

APPENDIX

E

SURFACE WATER
CHEMISTRY



Figure E-1
Concentration Versus Time - SW1 (971)
Oxford County Waste Management Facility

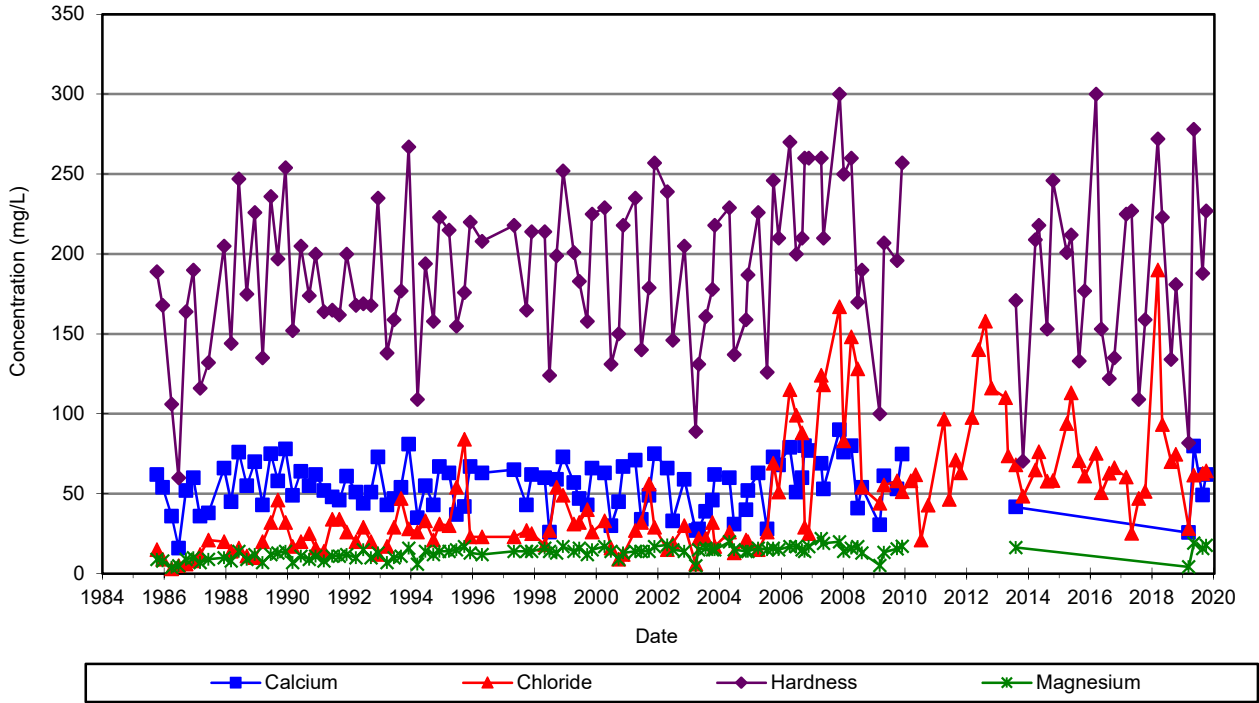
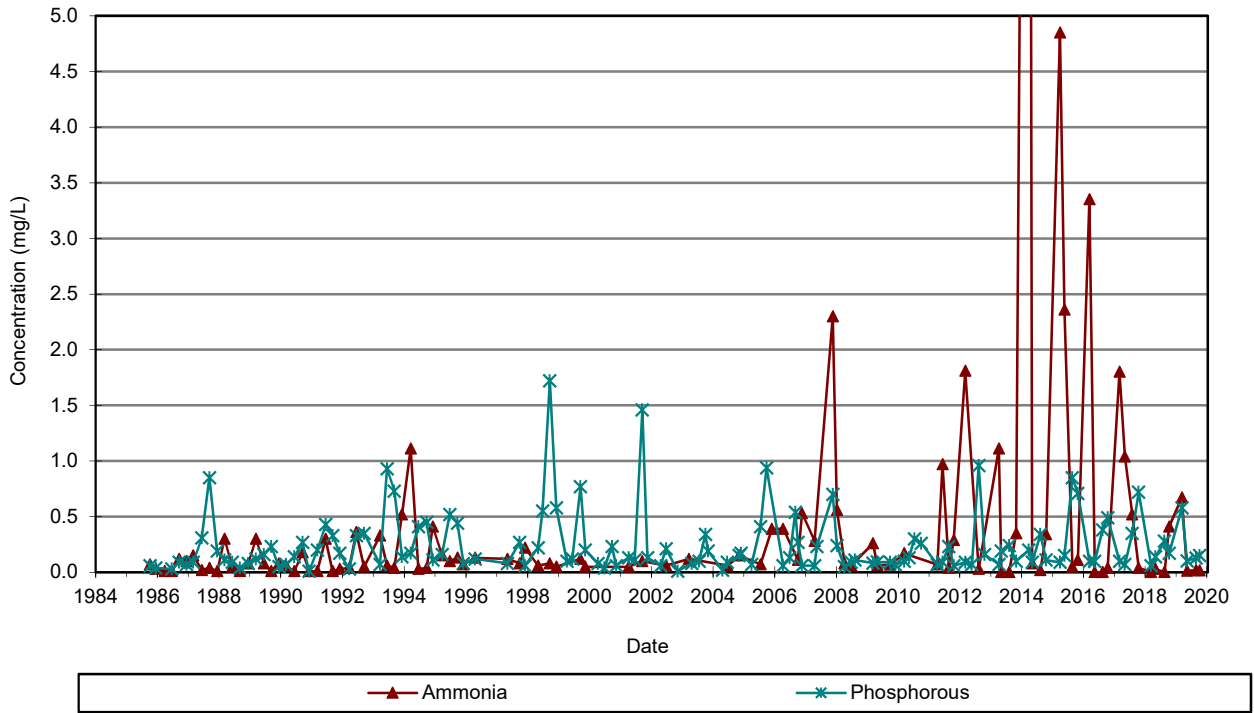
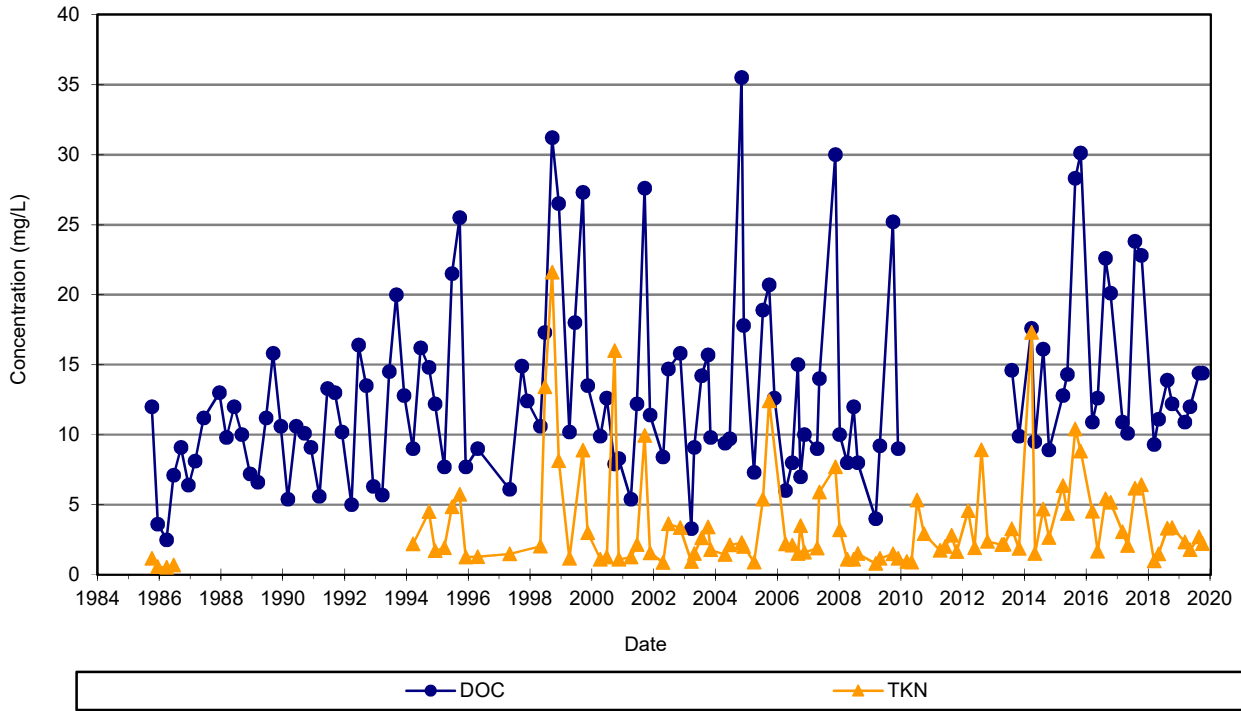


Figure E-2
Concentration Versus Time - SW1 (971)
Oxford County Waste Management Facility



Note: Ammonia - March 28/2014 = 17 mg/L

**Figure E-3
Concentration Versus Time - SW1 (971)
Oxford County Waste Management Facility**



**Figure E-4
Concentration Versus Time - SW4 (974)
Oxford County Waste Management Facility**

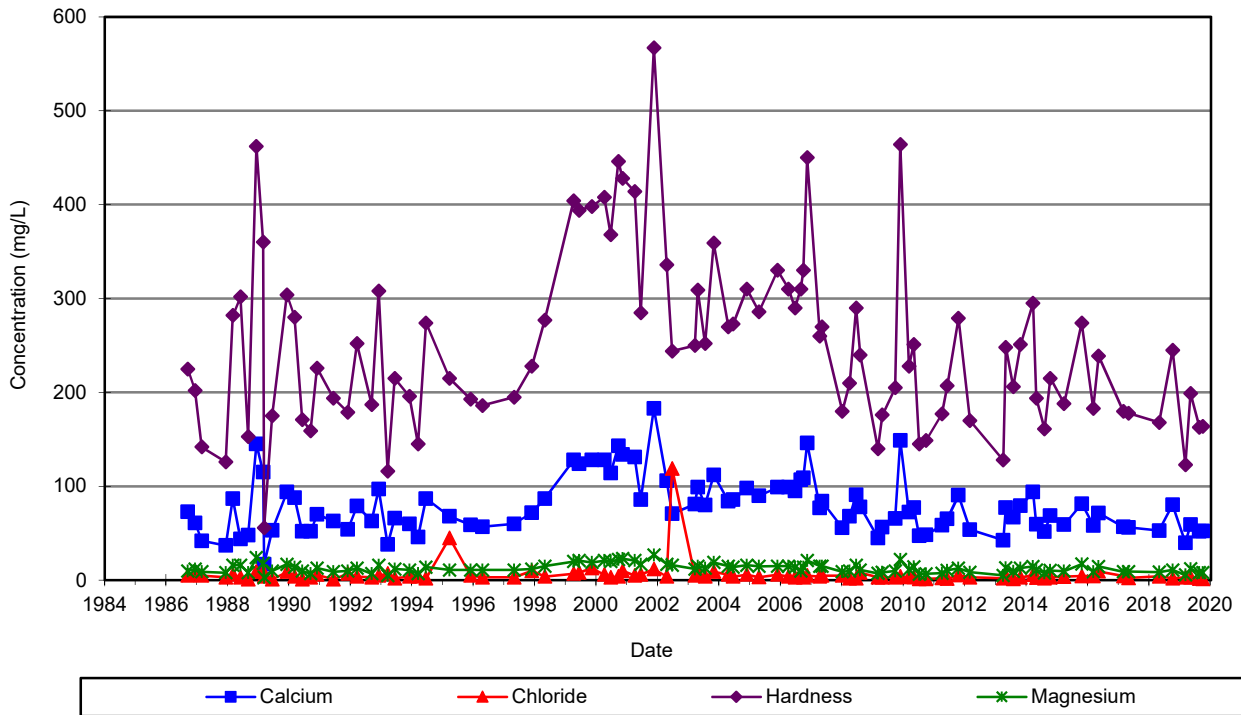


Figure E-5
Concentration Versus Time - SW4 (974)
Oxford County Waste Management Facility

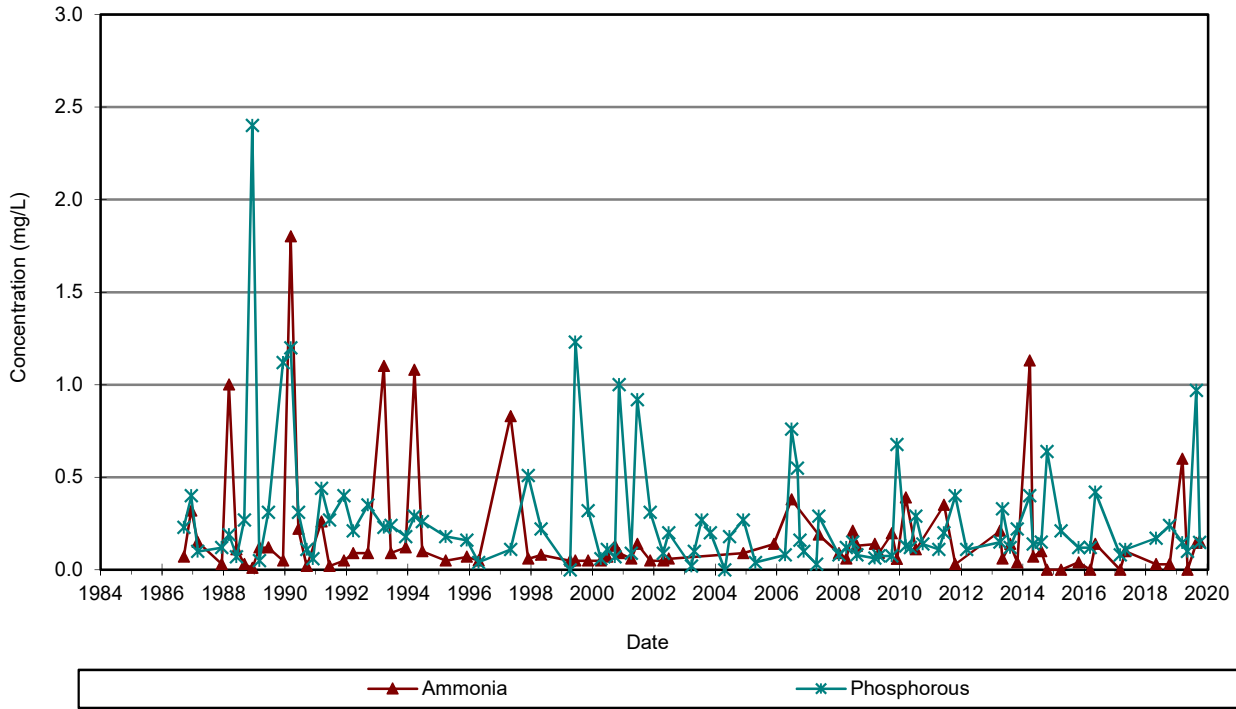


Figure E-6
Concentration Versus Time - SW4 (974)
Oxford County Waste Management Facility

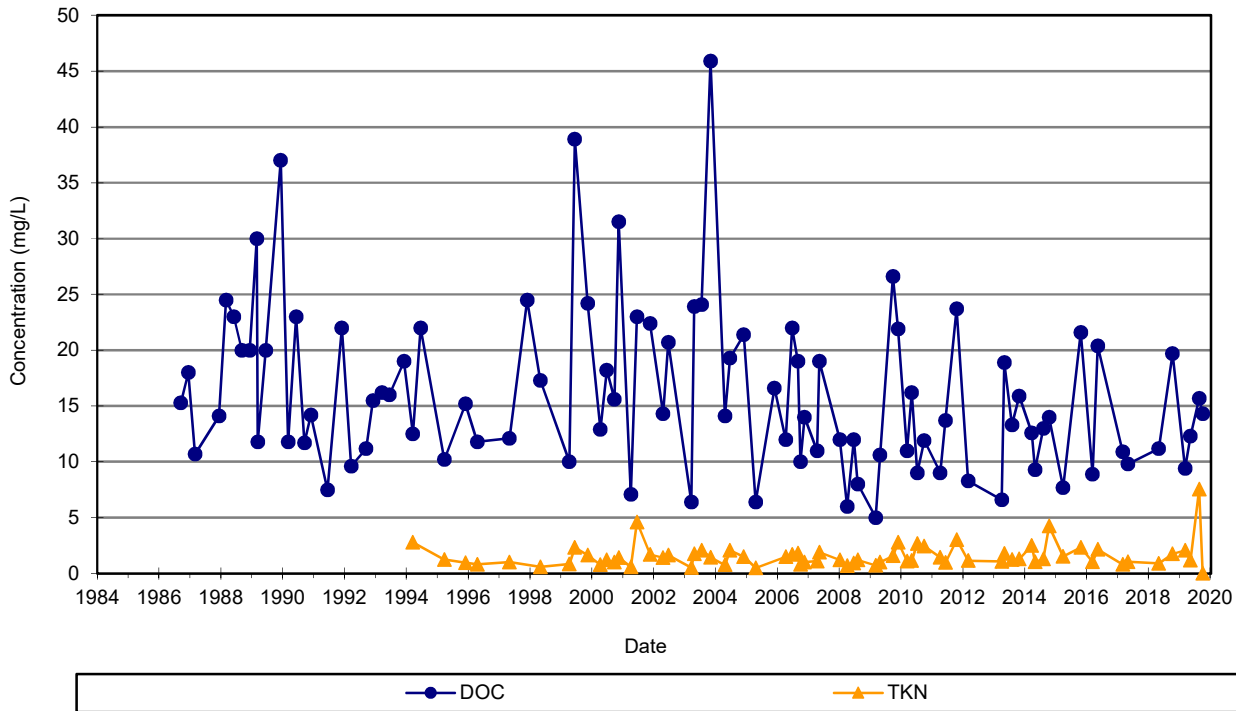


Figure E-7
Concentration Versus Time - SW7 (977)
Oxford County Waste Management Facility

