ug/l	30	<5.0	<5.0	<5.0	6	16
Phenols							
Phenolics, Total Recoverable	ug/l	1 (13)	<1.0	<1.0	<1.0	3.2	1.0

TABLE P-1
BACKGROUND SURFACE WATER QUALITY

Parameter	Unit	(2) (1) PWQO	BSW8 09-May-2013 W-6	BSW8 24-Jul-2013 W-6	BSW8 15-Oct-2013 W-6	BSW8 29-Nov-2013 S-4
General Chemistry						
Alkalinity (Total as CaCO3)	ug/l	--(3)	190000	230000	290000	98000
Ammonia Nitrogen	ug/l	--	75	160	<50	190
Biologic Oxygen Demand, Five Day	ug/l	--	<2000	2000	<2000	2000
Chemical Oxygen Demand	ug/l	--	13000	<4000	6600	120000
Chloride, dissolved	ug/l	--	48000	61000	67000	45000
Conductivity	uS/cm	--	650	740	840	360
Conductivity (Field)	uS/cm	--	700	895	1010	920
Dissolved Oxygen (Field)	ug/l	--(6)	9890	5250	**5420**	**4290**
Nitrate as N	ug/l	--	6300	6100	4600	<100
Nitrite as N	ug/l	--	38	100	<10	<10
Nitrogen, Total Kjeldahl	ug/l	--	610	860	1100	2200
pH	-	8.5	8.28	8.02	8.12	6.97
pH (Field)	-	8.5	8.2	7.9	7.7	7.9
Phosphorus	ug/l	30(7)	38	69	17	55
Sulfate, dissolved	ug/l	--	26000	28000	32000	<5000(8)
Temperature (Field)	deg c	--(9)	16	23	7	0
Total Dissolved Solids	ug/l	--	360000	468000	476000	264000
Total Suspended Solids	ug/l	--	4000	6000	2000	3000
Metals						
Arsenic	ug/l	5	<1.0	<1.0	<1	<1
Barium	ug/l	--	190	200	180	20
Boron	ug/l	200(10)	47	60	86	<10
Cadmium	ug/l	0.5(10)	<0.10	<0.10	<0.1	<0.1
Chromium	ug/l	1(11)	<5.0	<5.0	<5	<5
Copper	ug/l	5	1.4	1.9	1	2
Iron	ug/l	300	160	120	<100	1800
Lead	ug/l	5(12)	<0.50	<0.50	<0.5	1.0
Mercury, dissolved	ug/l	0.2	<0.10	<0.10	<0.10	<0.10
Zinc	ug/l	30	<5.0	<5.0	<5	18
Phenols						
Phenolics, Total Recoverable	ug/l	1(13)	<1.0	<1.0	<1.0	3.2

TABLE P-1
BACKGROUND SURFACE WATER QUALITY

Parameter	Unit	(2) (1) PWQO	BSW9 08-Nov-2013 M-1	BSW9 29-Nov-2013 (16) s9	BSW9 11-Dec-2013 BSW-9
General Chemistry					
Alkalinity (Total as CaCO3)	ug/l	-- (3)	170000	--	220000
Ammonia Nitrogen	ug/l	--	<50	--	<50
Biologic Oxygen Demand, Five Day	ug/l	--	3000	--	2000
Chemical Oxygen Demand	ug/l	--	45000	--	40000
Chloride, dissolved	ug/l	--	30000	--	37000
Conductivity	uS/cm	--	490	--	630
Conductivity (Field)	uS/cm	--	474	--	479
Dissolved Oxygen (Field)	ug/l	-- (6)	9620	--	-- (15)
Nitrate as N	ug/l	--	<100	--	<100
Nitrite as N	ug/l	--	<10	--	<10
Nitrogen, Total Kjeldahl	ug/l	--	660	--	1300
pH	-	8.5	7.64	--	7.85
pH (Field)	-	8.5	7.83	--	7.63
Phosphorus	ug/l	30 (7)	17	--	56
Sulfate, dissolved	ug/l	--	41000	--	44000
Temperature (Field)	deg c	-- (9)	5.6	--	0.1
Total Dissolved Solids	ug/l	--	284000	--	328000
Total Suspended Solids	ug/l	--	3000	--	4000
Metals					
Arsenic	ug/l	5	<1	--	<1
Barium	ug/l	--	24	--	29
Boron	ug/l	200 (10)	50	--	52
Cadmium	ug/l	0.5 (10)	<0.1	--	<0.1
Chromium	ug/l	1 (11)	<5	--	<5
Copper	ug/l	5	2	--	3
Iron	ug/l	300	210	--	370
Lead	ug/l	5 (12)	<0.5	--	<0.5
Mercury, dissolved	ug/l	0.2	<0.10	--	<0.10
Zinc	ug/l	30	<5	--	11
Phenols					
Phenolics, Total Recoverable	ug/l	1 (13)	3.6	--	3.9