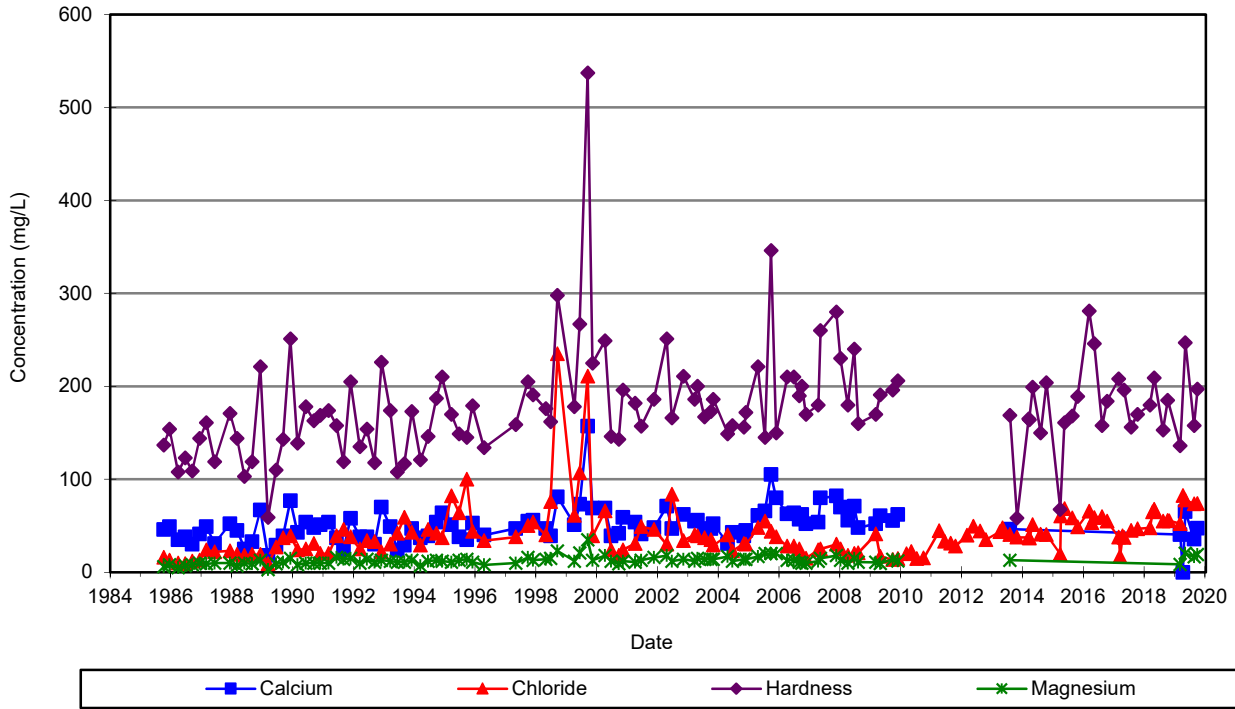
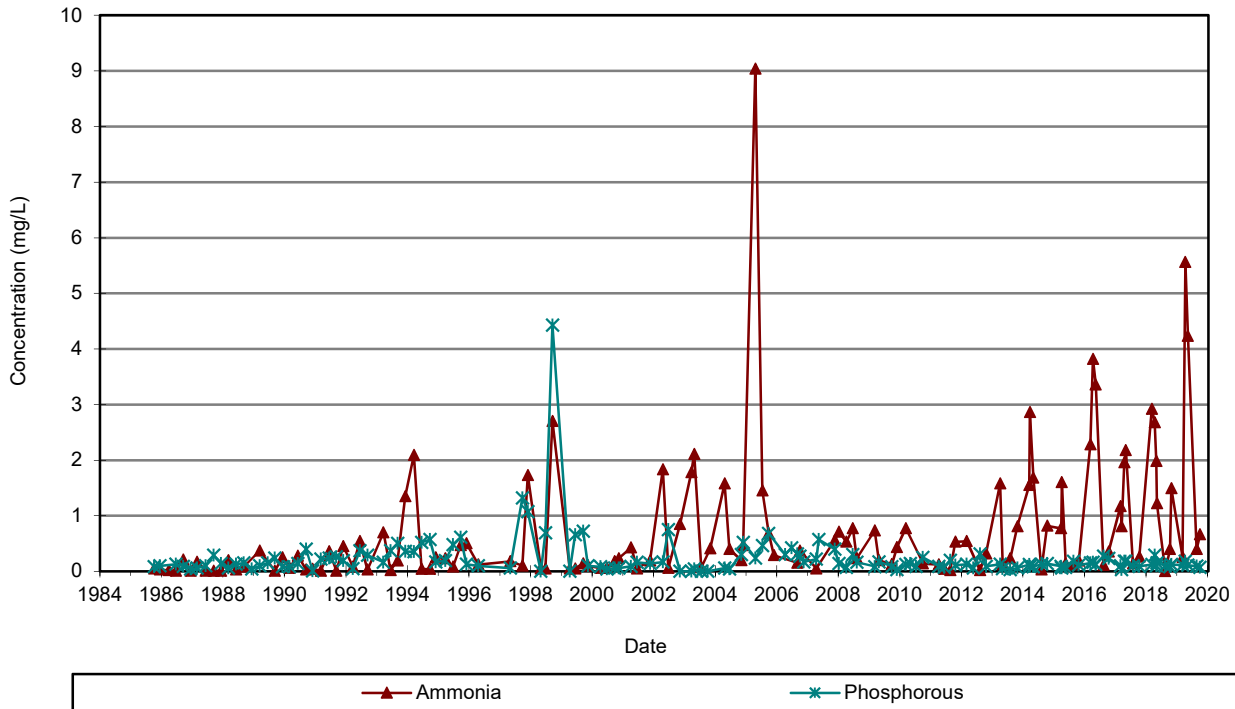
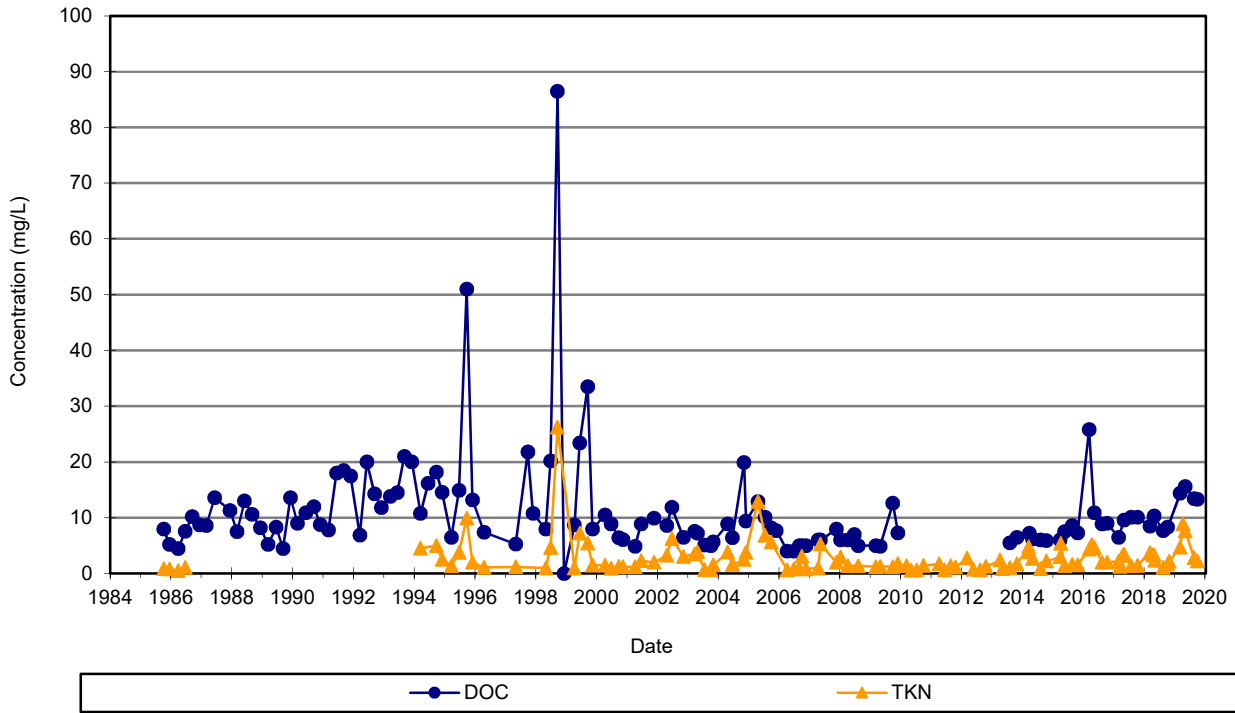


Figure E-8
Concentration Versus Time - SW7 (977)
Oxford County Waste Management Facility



**Figure E-9
Concentration Versus Time - SW7 (977)
Oxford County Waste Management Facility**



**Figure E-10
Concentration Versus Time - SW8 (978)
Oxford County Waste Management Facility**

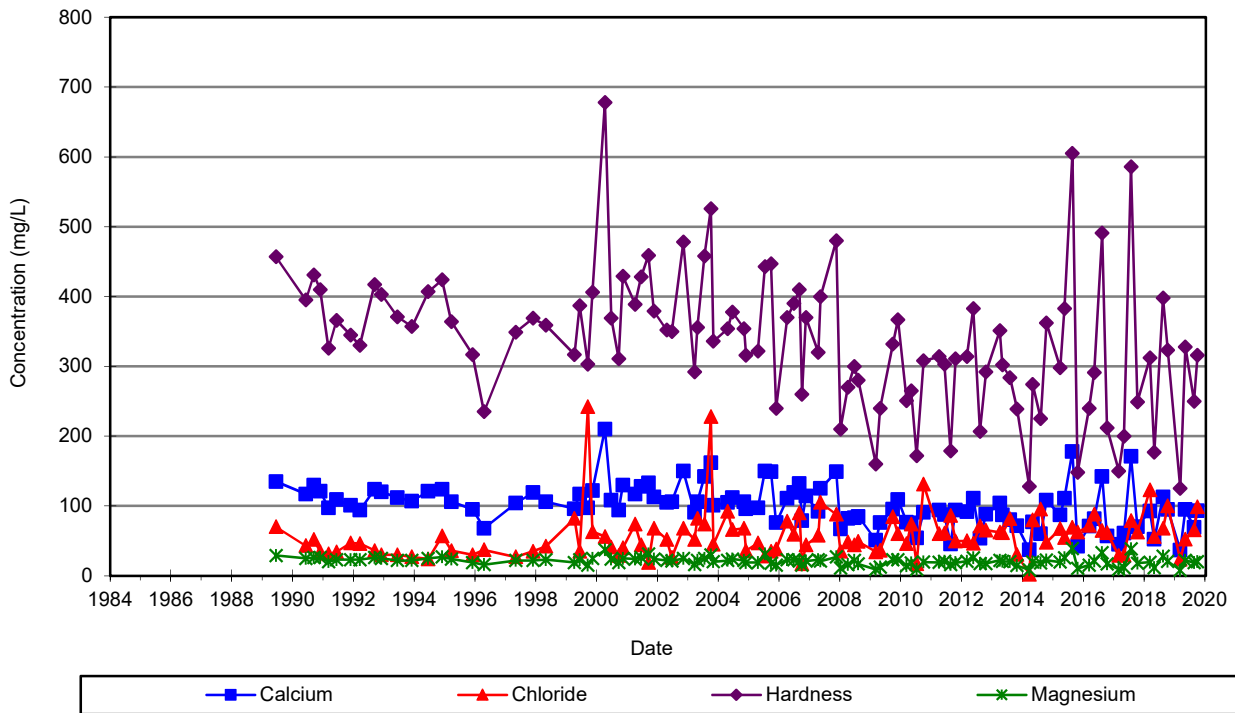
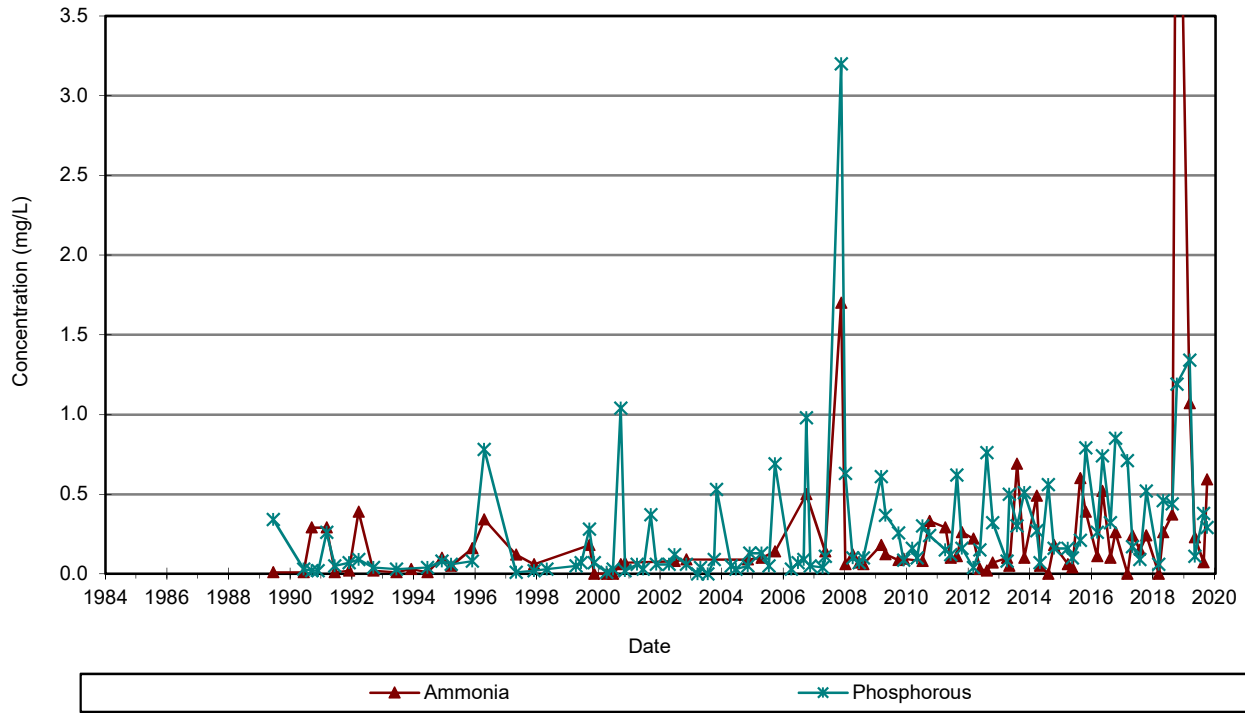


Figure E-11
Concentration Versus Time - SW8 (978)
Oxford County Waste Management Facility



Note: Ammonia - October 15/2018 = 5.8 mg/L

Figure E-12
Concentration Versus Time - SW8 (978)
Oxford County Waste Management Facility

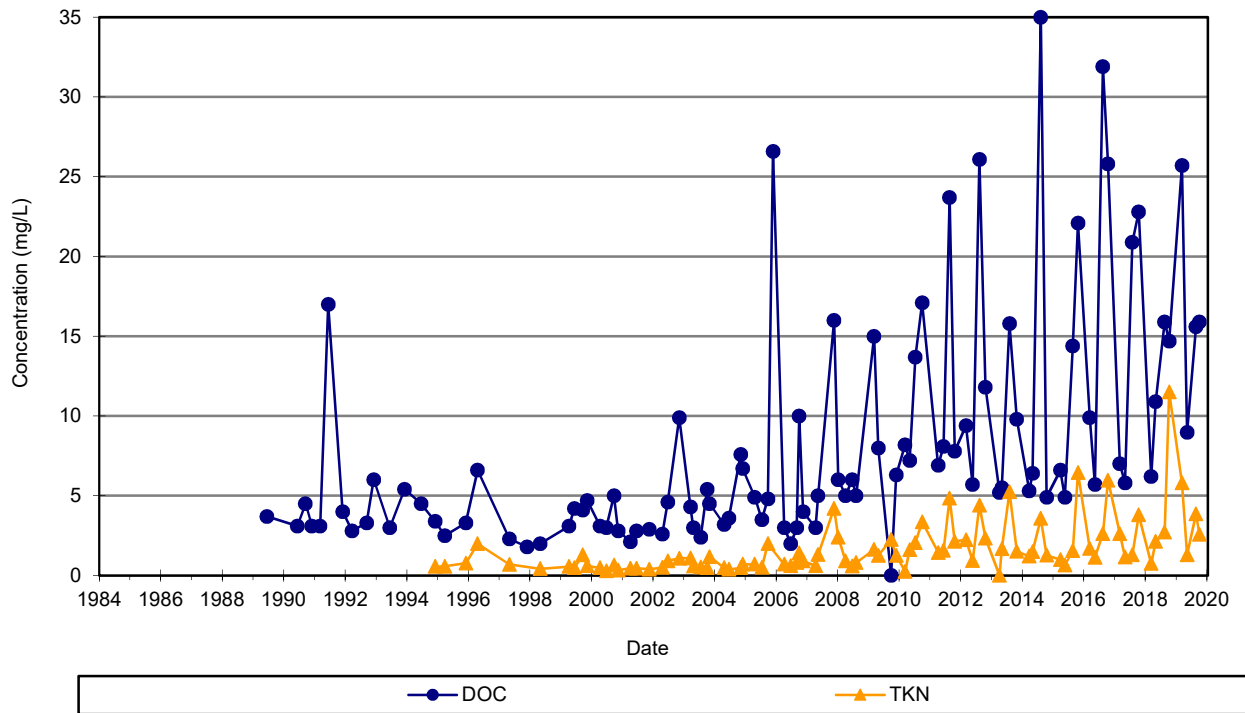


Figure E-13
Concentration Versus Time - SW9 (979)
Oxford County Waste Management Facility

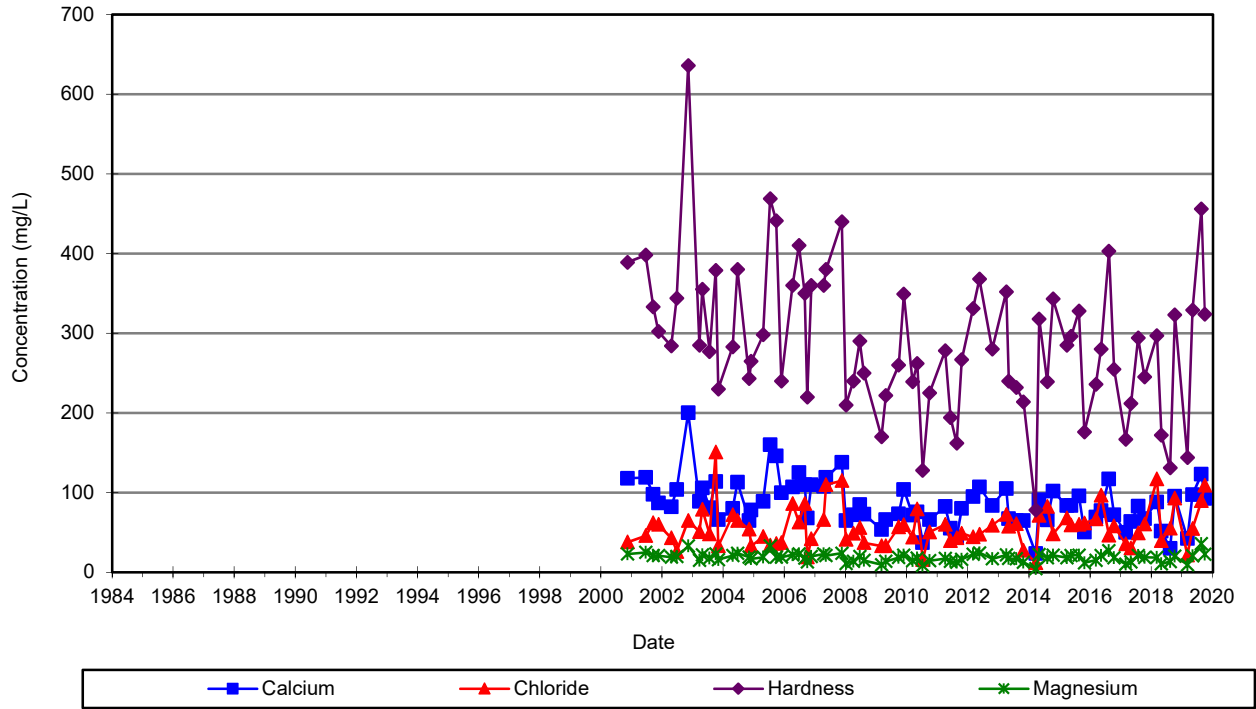
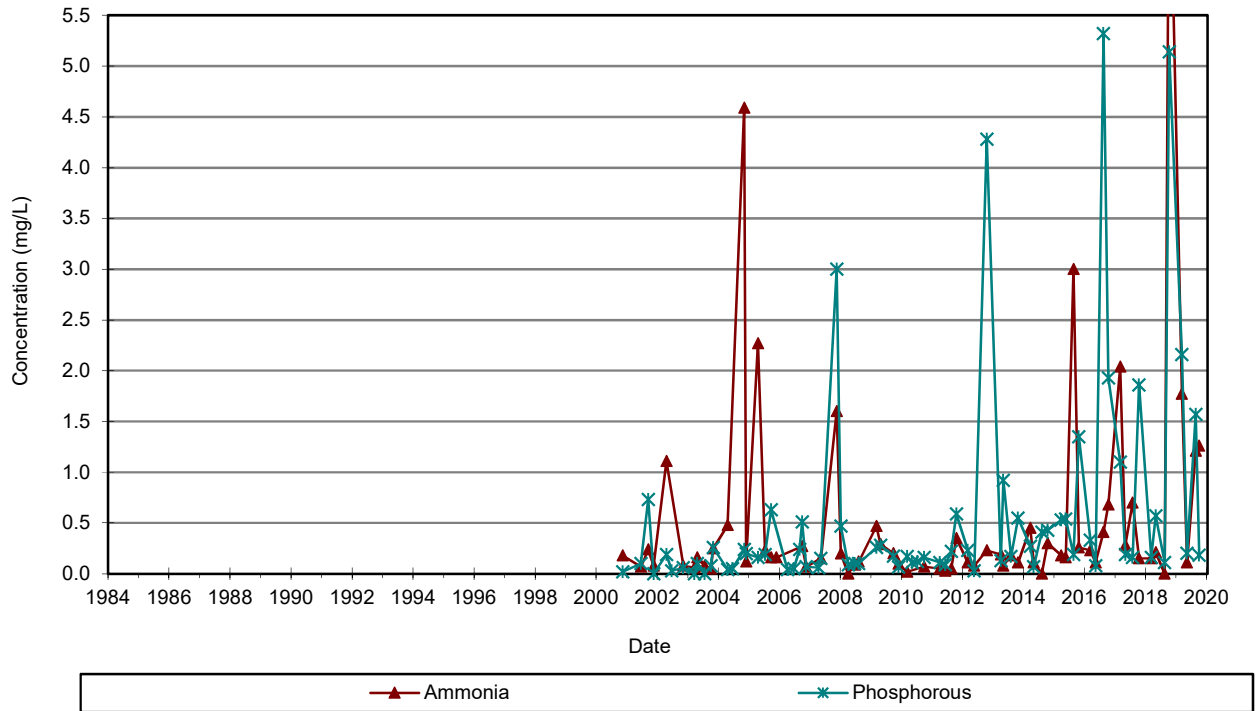
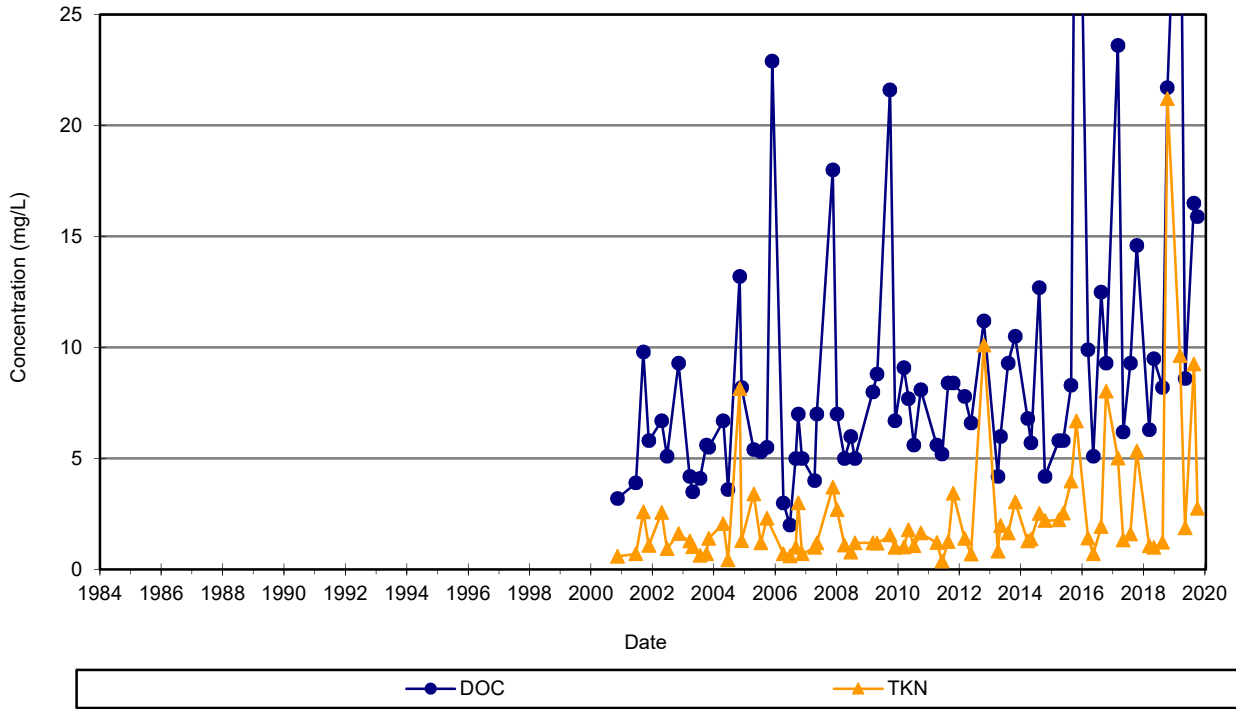


Figure E-14
Concentration Versus Time - SW9 (979)
Oxford County Waste Management Facility



Note: Ammonia - October 15/2018 = 7.52 mg/L

Figure E-15
Concentration Versus Time - SW9 (979)
Oxford County Waste Management Facility



Note: DOC - October 29/2015 = 43.6 mg/L, March 15/2019 = 36.3 mg/L

**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	pH	Cond.	Temp.	Dissolved Oxygen	pH	Conductivity	Colour	Turbidity	Hardness	TDS	Alkalinity	Chloride	Calcium	Sulphate	
		unitless	µS/cm	°C	mg/L		unitless	µS/cm	TCU	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		field	NC	NC	NC		6.5 - 8.5	NC	NC	Narrative	NC	NC	NC	NC	NC	NC
PWQO		6.5 - 8.5	NC	NC	NC	6.5 - 8.5	NC	NC	Narrative	NC	NC	NC	NC	NC	NC	
SW1	Oct-85					7.80	416						15	62		
(971)	Dec-85					7.70	343						9	54		
	Apr-86					8.00	224						3	36		
	Jun-86					9.40	157						5	16		
	Sep-86					7.80	347						6	52		
	Dec-86					7.50	387						8	60		
	Mar-87					7.60	259						12	36		
	Jun-87					7.70	321						21	38		
	Sep-87								370							
	Dec-87					7.90	443		28	205			20	66		
	Mar-88					7.60	306		14	144			14	45		
	Jun-88					8.00	484		19	247			16	76		
	Sep-88					7.90	346		1053	175			11	55		
	Dec-88					8.10	481		8	226			10	70		
	Mar-89					8.10	340		7	135			20	43		
	Jun-89					7.90	526		30	236			32	75		
	Sep-89					7.90	450		99	197			46	58		
	Dec-89					8.10	541		3	254			32	78		
	Mar-90					7.90	337			152			17	49		
	Jun-90					8.40	424		15	205			20	64		
	Sep-90					7.80	356		74	174			25	55		
	Dec-90					8.80	411		14	200			16	62		
	Mar-91					8.10	357		22	164			14	52		
	Jun-91					8.20	387		7200	165			34	48		
	Sep-91					7.70	361		122	162			34	46		
	Dec-91					8.00	432		50	200			26	61		
	Mar-92					8.20	381		7	168			20	51		
	Jun-92					7.80	386		74	169			29	44		
	Sep-92					8.00	366		107	168			20	51		
	Dec-92					7.90	463			235			12	73		
	Mar-93					8.10	318		37	138			17	43		
	Jun-93					7.40	370		281	159			29	47		
	Sep-93					7.70	407		136	177			47	54		
	Dec-93					8.30	548		22	267			28	81		
	Mar-94					7.70	294		9	109			26	35		
	Jun-94					7.70	463		81	194			33	55		
	Sep-94					8.10	344		82	158			21	43		
	Dec-94					8.00	473		8	223			31	67		
	Mar-95					8.10	544		28	215			30	63		
	Jun-95					8.40	454		28	155			54	37		
	Sep-95					8.40	556		53	176			84	42		
	Dec-95					8.30	478		28	220			23	67		
	Apr-96					8.30	463		19	208			23	63		
	May-97						400		4	218			23	65		
	Sep-97						381		19	165			27	43		
	Dec-97						457		9	214			25	62		
	May-98					7.90	438	11	16	214			18	60		
	Jun-98					8.20	310	100	170	124			27	26		
	Sep-98					8.00	534	54	152	199			54	59		
	Dec-98					7.80	700		137	252			49	73		
	Apr-99					8.20	452	14	6	201			31	57		
	Jun-99					8.20	430	37		183			32	47		
	Sep-99					7.60	429	5	148	158			40	43		
	Nov-99					8.00	729	26	31	225			26	66		
	Apr-00					8.30	502	18	6	229			33	63		
	Jun-00					8.90	296	47	35	131			16	30		
	Sep-00					8.30	304	16	229	150			9	45		
	Nov-00					8.20	390	18	13	218			12	67		

Notes: - PWQO - Provincial Water Quality Objectives (July 1994) - * Values should be interpreted with caution - Units provided
 - NC - No criteria - Blank - Indicates data not available
 - ** Calculated value using the fraction of NH₃ from $f = 1/(10^{pKa-pH+1})$; where $pKa = 0.09018 + 2729.92/T$ and T = ambient water temperature in Kelvin ($K = °C + 273.16$). Field pH is used in the equation.

**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	Fluoride	Magnesium	Ammonia	Un-ionized Ammonia **	Nitrate	Nitrite	TKN	Phenols	BOD ₅	COD	Phosphorous	DOC	Ortho-phosphate	Iron	TSS
		mg/L NC	mg/L NC	mg/L NC	mg/L 0.02	mg/L NC	mg/L NC	mg/L NC	mg/L NC	mg/L 0.001	mg/L NC	mg/L NC	mg/L 0.03	mg/L NC	mg/L NC	mg/L 0.30
SW1	Oct-85		9	0.07		0.01	0.01	1.16	0.0010			0.06	12			
(971)	Dec-85		8	0.03		1	0.01	0.57	0.0010			0.04	3.6			
	Apr-86		4	0.01		7.4	0.01	0.52	0.0010				2.5			
	Jun-86		5	0.01		0.1	0.01	0.69	0.0010			0.03	7.1			
	Sep-86		9	0.12					0.0010			0.09	9.1			
	Dec-86		10	0.1					0.0010			0.07	6.4			
	Mar-87		7	0.15					0.0010			0.09	8.1			
	Jun-87		9	0.02					0.0015			0.31	11.2			
	Sep-87			0.04								0.85				
	Dec-87		10	0.01					0.0020			0.19	13			
	Mar-88		8	0.3					0.0010			0.11	9.8			
	Jun-88		14	0.05					0.0010			0.09	12			
	Sep-88		9	0.01					0.0010			0.04	10			
	Dec-88		12	0.08					0.0015			0.08	7.2			
	Mar-89		7	0.3					0.0040			0.12	6.6			
	Jun-89		12	0.08					0.0035			0.16	11.2			
	Sep-89		13	0.01					0.0030			0.23	15.8			
	Dec-89		14	0.08					0.0040			0.05	10.6			
	Mar-90		7	0.06					0.0020			0.07	5.4			
	Jun-90		11	0.01					0.0025			0.14	10.6			
	Sep-90		9	0.18					0.0010			0.27	10.1			
	Dec-90		11	0.01					0.0010			0.01	9.1			
	Mar-91		8	0.01					0.0010			0.2	5.6			
	Jun-91		11	0.3				2.2	0.0010			0.43	13.3			
	Sep-91		11	0.01					0.0015			0.33	13			
	Dec-91		12	0.03					0.0050			0.17	10.2			
	Mar-92		10	0.04					0.0040			0.03	5			
	Jun-92		15	0.36					0.0050			0.33	16.4			
	Sep-92		10	0.05					0.0065			0.35	13.5			
	Dec-92		13						0.0030				6.3			
	Mar-93		7	0.33					0.0105			0.07	5.7			
	Jun-93		10	0.06					0.0050			0.93	14.5			
	Sep-93		11	0.04					0.0040			0.73	20			
	Dec-93		16	0.52					0.0061			0.14	12.8			
	Mar-94		6	1.11					0.0086			0.17	9			
	Jun-94		14	0.03					0.0027			0.41	16.2			
	Sep-94		12	0.04				4.5	0.0084			0.45	14.8			
	Dec-94		14	0.41				1.71	0.0084			0.11	12.2			
	Mar-95		14	0.15		0.1	0.01	1.92	0.0085			0.16	7.7			
	Jun-95		15	0.1		0.1	0.02	4.84	0.0066			0.52	21.5			
	Sep-95		17	0.13		0.1	0.02	5.74	0.0051			0.44	25.5			
	Dec-95		13	0.07		0.2	0.02	1.26	0.0063			0.08	7.7			
	Apr-96		12	0.13		0.1	0.02	1.28	0.0046			0.12	9			
	May-97		14	0.12		0.01	0.01	1.48	0.0010			0.08	6.1			
	Sep-97		14	0.08		0.05	0.01		0.0010			0.27	14.9			
	Dec-97		14	0.22		0.15	0.010		0.0010			0.06	12.4			
	May-98	0.2	16	0.06		<0.1	0.020	2.03	0.0020			0.22	10.6			
	Jun-98	0.2	14	<0.05		<0.1	0.030	13.4	0.0020			0.55	17.3			
	Sep-98	0.5	13	0.08		<0.1	<0.02	21.6	0.0010			1.72	31.2			
	Dec-98		17	0.05		<0.1	<0.02	8.14	<0.001			0.58	26.5			
	Apr-99	0.2	14	<0.05		<0.1	<0.02	1.17	<0.001			0.10	10.2			
	Jun-99	0.3	16	<0.05		<0.1	<0.02		<0.007			0.12	18			
	Sep-99	0.1	12	0.12		0.47	<0.02	8.88	<0.001			0.77	27.3			
	Nov-99	0.2	15	0.05		0.91	<0.02	3	<0.001			0.20	13.5			
	Apr-00	0.2	17	<0.05		0.21	<0.02	1.09	0.0010			0.08	9.9			
	Jun-00	0.2	14	<0.05		0.11	<0.02	1.26	0.0020			0.04	12.6			
	Sep-00	0.3	9	<0.05		0.16	<0.02	16	0.0010			0.23	7.9			
	Nov-00	0.2	13	<0.05		<0.1	<0.02	1.09	<0.001			0.06	8.3			

Notes: - PWQO - Provincial Water Quality Objectives (July 1994) * Values should be interpreted with caution - Units provided
- NC - No criteria - Blank - Indicates data not available
- ** Calculated value using the fraction of NH₃ from f = 1/(10^{pKa-pH}+1); where pKa = 0.09018 + 2729.92/T and T = ambient water temperature in Kelvin (K = °C + 273.16). Field pH is used in the equation.