TABLE P-1
BACKGROUND SURFACE WATER QUALITY

Footnotes:
Tables should be read in conjunction with the accompanying document.
< value = Indicates parameter not detected above laboratory method detection limit.
> value = Indicates parameter detected above equipment analytical range.
-- Chemical not analyzed or criteria not defined.
Grey background indicates exceedances.
Bold indicates parameter concentration less than PWQO range for dissolved oxygen
(1) Provincial Water Quality Objectives
(2) Underlined Font = Parameter concentration greater than PWQO
(3) Alkalinity should not be decreased by more than 25% of the natural concentration.
(4) Nitrite/Nitrate: Due to the colour interferences, sample required dilution. Detection limits were adjusted accordingly.
(5) Due to colour interferences, sample required dilution. Detection limit was adjusted accordingly.
(6) Objective depends on water temperature and biota. Dissolved oxygen concentrations should not be less than the values specified in the PWQO document for cold water biota (e.g. salmonid fish communities) and warm water biota (e.g. centrarchid fish communities).
(7) Current scientific evidence is insufficient to develop a firm Objective at this time. Accordingly, the following phosphorus concentrations should be considered as general guidelines which should be supplemented by site-specific studies: To avoid nuisance concentrations of algae in lakes, average total phosphorus concentrations for the ice-free period should not exceed 20 ug/L; A high level of protection against aesthetic deterioration will be provided by a total phosphorus concentration for the ice-free period of 10 ug/L or less. This should apply to all lakes naturally below this value; Excessive plant growth in rivers and streams
(8) Detection Limit was raised due to matrix interferences.
(9) (1) General: The natural thermal regime of any body of water shall not be altered so as to impair the quality of the natural environment. In particular, the diversity, distribution and abundance of plant and animal life shall not be significantly changed. (2) Waste Heat Discharge: (a) Ambient Temperature Changes: The temperature at the edge of a mixing zone shall not exceed the natural ambient water temperature at a representative control location by more than 10°C (18°F). However, in special circumstances, local conditions may require a significantly lower temperature difference than 10°C (18°F). Potential dischargers are to apply to the MOEE for guidance as to the allowable temperature rise for each thermal discharge. This ministry will also specify the nature of the mixing zone and the procedure for the establishment of a representative control location for temperature recording on a case-by-case basis. (b) Discharge Temperature Permitted: The maximum temperature of the receiving body of water, at any point in the thermal plume outside a mixing zone, shall not exceed 30°C (86°F) or the temperature of a representative control location plus 10°C (18°F) or the allowed temperature difference, which ever is the lesser temperature. These maximum temperatures are to be measured on a mean daily basis from continuous records. (c) Taking and Discharging of Cooling Water: Users of cooling water shall meet both the Objectives for temperature outlined above and the "Procedures for the Taking and Discharge of Cooling Water" as outlined in the MOEE publication Deriving Receiving-Water Based, Point-Source Effluent Requirements for Ontario Waters(1994).
(10) See Section 1.2.3. of PWQO. This Interim PWQO was set for emergency purposes based on the best information readily available. Employ due caution when applying this value.
(11) PWQO values exist for Cr(III) and Cr(VI).
(12) If Alkalinity as CaCO3 < 20 mg/L, PWQO = 5 µg/L; if alkalinity as CaCO3 from 20 to 40 mg/L, PWQO = 10 µg/L; if alkalinity as CaCO3 from 40 to 80 mg/L, PWQO = 20 µg/L; if alkalinity as CaCO3 > 80 mg/L, PWQO = 25 ug/L.
(13) Determined by the total reactive phenols test - the 4-AAP (4-amino-antipyrine) test. This objective should be used primarily as a screening tool. The isomer specific PWQOs for various phenolics should be employed where possible.
(14) Monitoring location was dry during this sampling event. No sample was collected.
(15) Parameter was not measured.
(16) Monitoring location was not accessible.