**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	pH	Cond.	Temp.	Dissolved Oxygen	pH	Conductivity	Colour	Turbidity	Hardness	TDS	Alkalinity	Chloride	Calcium	Sulphate
		unitless	µS/cm	°C	mg/L		unitless	µS/cm	TCU	NTU	mg/L	mg/L	mg/L	mg/L	mg/L
	PWQO	6.5 - 8.5	NC	field NC	NC	6.5 - 8.5	NC	NC	Narrative	NC	NC	NC	NC	NC	NC
SW1	Apr-01					7.90	377	<5	11	235			27	71	
cont.	Jun-01					8.60	354	20	25	140			32	34	
	Sep-01					8.00	494	34	463	179			56	49	
	Nov-01					8.30	496	22	12	257			29	75	
	Apr-02					8.30	474	7	18	239			15	66	
	Jun-02					8.20	370	42	45	146			19	33	
	Nov-02					8.20	414	25	192	205			30	59	
	Mar-03					7.80	185	<5	4	89			6	27	
	Apr-03					9.10	309	33	22	131			22	28	
	Jul-03					8.30	354	28	39	161			22	39	
	Oct-03					8.20	403	24	64	178			32	46	
	Nov-03					8.10	428	36	49	218			17	62	
	Apr-04					8.20	533	22	6	229			26	60	
	Jun-04					8.00	304	27	9	137			13	31	
	Nov-04					8.20	382	29	14	159			21	40	
	Dec-04					7.80	371	30	35	187			20	52	
	Apr-05					8.18	423	23	22	226			15	63	
	Jul-05						324		98	126			26	28	
	Sep-05						478		306	246			69	73	
	Nov-05					8.10	484	27		210			51	68	
	Apr-06					8.10	757	72	17	270			115	79	
	Jun-06					8.20	527	50	32	200			99	51	
	Sep-06					8.50	481	44	36	210			88	60	
	Oct-06					7.70	411	32	49	260			29	80	
	Nov-06					8.00	533	28	8	260			25	77	
	Apr-07					8.00	811	39	11	260			124	69	
	May-07					8.10	658	58	20	210			118	53	
	Nov-07					8.10	821	35	168	300			167	90	
	Jan-08	7.46	606	3.6	15.77	7.80	612	41	48	250			83	76	
	Apr-08	8.34	824	11.7	12.40	7.90	857	13	7	260			148	80	
	Jun-08	8.73	627	23.4	8.03	8.20	648	22	48	170			128	41	
	Aug-08	8.82	469	19.5	9.35	8.30	479	22	18	190			54	54	
	Mar-09	7.99	295	2.0	9.58	7.96	313	16	16	100			44	30.5	
	May-09	7.7	491	14.7	6.77	7.96	560	22	39	207			55.3	61.1	
	Oct-09	8.39	443	12.2	5.68	8.22	512	15	13	196			58	53	
	Dec-09	9.18	550	4.4	7.20	8.25	590	13	14	257			51.1	74.8	
	Mar-10	7.44	620	3.0	11.97	8.03	556				332	169	57.9		32.8
	May-10	8.98	440	12.6		8.43	352				260	413	61.7		36.7
	Jul-10	8.41	260	25.9	14.85	8.55	315				216	99	21		33.5
	Oct-10	8.08	490	11.7	12.92	8.27	459				326	140	42.7		50.2
	Apr-11	7.53	657	13.8	11.56	8.17	700				360	158	96.7		57.8
	Jun-11	7.19	379	18.9	7.39	8.14	414				256	128	46.3		31.6
	Aug-11	6.51	591	25.7	3.57	8.47	630				392	172	71		49.7
	Oct-11	7.41	729	14.3	10.06	8.15	583				416	179	63		84.9
	Mar-12	6.54	696	6.8	10.53	8.13	831				496	242	97.6		69
	May-12	8.65	840	27.0	10.81	8.04	781				460	160	140		64.5
	Aug-12	7.75	617	21.0	8.72	7.81	731				492	83	158		33
	Oct-12	7.19	888	11.9	7.90	8.29	686				496	177	116		54.2
	Apr-13	8.4	863	9.2	11.31	8.08	820				440	201	110		42
	May-13	8.56	602	21.2	14.10	8.06	586				338	118	73.6		57.8
	Aug-13	7.97	608	21.6	6.75	7.40	608	24	76.2	171	366	149	68.1	41.7	47.8
	Oct-13	8.43	640	10.0	7.13	8.16	601	25	31.3	70.4	374	188	48.3		58
	Mar-14	8.23	865	1.1	7.91	8.11	740	35	81.7	209	358	261	64.7		28.4
	May-14	8.14	722	11.9	9.80	8.15	705	23	12.9	218	448	162	76.3		70.3
	Aug-14	8.33	511	21.5	6.52	8.17	461	24	109	153	298	113	57.7		37.8
	Oct-14	7.22	660	11.2	9.75	8.08	685	29	20.5	246	368	186	58.1		53.7
	Apr-15	7.50	543	6.3	10.3	8.15	711	21	13.8	201	344	200	93.9		26.5
	May-15	7.15	620	17.5	9.5	8.28	805	24	38.3	212	448	196	113		40.3

Notes: - PWQO - Provincial Water Quality Objectives (July 1994) - * Values should be interpreted with caution - Units provided
 - NC - No criteria - Blank - Indicates data not available
 - ** Calculated value using the fraction of NH₃ from f = 1/(10^{pKa-pH}+1); where pKa = 0.09018 + 2729.92/T and T = ambient water temperature in Kelvin (K = °C + 273.16). Field pH is used in the equation.

**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	Fluoride mg/L NC	Magnesium mg/L NC	Ammonia mg/L NC	Un-ionized Ammonia ** mg/L 0.02	Nitrate mg/L NC	Nitrite mg/L NC	TKN mg/L NC	Phenols mg/L 0.001	BOD ₅ mg/L NC	COD mg/L NC	Phosphorous mg/L 0.03	DOC mg/L NC	Ortho-phosphate mg/L NC	Iron mg/L 0.30	TSS mg/L NC
SW1	Apr-01	3.2	14	0.05		<0.1	<0.02	1.25	0.0050			0.13	5.4			
cont.	Jun-01	0.2	14	<0.05		<0.1	<0.02	2.15	<0.001			0.11	12.2			
	Sep-01	0.43	14	0.1		0.51	<0.02	9.94	0.0015			1.46	27.6			
	Nov-01	0.22	17	<0.05		<0.1	<0.02	1.55	<0.001			0.13	11.4			
	Apr-02	0.21	18	<0.05		<0.1	<0.02	0.88	<0.002			0.06	8.4			
	Jun-02	<0.1	15	0.06		<0.1	<0.02	3.64	<0.002			0.21	14.7			
	Nov-02	0.25	14	<0.05		<0.1	<0.02	3.36	<0.002			0.01	15.8			
	Mar-03	<0.1	5	0.12		0.39	<0.02	0.93	<0.002			<0.08	3.3			
	Apr-03	0.14	15	<0.05		<0.1	<0.02	1.5	<0.002			0.08	9.1			
	Jul-03	0.2	16	<0.05		<0.1	<0.02	2.63	0.0020			0.1	14.2			
	Oct-03	0.22	15	<0.05		<0.1	<0.02	3.41	<0.002			0.34	15.7			
	Nov-03	0.2	15	<0.05		0.1	<0.02	1.79	<0.002			0.19	9.8			
	Apr-04	0.16	20	<0.05		<0.1	<0.02	1.45	<0.002			0.02	9.4	<0.002		
	Jun-04	0.19	15	0.06		<0.1	<0.02	2.13	<0.002			0.09	9.7	0.002		
	Nov-04	0.26	14	0.15		<0.1	<0.02	2.29	0.0030			0.15	35.5	<0.002		
	Dec-04	0.4	14	ND		0.4	ND	2	0.0020			0.17	17.8	ND		
	Apr-05	0.2	16	<0.05		0.1	<0.1	0.9	<0.001			0.07	7.3	0.017		
	Jul-05		15	0.07		<0.2	<0.3	5.4	<0.001			0.41	18.9	<0.005		
	Sep-05		16	<0.05		<2	<3	12.4	0.0010			0.94	20.7	0.027		
	Nov-05	0.2	15	0.39		0.4	<0.01						12.6			
	Apr-06	0.1	17	0.39		0.1	<0.1	2.2	<0.001			0.06	6	<0.3		
	Jun-06	0.2	17	<0.05		<0.1	<0.1	2.1	<0.001			0.13	8	<0.3		
	Sep-06	0.1	15	<0.05		<0.1	<0.1	1.5	<0.001			0.54	15	<0.3		
	Oct-06	0.2	14	0.11		0.2	<0.1	3.5	<0.001			0.27	7	<0.3		
	Nov-06	0.2	17	0.53		0.4	<0.1	1.6	<0.001			0.06	10	<0.3		
	Apr-07	0.2	22	0.28		0.5	<0.1	1.9	<0.001			0.06	9	<0.003		
	May-07	0.2	19	<0.05		<0.1	<0.1	5.9	<0.001			0.23	14	<0.003		
	Nov-07	0.2	20	2.3		0.6	<0.1	7.7	<0.001			0.7	30	0.004		
	Jan-08	0.2	14	0.56	0.002	0.6	<0.1	3.2	<0.001			0.24	10			
	Apr-08	0.1	16	0.08	0.004	0.3	<0.1	1.1	<0.001			0.05	8			
	Jun-08	0.4	17	0.06	0.013	<0.1	<0.1	1.1	<0.001			0.09	12			
	Aug-08	0.2	13	<0.05	<0.010	<0.1	<0.1	1.5	<0.001			0.11	8			
	Mar-09	<0.1	5.1	0.26	0.002	0.6	<0.1	0.81	<0.001			0.083	4	0.035		
	May-09	0.19	13.3	0.064	0.001	<0.10	<0.10	1.16	<0.0010			0.0929	9.2	<0.0030		
	Oct-09	0.21	15.5	0.068	0.003	0.21	<0.10	1.48	<0.0010			0.0916	25.2	0.0033		
	Dec-09	0.18	17.1	<0.050	<0.008	0.13	<0.10	1.16	<0.0010			0.0665	9	<0.0030		
	Mar-10			0.17	<0.001	0.29	<0.05	0.93	<0.001	<5	32	0.1			0.752	32
	May-10			<0.02	<0.004	<0.05	<0.05	0.9	<0.001	<5	25	0.13			0.69	20
	Jul-10			<0.02	<0.003	0.07	<0.05	5.33	<0.001	18	110	0.3			0.404	81
	Oct-10			<0.02	<0.001	<0.05	<0.05	2.93	<0.001	<5	30	0.26			0.86	49
	Apr-11			0.07	0.001	0.65	<0.05	1.73	<0.001	<5	26	0.07			0.45	32
	Jun-11			0.97	0.005	<0.05	<0.05	2.01	<0.001	<5	26	0.09			0.74	24
	Aug-11			0.04	<0.001	<0.05	<0.05	2.82	<0.001	10	70	0.23			0.99	44
	Oct-11			0.29	0.002	0.19	<0.05	1.65	<0.001	<5	32	0.06			0.48	33
	Mar-12			1.81	0.001	0.48	<0.05	4.56	<0.001	10	62	0.09			0.47	21
	May-12			<0.02	<0.005	<0.05	<0.05	1.92	<0.001	6	52	0.07			1.27	44
	Aug-12			0.03	0.001	<0.05	<0.05	8.9	<0.001	21	431	0.96			1.76	228
	Oct-12			<0.02	<0.001	<0.05	<0.05	2.37	<0.001	6	80	0.16			1.63	68
	Apr-13			1.11	0.047	0.46	<0.05	2.14	<0.001	<5	31	0.07			0.25	25
	May-13			<0.02	<0.001	<0.10	<0.10	2.16	0.001	19	68	0.19			0.74	60
	Aug-13	<0.05	16.3	<0.02	<0.001	<0.05	<0.05	3.27	0.001	9	74	0.24	14.6		1.54	94
	Oct-13	<0.10		0.35	0.017	0.23	<0.10	1.88	<0.001	<5	63	0.10	9.9		0.65	32
	Mar-14	0.16		17.0	0.257	0.82	<0.10	17.3	0.002	9	58	0.20	17.6		0.95	58
	May-14	<0.10		0.08	0.002	0.34	<0.10	1.5	<0.001	5	37	0.09	9.5		0.29	17
	Aug-14	0.11		0.02	0.002	<0.10	<0.10	4.69	<0.001	10	122	0.34	16.1		1.11	110
	Oct-14	<0.10		0.34	0.001	<0.10	<0.10	2.64	<0.001	14	37	0.11	8.9		0.31	25
	Apr-15	<0.25		4.85	0.021	<0.25	<0.25	6.35	<0.001	12	38	0.09	12.8		0.47	15
	May-15	<0.25		2.36	0.011	<0.25	<0.25	4.37	<0.001	6	57	0.15	14.3		0.51	36

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 - ** Calculated value using the fraction of NH₃ from f = 1/(10^{pkA}-pH+1); where pKa = 0.09018 + 2729.92/T and T = ambient water temperature in Kelvin (K = °C + 273.16). Field pH is used in the equation.

**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	pH	Cond.	Temp.	Dissolved Oxygen	pH	Conductivity	Colour	Turbidity	Hardness	TDS	Alkalinity	Chloride	Calcium	Sulphate
		unitless	µS/cm	°C	mg/L		unitless	µS/cm	TCU	NTU	mg/L	mg/L	mg/L	mg/L	mg/L
PWQO		6.5 - 8.5	NC	NC	NC	6.5 - 8.5	NC	NC	Narrative	NC	NC	NC	NC	NC	NC
SW1	Aug-15	9.05	470	18.6	7.40	8.22	498	32	173	133	318	117	70.7		16.3
cont.	Oct-15	8.12	590	9.9	7.46	7.96	517	31	286	177	366	129	60.9		33.9
	Mar-16	7.31	635	7.5	8.7	8.22	805	21	27.3	300	446	248	75.3		101
	May-16	7.8	403	9.5	9.3	7.96	492	8	26.0	153	262	123	50.5		70.1
	Aug-16	7.99	403	9.5	8.9	8.49	493	32	108	122	274	125	62.7		16.3
	Oct-16	8.82	520	18.2	7.9	8.01	545	30	114	135	310	117	66.1		44.1
	Mar-17	7.89	689	5.52	10.02	8.08	690	25	59.1	225	362	179	60.4		62.9
	May-17	8.27	577	8.53	7.98	8.33	626	34	36.3	227	340	220	25.2		52.2
	Aug-17	8.30	339	22.4	6.23	7.75	401	37	165	109	266	137	47.0		13.6
	Oct-17	7.76	392	10.95	7.47	8.08	485	25	207	159	310	135	51.4		51.1
	Mar-18	7.52	1020	3.06	8.59	8.02	923	18	8.3	272	550	203	190		60.7
	May-18	7.89	675	15.41	6.28	7.86	670	29	46.1	223	394	163	93.3		70.2
	Aug-18	7.48	458	23.30	7.25	8.16	500	16	41.3	134	284	119	70.0		28.6
	Oct-18	7.40	527	10.96	7.93	7.26	595	10	36.1	181	356	100	74.6		56.5
	Mar-19	7.13	255	1.06	10.35	7.59	270	35.9	33.9	81.8	169	81	28.2	25.7	12.3
	May-19	8.35	546	9.81	14.06	8.46	662	38.5	24.5	278	395	229	61.6	79.9	46.8
	Aug-19	7.07	436	21.3	5.76	8.04	558	21.3	24.8	188	340	158	62.5	49.1	35.8
	Oct-19	8.01	543	13.32	9.68	8.27	621	19.4	11.2	227	344	182	64.2	61.9	50.8
SW4	Sep-86					7.40	458				225		5		73
(974)	Dec-86					6.60	408				202		7		61
	Mar-87					7.00	287				142		5		42
	Dec-87					7.80			17		126		3		37
	Mar-88					6.40	550		7		282		6		87
	Jun-88					7.40	540		12		302		3		44
	Sep-88					7.30	291		36		153		1		48
	Dec-88					6.70	836		161		462		9		145
	Mar-89					6.70	660		5		360		9		115
	Mar-89					7.00	140				56		4		17
	Jun-89					7.40	345		8		175		1		53
	Dec-89					6.50	580		198		304		9		94
	Mar-90					6.80	523				280		4		88
	Jun-90					8.10	316		9		171		1		52
	Sep-90					7.30	309		17		159		3		52
	Dec-90					7.60	442		13		226		6		70
	Mar-91								54						
	Jun-91					7.40	378		117		194		1		63
	Dec-91					7.00	364				179		7		54
	Mar-92					7.10	494		22		252		4		79
	Sep-92					7.40	363		75		187		3		63
	Dec-92					7.00	518				308		5		97
	Mar-93					7.50	270		17		116		7		38
	Jun-93					7.50	408		62		215		2		66
	Dec-93					8.10	376		6		196		4		60
	Mar-94					6.80	286		61		145		4		46
	Jun-94					7.70	499		82		274		2		87
	Mar-95					7.50	392		13		215		45		68
	Dec-95					7.20	394		3		193		5		59
	Apr-96					7.50	356		2		186		3		57
	May-97						313		2		195		3		60
	Dec-97						423		5		228		10		72
	May-98					7.60	465	84	46		277		4		87
	Jun-98														
	Sep-98														
	Dec-98														
	Apr-99					8.00	724	43	4		404		7		128
	Jun-99					7.80	628	215	1		394		8		124
	Nov-99					7.70	945	293	3		398		13		128
	Apr-00					7.80	725	53	9		408		6		128

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**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	Fluoride mg/L	Magnesium mg/L	Ammonia mg/L	Un-ionized Ammonia ** mg/L	Nitrate mg/L	Nitrite mg/L	TKN mg/L	Phenols mg/L	BOD ₅ mg/L	COD mg/L	Phosphorous mg/L	DOC mg/L	Ortho-phosphate mg/L	Iron mg/L	TSS mg/L
		NC	NC	NC	0.02	NC	NC	NC	0.001	NC	NC	0.03	NC	NC	0.30	NC
SW1	Aug-15	<0.25		0.05	0.014	<0.25	<0.25	10.4	<0.001	31	273	0.85	28.3		1.94	255
cont.	Oct-15	<0.25		0.11	0.003	0.46	<0.25	8.82	<0.001	16	238	0.71	30.1		3.76	275
	Mar-16	<0.25		3.35	0.010	0.74	<0.25	4.53	0.005	7	39	0.10	10.9		0.39	31
	May-16	<0.05		<0.02	<0.001	<0.05	<0.05	1.67	<0.001	9	57	0.10	12.6		0.35	25
	Aug-16	<0.25		<0.02	<0.001	<0.25	<0.25	5.41	<0.001	15	143	0.38	22.6		2.08	85
	Oct-16	0.20		0.04	0.007	<0.05	<0.05	5.16	<0.001	14	142	0.49	20.1		1.52	139
	Mar-17	<0.25		1.80	0.018	0.62	<0.25	3.06	<0.001	<5	36	0.10	10.9		0.548	42
	May-17	<0.10		1.04	0.031	0.75	<0.10	2.09	<0.001	<5	31	0.07	10.1		0.38	30
	Aug-17	0.35		0.52	0.045	<0.05	<0.05	6.16	<0.001	27	176	0.35	23.8		2.26	123
	Oct-17	<0.05		0.04	<0.001	0.06	<0.05	6.43	<0.001	23	195	0.72	22.8		10.1	257
	Mar-18	<0.25		<0.02	<0.001	<0.25	<0.25	0.98	<0.001	<5	29	0.06	9.3		0.19	<10
	May-18	<0.10		0.03	0.001	0.13	<0.10	1.49	0.002	5	27	0.14	11.1		0.64	40
	Aug-18	<0.10		<0.02	<0.001	<0.10	<0.10	3.32	0.002	12	74	0.28	13.9		0.84	43
	Oct-18	<0.10		0.41	0.002	<0.10	0.490	3.35	0.001	10	49	0.17	12.2		0.554	39
	Mar-19	0.038	4.28	0.67	0.001	0.277	0.017	2.32	0.0012	6.1	45	0.578	10.9		1.21	23.9
	May-19	0.108	19.1	0.014	0.001	<0.020	<0.010	1.78	0.0028	6.1	41	0.103	12.0		0.916	25.0
	Aug-19	0.157	15.8	0.018	<0.001	<0.020	<0.010	2.69	<0.0010	5.9	64	0.129	14.4		0.940	31.0
	Oct-19	0.154	17.7	0.015	<0.001	<0.020	<0.010	2.22	0.0026	2.9	56	0.152	14.4		0.711	24.6
SW4	Sep-86		10	0.07					0.0015			0.23	15.3			
(974)	Dec-86		12	0.32					0.0030			0.4	18			
	Mar-87		9	0.15					0.0015			0.1	10.7			
	Dec-87		8	0.03					0.0010			0.12	14.1			
	Mar-88		16	1					0.0010			0.19	24.5			
	Jun-88		16	0.11					0.0010			0.07	23			
	Sep-88		8	0.03					0.0010			0.27	20			
	Dec-88		24	0.01					0.0130			2.4	20			
	Mar-89		18	0.12					0.0080			0.05	30			
	Mar-89		3						0.0085				11.8			
	Jun-89		10	0.12					0.0060			0.31	20			
	Dec-89		17	0.05					0.0555			1.12	37			
	Mar-90		14	1.8					0.0010			1.2	11.8			
	Jun-90		10	0.22					0.0025			0.31	23			
	Sep-90		7	0.02					0.0010			0.11	11.7			
	Dec-90		13						0.0015			0.06	14.2			
	Mar-91			0.26								0.44				
	Jun-91		9	0.02					0.0010			0.27	7.5			
	Dec-91		10	0.05					0.0200			0.4	22			
	Mar-92		13	0.09					0.0075			0.21	9.6			
	Sep-92		7	0.09					0.0075			0.35	11.2			
	Dec-92		16						0.0180				15.5			
	Mar-93		5	1.1					0.0300			0.23	16.2			
	Jun-93		12	0.09					0.0075			0.24	16			
	Dec-93		11	0.12					0.0178			0.18	19			
	Mar-94		7	1.08				2.8	0.0137			0.29	12.5			
	Jun-94		14	0.1					0.0059			0.26	22			
	Mar-95		11	0.05		0.1	0.01	1.23	0.0058			0.18	10.2			
	Dec-95		11	0.07		0.2	0.01	0.96	0.0128			0.16	15.2			
	Apr-96		11	0.05		0.1	0.02	0.8	0.0063			0.04	11.8			
	May-97		11	0.83		0.01	0.01	1.02	0.0010			0.11	12.1			
	Dec-97		12	0.06		0.09	0.02		0.0070			0.51	24.5			
	May-98	0.2	15	0.08		<0.1	<0.02	0.58	<0.001			0.22	17.3			
	Jun-98	Dry														
	Sep-98	Dry														
	Dec-98	Dry														
	Apr-99	0.1	20	0.05		0.11	<0.02	0.84	<0.001			<0.01	10			
	Jun-99	0.2	21	0.05		<0.1	<0.02	2.34	<0.001			1.23	38.9			
	Nov-99	0.2	19	0.05		0.47	<0.02	1.65	0.0010			0.32	24.2			
	Apr-00	0.2	21	0.05		<0.1	<0.02	0.77	0.0020			0.06	12.9			

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Surface Water Station	Date	pH	Cond.	Temp.	Dissolved Oxygen	pH	Conductivity	Colour	Turbidity	Hardness	TDS	Alkalinity	Chloride	Calcium	Sulphate	
		unitless	µS/cm	°C	mg/L	unitless	µS/cm	TCU	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				field		6.5 - 8.5	NC	NC	Narrative	NC	NC	NC	NC	NC	NC	NC
PWQO		6.5 - 8.5	NC	NC	NC	6.5 - 8.5	NC	NC	Narrative	NC	NC	NC	NC	NC	NC	
SW4	Jun-00					7.70	597	111	1	368			3	114		
cont.	Sep-00					7.90	636	43	13	446			4	143		
	Nov-00					7.50	675	166	42	428			10	134		
	Apr-01					7.60	535	<5	13	414			5	131		
	Jun-01					7.60	509	108	40	285			6	86		
	Nov-01					7.90	929	134	9	567			12	183		
	Apr-02					8.20	578	51	9	336			4	106		
	Jun-02					8.20	802	116	17	244			119	71		
	Nov-02															
	Mar-03					8.10	431	47	5	250			5	81		
	Apr-03					8.20	588	159	5	309			8	99		
	Jul-03					8.00	437	102	5	252			4	80		
	Nov-03					7.60	647	1100	15	359			9	112		
	Apr-04					8.20	521	77	3	270			6	84		
	Jun-04					8.00	496	87	2	273			4	86		
	Nov-04															
	Dec-04					7.40	522	200	7	310			6	98		
	Apr-05					8.14	488	36	6	286			3.3	90		
	Jul-05															
	Sep-05															
	Nov-05					7.80	599	136		330			6	99		
	Apr-06					7.80	511	100	3	310			4	99		
	Jun-06					7.80	422	150	6	290			3	95		
	Sep-06					7.70	461	91	2	310			7	107		
	Oct-06					7.50	467	70	13	330			3	109		
	Nov-06					7.60	747	60	15	450			5	146		
	Apr-07					7.90	470	46	2	260			4	77		
	May-07					7.60	419	150	11	270			5	84		
	Jan-08	6.85	340	3.7	17.26	7.20	322	115	2	180			5	56		
	Apr-08	7.51	359	9.2	14.86	8.00	302	27	1	210			2	68		
	Jun-08	7.59	516	16.6	11.13	7.90	531	43	4	290			2	91		
	Aug-08	7.46	587	15.7	11.60	7.40	418	46	3	240			8	78		
	Mar-09	6.66	349	2.2	13.56	7.96	277	26	24	140			3	45.1		
	May-09	7.38	312	14	6.00	7.88	349	54	21	176			2.9	56.6		
	Oct-09	7.99	314	8.6	3.43	8.02	350	51	9	205			2.9	65.8		
	Dec-09	8.34	674	4.7	4.27	7.39	779	39	69	464			3.9	149		
	Mar-10	6.97	410	1.5	7.40	8.02	417	33	11	228			3.54	72.5		
	May-10	7.48	450	8.5		8.06	425	50	1	251			3.4	77.3		
	Jul-10	6.43	240	21.8	1.20	7.90	299	40	7	145			1.49	47.3		
	Oct-10	7.35	340	7.9	2.71	8.03	261	68	2	149			1.43	48.5		
	Apr-11	7.22	300	13.1	4.86	8.05	319	31	11	177			2.19	58.5		
	Jun-11	6.73	315	14.9	2.64	7.88	348	43	7	207			1.51	65.3		
	Aug-11	Dry														
	Oct-11	6.98	547	9.8	3.84	7.91	454	386	31.5	279			5.35	90.5		
	Mar-12	6.02	269	5	8.24	7.69	331	34	2.3	170			3.03	53.8		
	Apr-13	8.34	292	7.3	6.09	7.59	251	53	7.4	128			2.12	42.6		
	May-13	7.51	530	18.9	3.39	8.17	495	65	13.4	248			4.87	77.3		
	Aug-13	7.24	412	18.9	3.89	7.55	401	63	19.3	206			1.37	67.1		
	Oct-13	8.26	485	9.8	4.61	8.15	449	192	13.2	251			2.88	79.2		
	Mar-14	7.34	644	0.6	8.23	7.86	536	52	24.4	295			5.71	93.9		
	May-14	7.91	401	9.5	6.54	8.14	434	55	4.1	194			2.68	59.6		
	Aug-14	8.41	341	18.6	2.62	8.14	309	64	6.7	161			1.91	51.7		
	Oct-14	6.40	400	9.8	3.53	7.90	412	177	22.4	215			3.04	68.9		
	Apr-15	7.02	400	5.2	9.3	7.48	358	23	13.7	188			3.84	59.1		
	May-15	Dry														
	Aug-15	Dry														
	Oct-15	7.70	510	7.9	5.74	7.75	455	2270	14.2	274			4.47	81.4		
	Mar-16	6.60	302	7.3	8.5	7.93	360	43	8.7	183			4.47	58.3		
	May-16	7.29	423	8.8	8.7	8.15	487	28	87.1	239			9.43	71.6		

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 · NC - No criteria · Blank - Indicates data not available
 · ** Calculated value using the fraction of NH₃ from $f = 1/(10^{pKa-pH+1})$; where $pKa = 0.09018 + 2729.92/T$ and $T =$ ambient water temperature in Kelvin ($K = °C + 273.16$). Field pH is used in the equation.



**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	Fluoride mg/L	Magnesium mg/L	Ammonia mg/L	Un-ionized Ammonia ** mg/L	Nitrate mg/L	Nitrite mg/L	TKN mg/L	Phenols mg/L	BOD ₅ mg/L	COD mg/L	Phosphorous mg/L	DOC mg/L	Ortho-phosphate mg/L	Iron mg/L	TSS mg/L
		NC	NC	NC	0.02	NC	NC	NC	0.001	NC	NC	0.03	NC	NC	0.30	NC
SW4	Jun-00	0.2	20	0.07		<0.1	0.02	1.2	0.0020			0.11	18.2			
cont.	Sep-00	0.2	22	0.13		<0.1	<0.02	1.02	<0.001			0.07	15.6			
	Nov-00	0.2	23	0.09		<0.1	<0.02	1.42	0.0750			1.00	31.5			
	Apr-01	<0.1	21	0.06		<0.1	<0.02	0.59	0.0060			0.09	7.1			
	Jun-01	0.2	17	0.14		<0.1	<0.02	4.6	<0.001			0.92	23			
	Nov-01	0.15	27	0.05		<0.1	<0.02	1.69	0.0012			0.31	22.4			
	Apr-02	0.23	17	0.05		<0.1	<0.02	1.41	<0.002			0.09	14.3			
	Jun-02	<0.1	16	0.06		<0.1	0.040	1.65	<0.002			0.2	20.7			
	Nov-02	Dry														
	Mar-03	0.11	12	<0.05		0.47	0.020	0.52	<0.002			0.02	6.4			
	Apr-03	0.15	15	<0.05		<0.1	<0.02	1.75	<0.002			0.10	23.9			
	Jul-03	0.13	13	<0.05		<0.1	<0.02	2.08	0.0020			0.27	24.1			
	Nov-03	0.12	19	<0.05		<0.1	0.02	1.43	0.0040			0.20	45.9			
	Apr-04	0.13	15	<0.05		<0.1	0.08	0.77	<0.002			<0.02	14.1	0.014		
	Jun-04	0.19	14	<0.05		<0.1	<0.02	2.08	<0.002			0.18	19.3	0.045		
	Nov-04	no data														
	Dec-04	0.4	16	0.09		ND	ND	1.5	0.0010			0.27	21.4	ND		
	Apr-05	0.1	14.9	<0.05		0.1	<0.1	0.5	0.0010			0.04	6.4	0.013		
	Jul-05	no data														
	Sep-05	no data														
	Nov-05	0.1	15	0.14		0.5	0.130						16.6			
	Apr-06	<0.1	15	<0.05		<0.1	<0.1	1.5	<0.001			0.08	12	<0.3		
	Jun-06	0.1	14	0.38		<0.1	<0.1	1.7	<0.001			0.76	22	<0.3		
	Sep-06	<0.1	10	<0.05		<0.1	<0.1	1.8	<0.001			0.55	19	<0.3		
	Oct-06	0.1	14	<0.05		<0.1	<0.1	0.8	<0.001			0.16	10	<0.3		
	Nov-06	0.1	21	<0.05		<0.1	<0.1	1	<0.001			0.1	14	<0.3		
	Apr-07	0.1	15	<0.05		<0.1	<0.1	1.1	<0.001			0.03	11	<0.003		
	May-07	0.1	15	0.19		<0.1	<0.1	1.9	<0.001			0.29	19	0.045		
	Jan-08	0.1	9	0.09	<0.001	0.4	<0.1	1.2	<0.001			0.08	12			
	Apr-08	<0.1	10	0.06	<0.001	<0.1	<0.1	0.7	0.0010			0.12	6			
	Jun-08	0.2	16	0.21	0.002	<0.1	<0.1	0.93	<0.001			0.15	12			
	Aug-08	0.1	11	0.13	0.001	<0.1	<0.1	1.2	0.0010			0.08	8			
	Mar-09	0.1	7.4	0.14	<0.001	0.7	<0.1	0.73	<0.001			0.063	5	0.008		
	May-09	0.1	8.44	0.091	0.001	<0.10	<0.10	1.01	<0.0010			0.0755	10.6	0.0099		
	Oct-09	<0.10	9.82	0.196	0.003	<0.10	<0.10	1.57	<0.0010			0.0754	26.6	0.0065		
	Dec-09	<0.10	22.1	0.058	0.002	<0.10	<0.10	2.79	0.033			0.677	21.9	0.0051		
	Mar-10	0.05	11.5	0.39	<0.001	0.17	<0.05	1.09	<0.001			0.13	11	<0.10		
	May-10	0.09	14.2	<0.02	<0.001	<0.05	<0.05	1.15	<0.001			0.12	16.2	<0.10		
	Jul-10	<0.05	6.55	0.11	<0.001	<0.05	<0.05	2.68	<0.001			0.29	9	<0.10		
	Oct-10	<0.05	6.77	<0.02	<0.001	<0.05	<0.05	2.45	0.0010			0.14	11.9	<0.10		
	Apr-11	<0.05	7.63	<0.02	<0.001	<0.05	<0.05	1.43	<0.001			0.11	9	<0.10		
	Jun-11	0.1	10.7	0.35	0.001	<0.05	<0.05	0.98	<0.001			0.20	13.7	<0.10		
	Aug-11															
	Oct-11	<0.05	12.8	0.03	<0.001	<0.05	<0.05	3.02	0.003			0.40	23.7	<0.10		
	Mar-12	<0.05	8.54	<0.02	<0.001	<0.05	<0.05	1.14	<0.001			0.11	8.3	<0.10		
	Apr-13	0.05	5.14	0.21	0.007	<0.05	<0.05	1.08	<0.001			0.15	6.6	<0.10		
	May-13	0.12	13.3	0.06	0.001	<0.05	<0.05	1.79	<0.001			0.33	18.9	<0.10	0.862	
	Aug-13	<0.05	9.43	0.14	0.001	<0.05	<0.05	1.38	0.0010			0.13	13	<0.10	0.507	
	Oct-13	<0.10	12.9	0.04	0.001	<0.10	<0.10	1.3	0.007			0.22	15.9	<0.20	3.60	
	Mar-14	0.12	14.7	1.13	0.002	0.13	<0.05	2.5	0.006			0.40	12.6	<0.10	7.45	
	May-14	<0.05	11.0	0.07	0.001	<0.05	<0.05	1.04	<0.001			0.14	9.3	<0.10	0.651	
	Aug-14	<0.10	7.82	0.10	0.008	<0.10	<0.10	1.29	<0.001			0.15	13.0	<0.20	0.859	
	Oct-14	<0.05	10.4	<0.02	<0.001	<0.05	<0.05	4.26	0.004			0.64	14.0	<0.10	5.18	
	Apr-15	<0.05	9.72	<0.02	<0.001	<0.05	<0.05	1.54	<0.001			0.21	7.7	<0.10	1.44	
	May-15															
	Aug-15															
	Oct-15	0.30	17.2	0.04	<0.001	<0.10	<0.10	2.34	0.008			0.12	21.6	0.37	1.40	
	Mar-16	<0.05	9.04	<0.02	<0.001	<0.05	<0.05	1.05	0.002			0.12	8.9	<0.10	0.629	
	May-16	0.10	14.7	0.14	<0.001	<0.05	<0.05	2.16	<0.001			0.42	20.4	<0.10	5.77	

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Surface Water Station	Date	pH	Cond.	Temp.	Dissolved Oxygen	pH	Conductivity	Colour	Turbidity	Hardness	TDS	Alkalinity	Chloride	Calcium	Sulphate
		unitless	µS/cm	°C	mg/L		unitless	µS/cm	TCU	NTU	mg/L	mg/L	mg/L	mg/L	mg/L
		6.5 - 8.5	NC	field NC	NC	6.5 - 8.5	NC	NC	Narrative	NC	NC	NC	NC	NC	NC
SW4	Aug-16	Dry													
cont.	Oct-16	Dry													
	Mar-17	7.05	415	2.91	8.73	8.01	397	76	11.0	180			4.36	57.0	
	May-17	8.08	368	7.18	5.35	8.14	398	67	11.0	178			2.36	56.2	
	Aug-17	Dry													
	Oct-17	Dry													
	Mar-18	Dry													
	May-18	7.92	311	12.23	3.50	7.95	334	97	26.8	168			4.16	52.8	
	Aug-18	Dry													
	Oct-18	8.24	391	9.20	4.68	7.77	450	48	7.4	245			2.18	80.3	
	Mar-19	8.20	246	2.42	7.00	7.55	247	30.2	92.9	123			3.07	40.0	
	May-19	7.71	312	10.77	7.71	7.78	363	48.4	5.02	199			2.89	59.2	
	Aug-19	6.54	253	18.0	5.57	7.79	319	56.1	31.0	163			1.84	52.0	
	Oct-19	7.78	297	11.02	7.79	7.62	304	48.3	8.92	164			1.44	52.4	
SW7 (977)	Oct-85					8.00	311			137			16	46	
	Dec-85					8.10	325			154			13	49	
	Apr-86					8.40	238			108			10	35	
	Jun-86					8.40	294			123			9	38	
	Sep-86					8.10	252			109			12	30	
	Dec-86					8.40	309			144			13	41	
	Mar-87					7.60	357			161			24	49	
	Jun-87					8.40	294			119			22	31	
	Sep-87								86						
	Dec-87					8.00	364		55	171			23	52	
	Mar-88					7.50	331		10	144			19	45	
	Jun-88					9.20	250		43	103			18	25	
	Sep-88					8.40	272		64	119			19	33	
	Dec-88					8.00	474		8	221			19	67	
	Mar-89					8.00	156		4	59			9	18	
	Jun-89					8.10	306		35	110			27	29	
	Sep-89					8.50	357		70	143			37	39	
	Dec-89					8.00	563		8	251			39	77	
	Mar-90					8.00	329			139			24	43	
	Jun-90					8.20	402		22	178			25	54	
	Sep-90					8.10	347		205	163			31	48	
	Dec-90					8.70	377		6	169			20	51	
	Mar-91					8.20	383		37	174			20	54	
	Jun-91					8.50	461		61	158			39	37	
	Sep-91					8.60	392		52	119			46	24	
	Dec-91					8.10	498		38	205			38	58	
	Mar-92					8.50	343		9	135			25	38	
	Jun-92					8.00	377		153	154			34	38	
	Sep-92					8.60	319		37	118			33	30	
	Dec-92					8.00	469			226			22	70	
	Mar-93					7.80	411		16	174			30	49	
	Jun-93					8.40	361		61	108			42	24	
	Sep-93					8.80	396		102	117			59	29	
	Dec-93					7.80	480		96	173			43	47	
	Mar-94					7.40	327		4	121			29	37	
	Jun-94					7.80	444		105	146			46	39	
	Sep-94					8.00	434		171	187			42	54	
	Dec-94					7.90	494		29	210			37	64	
	Mar-95					8.20	432		64	170			82	51	
	Jun-95					8.10	474		19	149			64	38	
	Sep-95					7.90	549		175	145			100	35	
	Dec-95					8.40	480		28	179			44	53	
	Apr-96					8.40	348		33	134			34	40	
	May-97						345		6	159			38	47	
	Sep-97						440		375	205			50	55	

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Oxford County Waste Management Facility**

Surface Water Station	Date	Fluoride mg/L NC	Magnesium mg/L NC	Ammonia mg/L NC	Un-ionized Ammonia ** mg/L 0.02	Nitrate mg/L NC	Nitrite mg/L NC	TKN mg/L NC	Phenols mg/L 0.001	BOD ₅ mg/L NC	COD mg/L NC	Phosphorous mg/L 0.03	DOC mg/L NC	Ortho-phosphate mg/L NC	Iron mg/L 0.30	TSS mg/L NC
SW4	Aug-16															
cont.	Oct-16															
	Mar-17	0.10	9.06	<0.02	<0.001	<0.05	<0.05	0.80	<0.001			0.08	10.9	<0.10	0.390	
	May-17	<0.05	9.13	0.10	0.002	<0.05	<0.05	1.03	<0.001			0.11	9.8	<0.10	0.69	
	Aug-17															
	Oct-17															
	Mar-18															
	May-18	<0.05	8.76	0.03	0.001	<0.05	<0.05	0.9	0.002			0.17	11.2	<0.10	0.825	
	Aug-18															
	Oct-18	<0.05	10.9	0.03	0.001	<0.05	<0.05	1.75	0.004			0.24	19.7	<0.10	1.54	
	Mar-19	0.053	5.64	0.600	0.009	0.100	<0.010	2.08	0.0012			0.147	9.40	<0.0030	3.21	
	May-19	0.090	12.4	<0.010	<0.001	<0.020	<0.010	1.18	0.0047			0.100	12.3	0.0248	0.507	
	Aug-19	0.097	8.02	0.144	<0.001	<0.020	<0.010	7.54	<0.010			0.970	15.7	0.0182	1.07	
	Oct-19	0.086	8.04	0.153	0.002	<0.020	<0.010	<1.5	0.0079			0.148	14.3	0.0117	1.46	
SW7	Oct-85		6	0.05		0.01	0.01	0.85	0.0010			0.08	8			
(977)	Dec-85		8	0.03		1.9	0.01	0.82	0.0010			0.1	5.2			
	Apr-86		5	0.02		0.4	0.01	0.5	0.0015				4.5			
	Jun-86		7	0.01		0.1	0.01	1.1	0.0010			0.13	7.6			
	Sep-86		8	0.21					0.0010			0.09	10.2			
	Dec-86		10	0.01					0.0010			0.04	8.7			
	Mar-87		9	0.17					0.0015			0.06	8.6			
	Jun-87		10	0.01					0.0015			0.1	13.6			
	Sep-87			0.01								0.29				
	Dec-87		10	0.01					0.0010			0.14	11.3			
	Mar-88		7	0.2					0.0010			0.06	7.5			
	Jun-88		10	0.03					0.0010			0.13	13			
	Sep-88		9	0.08					0.0010			0.15	10.6			
	Dec-88		13						0.0010			0.04	8.2			
	Mar-89		3	0.37					0.0055			0.1	5.2			
	Jun-89		9						0.0010			0.15	8.3			
	Sep-89		11	0.01					0.0040			0.24	4.5			
	Dec-89		15	0.25					0.0065			0.08	13.6			
	Mar-90		8	0.06					0.0270			0.08	9			
	Jun-90		10	0.28					0.0020			0.14	10.9			
	Sep-90		10	0.03					0.0010			0.4	12			
	Dec-90		10	0.04					0.0010			0.01	8.8			
	Mar-91		10	0.01					0.0025			0.22	7.8			
	Jun-91		16	0.36					0.0010			0.24	18			
	Sep-91		14	0.01					0.0010			0.26	18.5			
	Dec-91		15	0.45					0.0065			0.19	17.5			
	Mar-92		10	0.08					0.0065			0.05	6.9			
	Jun-92		14	0.54					0.0060			0.37	20			
	Sep-92		11	0.03					0.0060			0.29	14.3			
	Dec-92		13						0.0225				11.8			
	Mar-93		12	0.7					0.0130			0.16	13.8			
	Jun-93		11	0.02					0.0060			0.37	14.5			
	Sep-93		11	0.19					0.0060			0.50	21			
	Dec-93		13	1.35					0.0120			0.36	20			
	Mar-94		7	2.09				4.55	0.0100			0.35	10.8			
	Jun-94		12	0.04					0.0032			0.52	16.2			
	Sep-94		13	0.04				5	0.0099			0.57	18.2			
	Dec-94		12	0.25				2.52	0.0090			0.17	14.6			
	Mar-95		11	0.23		0.1	0.01	1.39	0.0045			0.19	6.5			
	Jun-95		13	0.08		0.1	0.02	3.8	0.0063			0.48	14.9			
	Sep-95		14	0.47		0.1	0.11	9.92	0.0068			0.61	51			
	Dec-95		11	0.5		0.4	0.02	1.99	0.0062			0.13	13.2			
	Apr-96		8	0.12		0.1	0.02	1.08	0.0043			0.10	7.4			
	May-97		10	0.18		0.01	0.01	1.18	0.0010			0.06	5.3			
	Sep-97		16	0.1		0.05	0.02		0.0010			1.32	21.8			

Notes: - PWQO - Provincial Water Quality Objectives (July 1994)

- * Values should be interpreted with caution

- Units provided

- NC - No criteria

- Blank - Indicates data not available

- ** Calculated value using the fraction of NH₃ from $f = 1/(10^{pKa-pH+1})$; where $pKa = 0.09018 + 2729.92/T$ and $T =$ ambient water temperature in Kelvin ($K = ^\circ C + 273.16$). Field pH is used in the equation.



**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	pH	Cond.	Temp.	Dissolved Oxygen	pH	Conductivity	Colour	Turbidity	Hardness	TDS	Alkalinity	Chloride	Calcium	Sulphate
		unitless	µS/cm	°C	mg/L		unitless	µS/cm	TCU	NTU	mg/L	mg/L	mg/L	mg/L	mg/L
		field				6.5 - 8.5	NC	NC	Narrative	NC	NC	NC	NC	NC	NC
PWQO		6.5 - 8.5	NC	NC	NC	6.5 - 8.5	NC	NC	NC	NC	NC	NC	NC	NC	NC
SW7	Dec-97								185	191			54	56	
cont.	May-98					8.30	448	9	36	176			40	47	
	Jun-98					8.20	516	20	101	162			76	39	
	Sep-98					7.60	1140	29	819	298			235	81	
	Dec-98														
	Apr-99					8.10	523	6	6	178			61	51	
	Jun-99					7.70	752	8	104	267			107	73	
	Sep-99					7.60	1420	17	94	537			211	157	
	Nov-99					8.00	755	8	30	225			39	69	
	Apr-00					8.30	609	16		249			66	69	
	Jun-00					8.50	371	19		146			24	39	
	Sep-00					8.30	332	10		143			18	42	
	Nov-00					8.20	411	12		196			24	59	
	Apr-01					8.00	309	<5	4	182			31	54	
	Jun-01					8.60	456	7	95	157			49	41	
	Sep-01														
	Nov-01					8.60	468	9	29	186			46	48	
	Apr-02					8.30	566	7	102	251			30	71	
	Jun-02					8.10	623	32	402	166			84	47	
	Nov-02					7.90	418	12	352	211			34	62	
	Mar-03					8.10	480	8	5	186			40	55	
	Apr-03					8.30	508	14	64	200			39	56	
	Jul-03					8.10	438	<5	32	167			37	45	
	Oct-03					8.00	455	6	43	173			35	47	
	Nov-03					8.10	429	22	93	186			29	52	
	Apr-04					8.20	499	20	32	149			40	31	
	Jun-04					8.10	403	15	8	158			23	43	
	Nov-04					8.30	456	58	49	156			31	39	
	Dec-04					8.20	423	5	511	172			30	45	
	Apr-05					8.22	553	33	215	221			48	61	
	Jul-05								404	145			55	66	
	Sep-05								764	346			44	105	
	Nov-05					8.40	413	14		150			38	80	
	Apr-06					8.40	366	640	>200	210			28	63	
	Jun-06					8.00	343	160	>200	210			28	64	
	Sep-06					8.40	322	190	133	190			25	57	
	Oct-06					8.10	297	10	150	200			18	62	
	Nov-06					8.20	340	110	104	170			15	52	
	Apr-07					8.10	402	180	105	180			24	54	
	May-07					8.10	340	250	>200	260			25	80	
	Nov-07					8.20	435	13	117	280			30	82	
	Jan-08	7.64	419	3.2	14.33	7.80	412	16	21	230			25	70	
	Apr-08	8.59	358	10.5	11.56	8.30	368	17	32	180			18	56	
	Jun-08	8.42	340	21.8	8.49	8.20	347	6	>200	240			20	71	
	Aug-08	8.42	378	21.2	8.39	8.20	355	6	87	160			21	48	
	Mar-09	8.11	394	2.8	8.27	8.01	439	16	59	170			41	52.3	
	May-09	7.67	317	14.5	7.18	8.23	351	7	128	191			17.1	60.7	
	Oct-09	8.88	302	13.2	5.87	8.26	333	5	25	196			13.5	55.5	
	Dec-09	9.27	459	4.4	5.46	8.14	410	5	16	206			14.6	62.1	
	Mar-10	7.95	430	2.4	12.56	8.15	405				242	136	19.8		49.2
	May-10	8.49	380	12.9	12.90	8.19	8.09 *				230	362	22.3		55.9
	Jul-10	8.09	230	25.4	5.99	8.23	287				202	86	14.7		39.5
	Oct-10	7.93	390	11.8	10.49	8.29	348				280	126	15.2		52
Supplemental	Apr-11	7.22	431	10.9		8.25	449				296	126	38.9		42.2
	Apr-11	7.29	436	10.7	11.03	8.18	482				250	127	44.6		48.5
	Jun-11	6.99	336	18.0	7.89	8.14	362				260	96	33.4		52.7
	Aug-11	7.02	410	25.4	5.18	8.33	371				286	104	31.3		44.6
	Oct-11	7.54	423	10.4	8.63	8.16	361				262	126	28.2		55.9

Notes: - PWQO - Provincial Water Quality Objectives (July 1994) - * Values should be interpreted with caution - Units provided
 - NC - No criteria - Blank - Indicates data not available
 - ** Calculated value using the fraction of NH₃ from f = 1/(10^{pKa-pH}+1); where pKa = 0.09018 + 2729.92/T and T = ambient water temperature in Kelvin (K = °C + 273.16). Field pH is used in the equation.

**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	Fluoride mg/L NC	Magnesium mg/L NC	Ammonia mg/L NC	Un-ionized Ammonia ** mg/L 0.02	Nitrate mg/L NC	Nitrite mg/L NC	TKN mg/L NC	Phenols mg/L 0.001	BOD ₅ mg/L NC	COD mg/L NC	Phosphorous mg/L 0.03	DOC mg/L NC	Ortho-phosphate mg/L NC	Iron mg/L 0.30	TSS mg/L NC
SW7	Dec-97		13	1.73		0.17	0.070		0.0010			1.07	10.8			
cont.	May-98	0.2	14	0.05		<0.1	<0.02	0.98	0.0010			<0.02	8			
	Jun-98	0.3	15	0.05		<0.1	0.020	4.64	<0.001			0.69	20.2			
	Sep-98	0.4	23	2.7		<0.1	<0.02	26.2	0.0040			4.43	86.5			
	Dec-98						dry						dry			
	Apr-99	<0.1	12	0.05		0.1	<0.02	0.98	0.0010			<0.01	8.7			
	Jun-99	0.3	21	0.05		<0.1	<0.02	7.23	<0.001			0.66	23.4			
	Sep-99	0.3	35	0.14		0.27	<0.02	5.43	<0.001			0.72	33.5			
	Nov-99	0.2	13	0.1		3.47	0.05	1.49	0.0020			0.10	8			
	Apr-00	0.3	18	0.06		<0.1	<0.02	1.49	0.0020			0.08	10.5			
	Jun-00	0.4	12	0.06		<0.1	<0.02	0.94	0.0010			0.04	8.9			
	Sep-00	0.4	9	0.18		0.27	0.02	1.25	0.0050			0.06	6.4			
	Nov-00	0.3	12	0.23		<0.1	<0.02	1.18	<0.001			0.06	6.1			
	Apr-01	<0.1	11	0.43		0.31	<0.02	1.19	0.0060			0.09	4.9			
	Jun-01	0.4	13	0.05		<0.1	<0.02	2.32	<0.001			0.16	8.9			
	Sep-01															
	Nov-01	0.29	16	0.19		<0.1	<0.02	1.98	<0.001			0.14	9.9			
	Apr-02	0.29	18	1.83		0.3	0.020	3.26	<0.002			0.17	8.6			
	Jun-02	<0.1	12	0.06		0.1	0.020	6.27	<0.002			0.75	11.9			
	Nov-02	0.3	14	0.85		1.95	0.080	3.06	<0.002			<0.01	6.5			
	Mar-03	0.17	12	1.78		1.22	0.040	3.51	<0.002			<0.08	7.6			
	Apr-03	0.24	15	2.11		1.12	0.040	3.89	<0.002			0.04	7.2			
	Jul-03	0.35	14	0.07		0.79	0.020	0.69	<0.002			<0.05	5.1			
	Oct-03	0.34	14	<0.05		0.97	0.020	0.65	<0.002			<0.05	5			
	Nov-03	0.3	14	0.41		1.04	0.030	1.54	<0.002				5.7			
	Apr-04	0.25	17	1.58		1.71	<0.02	3.82	<0.002			0.06	8.9	<0.002		
	Jun-04	0.34	12	0.4		0.1	0.040	1.59	<0.002			0.04	6.4	0.003		
	Nov-04	0.38	14	0.2		<0.1	<0.02	2.52	0.0030			0.3	19.9	<0.002		
	Dec-04	0.5	14	0.47		0.6	ND	3.8	0.0020			0.52	9.4	ND		
	Apr-05	0.3	17	9.04		0.4	<0.1	12.9	0.0020			0.24	12.9	<0.005		
	Jul-05		20	1.45		<0.2	<0.3	6.8	0.0010			0.46	10.1	<0.005		
	Sep-05		20	0.68		<0.2	<0.3	5.6	0.0010			0.68	8.2	0.012		
	Nov-05	0.2	20	0.29		0.2	<0.01						7.7			
	Apr-06	0.1	13	<0.05		<0.1	<0.1	0.6	<0.001			0.3	4	<0.3		
	Jun-06	0.2	13	<0.05		<0.1	<0.1	0.8	<0.001			0.42	4	<0.3		
	Sep-06	0.1	11	0.15		0.1	<0.1	1	<0.001			0.31	5	<0.3		
	Oct-06	0.1	10	0.37		0.2	<0.1	3.1	<0.001			0.27	5	<0.3		
	Nov-06	0.1	10	<0.05		0.3	<0.1	0.8	<0.001			0.17	5	<0.3		
	Apr-07	0.1	12	0.05		0.3	<0.1	1	<0.001			0.22	6	0.005		
	May-07	0.1	15	<0.05		<0.1	<0.1	5.3	<0.001			0.57	6	<0.003		
	Nov-07	0.2	18	0.56		0.3	<0.1	2	<0.001			0.4	8	0.003		
	Jan-08	0.1	13	0.71	0.003	0.3	<0.1	2.9	0.0020			0.14	6			
	Apr-08	0.1	10	0.53	0.037	0.2	<0.1	1.4	0.0020			0.07	6			
	Jun-08	0.2	15	0.77	0.082	<0.1	<0.1		0.0020			0.3	7			
	Aug-08	0.2	11	0.23	0.023	0.3	<0.1	1.38	0.0001			0.16	5			
	Mar-09	0.1	10.7	0.73	0.010	0.7	<0.1	1.2	0.0010			0.084	5	0.004		
	May-09	0.12	9.5	0.198	0.002	0.42	<0.10	1.26	<0.0010			0.171	4.9	0.0123		
	Oct-09	0.21	14	0.13	0.020	0.22	<0.10	1.19	<0.0010			0.0849	12.6	0.0032		
	Dec-09	0.21	12.3	0.436	0.079	0.75	<0.10	1.79	0.0020			0.0296	7.3	<0.0030		
	Mar-10			0.77	0.007	0.23	<0.05	1.35	<0.001	<5	13	0.12			0.964	54
	May-10			<0.02	<0.001	0.16	<0.05	0.56	<0.001	<5	17	0.14			0.31	52
	Jul-10			<0.02	<0.001	0.34	<0.05	0.64	<0.001	<5	11	0.09			0.479	43
	Oct-10			0.14	0.003	0.25	<0.05	1.42	<0.001	<5	8	0.25			0.83	136
Supplemental	Apr-11			0.38	0.001	0.64	<0.05	1.6	<0.001	<5	15	0.07			0.494	57
	Apr-11			0.12	<0.001	0.72	<0.05	1.7	<0.001	<5	8	0.09			0.5	59
	Jun-11			0.04	<0.001	<0.05	<0.05	0.64	<0.001	<5	15	0.07			0.28	50
	Aug-11			0.02	<0.001	<0.05	<0.05	1.36	<0.001	<5	30	0.2			0.65	100
	Oct-11			0.53	0.003	0.18	<0.05	1.13	<0.001	<5	12	0.11			0.66	133

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**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	pH	Cond.	Temp.	Dissolved Oxygen	pH	Conductivity	Colour	Turbidity	Hardness	TDS	Alkalinity	Chloride	Calcium	Sulphate
		unitless	µS/cm	°C	mg/L	unitless	µS/cm	TCU	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			field			6.5 - 8.5	NC	NC	Narrative	NC	NC	NC	NC	NC	NC
SW7	Mar-12	6.9	522	5.4	10.90	8.16	545				330	166	39.7		63.9
cont.	May-12	8.60	500	26.0	9.44	7.99	455				252	114	49.5		60.9
	Aug-12	7.36	389	22.5	6.14	7.65	440				276	106	44.1		37.1
	Oct-12	7.48	416	11.2	8.60	8.17	417				312	134	35.1		53.8
Supplemental	Oct-12	7.47	381	7.2	8.52	7.89	453				260	128	35.2		58.5
Supplemental	Mar-13	8.67	363	0.9	8.39	7.76	264				148	84	15.7		17.4
	Apr-13	8.41	557	8.7	9.97	7.94	505				290	155	43.6		35.2
Supplemental	Apr-13	8.44	583	6.5	10.80	7.90	517				282	149	42.1		43.6
	May-13	8.54	453	21.0	12.23	8.17	430				230	92	47.8		47.3
	Aug-13	8.19	495	21.9	7.59	7.74	488	8	42.3	169	296	126	40.4	46.4	51.5
Supplemental	Oct-13	7.65	381	17.2	11.48	8.25	428				256	104	24		2.21
	Oct-13	8.49	553	9.0	7.81	8.14	510	14.0	79.8	58.5	308	148	37.7		59.8
Supplemental	Mar-14	8.08	533	1.8	10.23	7.54	455				165	242	143	37.6	34.1
	Mar-14	7.99	524	1.9	9.01	8.01	443	13.0	21.8	164	262	140	36.6		35.6
	May-14	8.22	579	16.1	10.54	8.24	603	11.0	69.2	199	380	161	51.2		55.1
	Aug-14	8.25	445	22.1	8.35	8.13	403	12.0	81.2	150	248	95	40.7		49.3
	Oct-14	8.00	509	12.0	9.55	8.05	575	14.0	60.6	204	310	147	40.6		59.0
	Apr-15	8.37	210	7.7	6.3	7.69	222	7.0	3.7	68	100	61	19.6		17.3
Supplemental	Apr-15	7.45	540	9.0	9.9	8.05	623				328	188	60.4		50.3
	May-15	7.25	420	17.1	8.8	8.40	562	12.0	28.3	161	342	129	68.4		53.5
	Aug-15	8.28	540	19.1	4.12	8.28	567	12.0	50.5	168	290	150	58.2		42.7
	Oct-15	8.13	560	8.5	8.29	7.98	510	12.0	141	189	310	131	48.6		57.1
	Mar-16	7.75	605	8.2	9.3	8.09	764	20	55.3	281	438	228	65.5		104
Supplemental	Apr-16	6.81	565	8.8	9.34	7.99	699				396	250	53.2		56.8
	May-16	7.31	582	11.9	9.3	8.27	691	<5	45.1	246	386	236	58.8		65.2
	Aug-16	7.77	383	23.5	8.9	8.22	592	14	124	158	310	130	59.8		62.5
	Oct-16	8.75	610	18.5	8.3	8.11	644	11	54.8	184	346	145	55.0		76.6
	Mar-17	7.98	579	4.77	5.52	8.16	582	12	215	208	304	160	37.6		72.0
Supplemental	Mar-17	7.96	490	9.0	6.24	8.09	259				114	66	17.1		28.0
Supplemental	Apr-17	8.03	568	10.01	8.7	8.00	584				320	189	39.1		62.5
	May-17	8.30	581	9.13	6.76	8.22	635	25	168	196	312	199	37.2		60.8
	Aug-17	8.08	426	22.74	6.19	7.88	516	16	61.4	156	286	156	44.8		44.0
	Oct-17	7.21	402	13.13	5.16	8.10	500	17	39.2	170	300	130	46.8		63.9
Supplemental	Mar-18	7.35	554	2.35	6.57	8.02	492	19	56	180	308	170	47.8		48.1
Supplemental	Apr-18	8.18	449	2.0	9.67	8.01	607				368	180	64.8		64.5
	May-18	8.00	573	15.50	5.20	7.96	621	18	135	209	350	174	67.6		67.3
Supplemental	May-18	8.28	524	17.40	12.1	7.89	598				310	116	65.6		67.1
	Aug-18	8.28	409	24.80	6.91	8.20	472	<5	45.7	153	270	101	54.9		55.3
	Oct-18	7.57	510	12.25	5.79	7.46	572	7	33.1	185	324	116	55.6		62.7
Supplemental	Nov-18	8.33	399	8.29	6.26	7.94	612				340	130	55.4		66.1
	Mar-19	7.13	429	1.66	8.72	7.64	468	35.6	38.5	136	281	138	52.2	40.5	22.8
Supplemental	Apr-19	7.95	727	5.94	8.04	8.05	707				413	224	82.6		35.6
	May-19	8.37	601	9.93	11.53	8.33	723	26.7	94.6	247	433	237	77.5	65.4	44.0
	Aug-19	7.83	449	21.1	5.50	8.27	572	12.6	60.0	158	346	135	73.5	35.8	40.8
	Oct-19	8.21	571	14.05	7.00	8.40	650	14.1	19.7	197	350	172	73.9	47.3	51.7
SW8 (978)	Jun-89					7.40	990		2	457			70	135	
	Jun-90					7.70	818		1	395			43	117	
	Sep-90					7.70	916		5	431			52	130	
	Dec-90					8.00	839		1	410			34	121	
	Mar-91					7.50	692		2	326			31	97	
	Jun-91					7.30	800		4	366			34	109	
	Dec-91					7.80	759		2	345			47	101	
	Mar-92					7.70	726		1	330			46	94	
	Sep-92					7.40	851		1	417			36	124	
	Dec-92					7.50	756			403			30	120	
	Jun-93					7.60	751		1	371			30	112	
	Dec-93					6.00	724		9	357			27	107	
	Jun-94					7.20	784		1	407			24	121	
	Dec-94					7.80	873		1	424			57	124	

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**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	Fluoride mg/L NC	Magnesium mg/L NC	Ammonia mg/L NC	Un-ionized Ammonia ** mg/L 0.02	Nitrate mg/L NC	Nitrite mg/L NC	TKN mg/L NC	Phenols mg/L 0.001	BOD ₅ mg/L NC	COD mg/L NC	Phosphorous mg/L 0.03	DOC mg/L NC	Ortho-phosphate mg/L NC	Iron mg/L 0.30	TSS mg/L NC
SW7	Mar-12			0.54	0.001	0.61	<0.05	2.73	<0.001	5	47	0.13			0.56	74
cont.	May-12			<0.02	<0.004	0.08	<0.05	0.75	<0.001	<5	18	0.06			0.53	48
	Aug-12			0.02	<0.001	<0.05	<0.05	0.64	<0.001	<5	30	0.31			0.83	114
	Oct-12			0.32	0.002	0.09	<0.05	1.24	<0.001	<5	32	0.09			0.68	53
Supplemental	Oct-12			0.5	0.002	0.17	<0.05	1.56	<0.001	<5	20	0.07			0.6	23
Supplemental	Mar-13			0.76	0.030	0.21	<0.05	1.68	<0.001	7	29	0.09			0.49	29
	Apr-13			1.58	0.065	0.13	<0.05	2.38	0.0010	<5	19	0.13			0.82	73
Supplemental	Apr-13			1.39	0.052	0.42	<0.05	3.24	<0.001	<5	25	0.12			0.56	67
	May-13			0.13	0.017	0.38	<0.05	0.88	<0.001	<5	23	0.05			0.37	30
	Aug-13	<0.05	13	0.23	0.015	0.05	<0.05	1.05	<0.001	<5	11	0.03	5.5		0.49	32
Supplemental	Oct-13			0.1	0.001	<0.05	<0.05	1.14	<0.001	<5	25	0.19			1.3	104
	Oct-13	<0.10		0.81	0.041	0.27	<0.10	1.74	<0.001	<5	29	0.06	6.5		0.61	60
Supplemental	Mar-14	<0.05		1.55	0.018	0.47	<0.05	4.78	0.001	7	8	0.12			1.11	39
	Mar-14	0.08		2.86	0.027	0.25	<0.05	3.84	<0.001	<5	22	0.09	7.2		0.25	15
	May-14	<0.05		1.68	0.079	0.98	<0.05	2.69	<0.001	<5	21	0.08	6.2		0.37	51
	Aug-14	0.11		0.03	0.002	<0.10	<0.10	0.84	<0.001	<5	26	0.13	6.0		0.50	62
	Oct-14	<0.05		0.82	0.017	0.22	<0.05	2.21	<0.001	<5	10	0.14	5.9		0.89	72
	Apr-15	<0.05		0.77	0.027	<0.05	<0.05	2.97	<0.001	5	19	0.09	6.0		0.04	<10
Supplemental	Apr-15			1.60	0.008	<0.25	<0.25	5.39	0.001	11	40	0.06			0.87	42
	May-15	0.12		0.14	0.001	0.45	<0.05	1.36	<0.001	<5	23	0.07	7.5		0.22	21
	Aug-15	<0.25		0.12	0.008	<0.25	<0.25	1.63	<0.001	<5	22	0.18	8.6		1.04	105
	Oct-15	0.15		0.19	0.004	0.24	<0.10	1.54	<0.001	<5	34	0.11	7.3		0.90	106
	Mar-16	<0.25		2.28	0.020	<0.25	<0.25	4.33	0.014	37	92	0.15	25.8		1.90	57
Supplemental	Apr-16			3.82	0.004	0.18	<0.10	5.17	0.003	16	54	0.16			1.66	62
	May-16	<0.10		3.36	0.015	0.11	<0.10	4.63	<0.001	5	36	0.12	10.9		0.37	40
	Aug-16	<0.25		0.11	0.003	<0.25	<0.25	1.99	<0.001	10	48	0.27	8.9		1.35	110
	Oct-16	0.18		0.35	0.058	<0.05	<0.05	2.02	<0.001	6	42	0.23	9		0.48	52
	Mar-17	0.09		1.17	0.014	0.42	<0.05	2.19	<0.001	<5	20	0.10	6.5		3.55	139
Supplemental	Mar-17			0.81	0.012	0.20	<0.05	1.24	<0.001	<5	<5	0.03			0.045	12
Supplemental	Apr-17			1.96	0.038	0.46	<0.05	3.19	<0.001	<5	21	0.18			0.63	73
	May-17	<0.10		2.18	0.073	0.32	<0.10	3.45	<0.001	10	32	0.18	9.6		1.03	113
	Aug-17	0.53		0.14	0.008	0.08	<0.05	1.35	<0.001	<5	41	0.10	10.1		0.44	42
	Oct-17	0.09		0.26	0.001	0.08	<0.05	1.44	<0.001	<5	37	0.09	10.1		0.35	26
Supplemental	Mar-18	<0.05		2.92	0.007	0.21	<0.05	3.7	<0.001	<5	23	0.12	8.5		0.54	35
Supplemental	Apr-18			2.68	0.039	0.91	<0.10	3.35	<0.001	9	37	0.29			0.96	89
	May-18	<0.10		1.98	0.055	0.52	<0.10	3.35	0.0010	7	25	0.10	10.3		0.67	87
Supplemental	May-18			1.22	0.072	0.49	<0.10	2.36	<0.001	6	25	0.15			0.43	51
	Aug-18	0.14		<0.02	<0.002	<0.05	<0.05	1.09	0.002	<5	23	0.10	7.7		0.39	33
	Oct-18	<0.10		0.40	0.003	0.16	<0.10	1.64	0.001	<5	15	0.08	8.3		0.29	27
Supplemental	Nov-18			1.49	0.050	0.31	<0.10	2.20	<0.001	5	36	0.12			0.635	71
	Mar-19	0.065	8.49	0.257	<0.001	0.212	0.015	4.70	0.0026	8.0	59	0.113	14.4		1.52	27.4
Supplemental	Apr-19			5.56	0.066	0.155	0.011	8.87	0.0055	5.5	66	0.179			2.96	39.4
	May-19	0.109	20.4	4.23	0.176	0.168	0.022	7.65	0.0013	3.1	60	0.110	15.6		2.41	29.4
	Aug-19	0.193	16.7	0.397	0.011	0.088	0.031	2.83	<0.0010	2.6	50	0.095	13.4		1.22	51.3
	Oct-19	0.178	19.1	0.662	0.026	0.152	0.034	2.26	0.0096	<2.0	44	0.071	13.3		0.527	19.8
SW8	Jun-89		29	0.01								0.34	3.7			
(978)	Jun-90		25	0.01								0.03	3.1			
	Sep-90		26	0.29								0.02	4.5			
	Dec-90		26									0.02	3.1			
	Mar-91		20	0.29								0.26	3.1			
	Jun-91		23	0.01					0.0010			0.05	17			
	Dec-91		23	0.02					0.0010			0.07	4			
	Mar-92		23	0.39					0.0010			0.09	2.8			
	Sep-92		26	0.02					0.0010			0.04	3.3			
	Dec-92		25						0.0230				6			
	Jun-93		22	0.01					0.0010			0.03	3			
	Dec-93		22	0.03					0.0010				5.4			
	Jun-94		25	0.01					0.0010			0.04	4.5			
	Dec-94		27	0.1				0.56	0.0010			0.08	3.4			

Notes: PWQO - Provincial Water Quality Objectives (July 1994)

** Values should be interpreted with caution

Units provided

NC - No criteria

Blank - Indicates data not available

** Calculated value using the fraction of NH₃ from f = 1/(10^{pKa-pH}+1); where pKa = 0.09018 + 2729.92/T and T = ambient water temperature in Kelvin (K = °C + 273.16). Field pH is used in the equation.

**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	pH	Cond.	Temp.	Dissolved Oxygen	pH	Conductivity	Colour	Turbidity	Hardness	TDS	Alkalinity	Chloride	Calcium	Sulphate
		unitless	µS/cm	°C	mg/L	unitless	µS/cm	TCU	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				field		6.5 - 8.5	NC	NC	Narrative	NC	NC	NC	NC	NC	NC
PWQO		6.5 - 8.5	NC	NC	NC	6.5 - 8.5	NC	NC	Narrative	NC	NC	NC	NC	NC	NC
SW8	Mar-95					7.80	715		1	364			36	106	
cont.	Dec-95					7.70	691		2	317			30	95	
	Apr-96					7.40	545		343	235			37	68	
	May-97						599		1	349			27	104	
	Dec-97						703		1	369			35	119	
	May-98					7.60	724	5	1	359			42	106	
	Jun-98														
	Sep-98														
	Dec-98														
	Apr-99					7.80	758	8	1	317			82	96	
	Jun-99					8.10	716	12	1	387			35	117	
	Jul-99														
	Sep-99					7.50	1150	58	1	303			242	97	
	Nov-99					8.00	1140	8	1	406			63	122	
	Apr-00					7.80	780	<5	1	678			56	210	
	Jun-00					7.40	740	12	4	369			41	108	
	Sep-00					7.50	592	21	17	311			29	94	
	Nov-00					7.70	780	10	3	429			40	130	
	Apr-01					7.60	672	<5	3	389			74	117	
	Jun-01					7.90	833	<5	2	428			44	128	
	Sep-01						883	43	45	459			19	133	
	Nov-01					8.10	770	<5	1	379			68	113	
	Apr-02					8.20	741	<5	2	352			52	105	
	Jun-02					8.20	660	12	13	350			26	106	
	Nov-02					8.00	910	33	18	478			68	150	
	Mar-03					8.10	650	8	5	292			52	91	
	Apr-03					8.20	853	8	4	356			82	106	
	Jul-03					8.10	930	<5	3	458			74	142	
	Oct-03					8.10	1420	14	11	526			228	162	
	Nov-03					7.80	682	30	11	336			45	101	
	Apr-04					8.20	897	8	2	354			92	105	
	Jun-04					8.00	820	13	2	378			66	112	
	Nov-04					8.10	820	5	2	354			68	106	
	Dec-04					8.00	603	5	11	316			36	96	
	Apr-05					8.20	637	20	63	322			47	97	
	Jul-05						829		7	443			28	150	
	Sep-05						550		1010	447			35	149	
	Nov-05					8.10	530	50		240			38	76	
	Apr-06					7.60	792	25	4	370			78	111	
	Jun-06					7.50	799	41	17	390			59	119	
	Sep-06					7.60	866	16	3	410			90	132	
	Oct-06					7.80	313	82	>200	260			17	79	
	Nov-06					7.50	729	12	2	370			44	114	
	Apr-07					7.60	747	11	2	320			58	92	
	May-07					7.50	900	28	8	400			105	125	
	Nov-07					7.90	925	61	70	480			88	149	
	Jan-08	7.41	407	4.4	13.47	7.60	395	122	102	210			35	67	
	Apr-08	7.77	582	7.6	13.99	8.10	600	20	18	270			48	82	
	Jun-08	7.44	642	15.9	10.95	7.80	665	14	12	300			44	83	
	Aug-08	7.66	640	17.4	9.83	7.80	673	15	37	280			49	85	
	Mar-09	8.02	349	3.9	9.14	7.98	387	70	124	160			34	50.8	
	May-09	6.87	449	12.9	6.86	7.93	514	36	90	240			36.3	76	
	Oct-09	8.01	669	14.3	7.01	8.21	753	25	25	332			84.2	95.3	
	Dec-09	8.75	715	6.4	5.06	7.94	789	12	17	367			60.2	109	
	Mar-10	7.68	650	3.8	10.47	8.11	586	28	26.3	251			45.7	76.8	
	May-10	8.74	700	12.3		8.15	645	23	7.3	265			73.7	75.5	
	Jul-10	7.18	320	25.5	2.20	7.80	404	100	5.0	172			16.9	54.1	
	Oct-10	7.58	1090	14.1	8.21	8.19	887	71	32.0	308			131	91	
	Apr-11	7.66	682	11.8	11.26	8.22	717	28	35.1	314			60.2	94.1	

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 ** Calculated value using the fraction of NH₃ from $f = 1/(10^{pKa-pH+1})$; where pKa = 0.09018 + 2729.92/T and T = ambient water temperature in Kelvin (K = °C + 273.16). Field pH is used in the equation.



**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	Fluoride mg/L NC	Magnesium mg/L NC	Ammonia mg/L NC	Un-ionized Ammonia ** mg/L 0.02	Nitrate mg/L NC	Nitrite mg/L NC	TKN mg/L NC	Phenols mg/L 0.001	BOD ₅ mg/L NC	COD mg/L NC	Phosphorous mg/L 0.03	DOC mg/L NC	Ortho-phosphate mg/L NC	Iron mg/L 0.30	TSS mg/L NC
SW8	Mar-95		24	0.05		9.7	0.01	0.57	0.0010			0.06	2.5			
cont.	Dec-95		19	0.16		20	0.02	0.77	0.0092			0.08	3.3			
	Apr-96		16	0.34		11.8	0.14	1.99	0.0036			0.78	6.6			
	May-97		22	0.12		8.4	0.01	0.69	0.0010			0.01	2.3			
	Dec-97		22	0.06		0.05	0.01		0.0010			0.02	1.8			
	May-98	0.1	23	<0.05		6.16	<0.02	0.42	<0.001			0.03	2			
	Jun-98	Dry		Dry												
	Sep-98	Dry		Dry												
	Dec-98	Dry		Dry												
	Apr-99	0.2	19	<0.05		19.7	<0.02	0.56	<0.001			0.05	3.1			
	Jun-99	0.2	23	<0.05		18.4	0.030	0.49	0.0010			0.07	4.2			
	Jul-99															
	Sep-99	0.2	15	0.18		1.22	0.04	1.28	0.0010			0.28	4.1			
	Nov-99	0.2	25	<0.05		21.4	0.02	0.6	<0.001			0.07	4.7			
	Apr-00	0.2	37	<0.05		15.4	<0.02	0.48	<0.001			0.01	3.1			
	Jun-00	0.2	24	<0.05		16.6	<0.02	0.29	<0.001			0.03	3			
	Sep-00	0.2	19	0.06		4.04	<0.02	0.65	<0.001			1.04	5			
	Nov-00	0.2	25	0.07		6.94	<0.02	0.33	<0.001			0.02	2.8			
	Apr-01	0.3	24	<0.05		9.66	<0.02	0.45	0.003			0.06	2.11			
	Jun-01	0.2	26	<0.05		20.9	<0.02	0.45	<0.001			0.03	2.8			
	Sep-01	0.27	31						<0.001			0.37				
	Nov-01	0.17	24	<0.05		9.71	<0.02	0.39	<0.001			0.06	2.9			
	Apr-02	0.18	22	<0.05		17.7	<0.02	0.5	<0.002			0.06	2.6			
	Jun-02	<0.1	21	0.08		18.8	<0.02	0.91	<0.002			0.12	4.6			
	Nov-02	0.2	25	0.09		7.11	0.02	1.07	<0.002			0.06	9.9			
	Mar-03	0.13	16	<0.05		11	<0.02	1.09	<0.002			<0.08	4.3			
	Apr-03	0.12	22	<0.05		12.9	<0.02	0.58	<0.002			0.04	3			
	Jul-03	0.13	25	<0.05		15.4	<0.02	0.52	<0.002			<0.05	2.4			
	Oct-03	0.14	30	<0.05		7.11	<0.02	0.48	<0.002			0.09	5.4			
	Nov-03	0.17	20	<0.05		12.6	0.04	1.17	<0.002			0.53	4.5			
	Apr-04	0.16	22	<0.05		6.62	0.03	0.48	<0.002			0.05	3.2	0.025		
	Jun-04	0.19	24	<0.05		5.59	<0.02	0.38	<0.002			0.03	3.6	0.05		
	Nov-04	0.15	22	0.09		3.08	<0.02	0.48	0.003			0.05	7.6	<0.002		
	Dec-04	0.4	19	ND		10.4	ND	0.7	0.001			0.13	6.7	ND		
	Apr-05	0.1	19	0.1		10.9	<0.1	0.7	0.002			0.13	4.9	0.077		
	Jul-05		31	<0.05		7.8	<0.3	0.5	0.001			0.05	3.5	0.049		
	Sep-05		18	0.14		3	<0.3	2	0.003			0.69	4.8	0.021		
	Nov-05	0.1	15	<0.05		7.5	0.45						26.6			
	Apr-06	0.2	23	<0.05		11.4	<0.1	0.7	<0.001			0.03	3	<0.3		
	Jun-06	0.1	23	<0.05		13.1	<0.1	0.6	<0.001			0.07	2	<0.3		
	Sep-06	0.1	21	<0.05		4.8	<0.1	0.8	<0.001			0.09	3	<0.3		
	Oct-06	0.1	15	0.5		2.5	<0.1	1.4	<0.001			0.98	10	<0.3		
	Nov-06	0.1	21	<0.05		7.7	<0.1	0.9	<0.001			0.05	4	<0.3		
	Apr-07	0.1	23	<0.05		7.3	<0.1	0.6	<0.001			0.04	3	0.025		
	May-07	0.1	21	0.14		7.9	0.1	1.3	<0.001			0.11	5	0.069		
	Nov-07	0.2	27	1.7		10.2	0.2	4.2	0.002			3.2	16	1.9		
	Jan-08	0.2	11	0.06	<0.001	5.3	<0.1	2.4	<0.001			0.63	6			
	Apr-08	0.1	16	0.12	0.001	6.6	<0.1	0.9	<0.001			0.10	5			
	Jun-08	0.2	22	0.07	0.001	8.1	<0.1	0.58	<0.001			0.07	6			
	Aug-08	0.2	17	0.06	0.001	1.9	<0.1	0.8	0.0001			0.1	5			
	Mar-09	0.1	9.1	0.18	0.002	3.7	<0.1	1.64	0.003			0.61	15	0.24		
	May-09	0.13	12.3	0.121	<0.001	9	<0.10	1.25	<0.0010			0.367	8	0.0989		
	Oct-09	0.15	22.9	0.085	0.002	2	<0.10	2.26	<0.0010			0.257	<1.0	0.0067		
	Dec-09	0.14	22.8	0.093	0.007	4.34	<0.10	1.24	<0.0010			0.0858	6.3	0.0284		
	Mar-10	<0.05	14.3	<0.02	<0.001	10	<0.05	0.24	<0.001			0.16	8.2	<0.10		
	May-10	<0.05	18.5	<0.02	<0.002	4.48	<0.05	1.62	<0.001			0.1	7.2	<0.10		
	Jul-10	<0.05	9.07	0.08	0.001	2.15	0.420	2.06	0.001			0.3	13.7	0.23		
	Oct-10	<0.05	19.7	0.33	0.003	2.5	<0.05	3.36	<0.001			0.24	17.1	<0.10		
	Apr-11	<0.05	19.3	0.29	0.003	6.08	<0.05	1.43	<0.001			0.15	6.9	<0.10		

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- ** Calculated value using the fraction of NH₃ from $f = 1/(10^{pKa-pH+1})$; where pKa = 0.09018 + 2729.92/T and T = ambient water temperature in Kelvin (K = °C + 273.16). Field pH is used in the equation.

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Surface Water Station	Date	pH	Cond.	Temp.	Dissolved Oxygen	pH	Conductivity	Colour	Turbidity	Hardness	TDS	Alkalinity	Chloride	Calcium	Sulphate	
		unitless	µS/cm	°C	mg/L		unitless	µS/cm	TCU	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			field				6.5 - 8.5	NC	NC	Narrative	NC	NC	NC	NC	NC	NC
SW8	Jun-11	6.92	606	16.6	9.84	8.10	672	27	29.6	303			60.8	87.4		
	Aug-11	7.55	618	24.7	8.26	8.45	604	101	67.7	179			86.3	45.5		
	Oct-11	7.33	722	12.7	8.52	8.09	631	45	403	311			49.6	93.8		
	Mar-12	7.1	652	6.8	10.45	8.22	724	26	9.3	314			49.9	91.6		
	May-12	7.85	880	16.0	11.03	8.05	746	14	4.1	383			46.2	111		
	Aug-12	7.03	546	21.1	6.93	7.90	589	114	51.1	207			70.9	53.9		
	Oct-12	7.12	653	11.8	6.60	8.32	624	56	99.9	292			65.2	87.9		
	Apr-13	8.27	885	6.2	10.16	8.08	814	12	25.2	351			62.3	104		
	May-13	7.82	804	14.3	8.73	8.24	769	<5	9.8	302			61.4	87		
	Aug-13	7.7	795	20.4	5.04	7.43	804	47	41.4	284			81.8	80.2		
	Oct-13	8.38	550	11.4	5.60	8.07	516	62	117	239			30.2	71.5		
	Mar-14	8.19	731	0.8	6.94	7.94	245	19	260	128			1.98	37.1		
	May-14	8.01	763	12.8	8.79	8.20	763	22	20.3	274			79.6	76.9		
	Aug-14	8.18	635	20.7	9.34	8.32	652	55	200	225			95.3	59.9		
	Oct-14	7.48	710	13.3	7.65	8.05	817	19	29.4	362			47.9	108		
	Apr-15	7.75	653	7.4	10.3	7.95	730	16	39.5	298			67.3	87.0		
	May-15	7.50	680	15.0	10.0	8.30	846	11	34.7	383			54.6	111		
	Aug-15	8.00	1140	16.3	5.50	8.14	1120	22	94	605			69.4	178		
	Oct-15	8.05	490	9.0	6.96	7.80	461	86	876	148			62.4	42.0		
	Mar-16	8.13	510	6.7	9.8	8.00	624	45	98.9	240			72.0	70.9		
	May-16	7.38	615	9.8	9.0	8.22	743	12	462	291			88.0	81.6		
	Aug-16	7.27	783	21.1	9.3	8.20	1090	33	115	491			64.5	142		
	Oct-16	7.27	620	18.7	8.5	8.10	627	78	156	212			61.6	56.7		
	Mar-17	7.90	435	5.66	6.67	7.99	426	43	718	150			28.7	45.1		
	May-17	8.13	508	9.44	9.63	8.24	574	40	57.9	200			29.5	61.0		
	Aug-17	7.46	916	17.7	5.32	8.12	1180	26	54.0	586			78.7	171		
	Oct-17	6.98	504	13.46	5.39	8.09	621	76	289	249			62.6	70.0		
	Mar-18	7.40	871	3.59	6.61	8.09	800	15	15	312			123	92.7		
	May-18	7.86	462	12.50	8.25	7.80	502	45	329	177			55.8	52.1		
	Aug-18	7.60	517	19.76	5.68	8.01	832	11	162	398			67.9	113		
	Oct-18	7.81	689	13.17	5.77	7.86	939	17	55.8	323			100	94.9		
	Mar-19	6.95	314	1.60	6.55	7.34	312	91.9	246	125			23.2	36.9		
	May-19	7.77	587	10.21	13.31	7.73	712	22.2	12.0	328			52.3	94.8		
	Aug-19	7.61	481	19.5	5.53	7.88	590	34.5	77.4	250			65.7	69.1		
	Oct-19	7.69	735	15.33	7.77	7.91	823	35.9	64.5	316			98.7	93.2		
SW9 (979)	Sep-00															
	Nov-00					7.80	681	12	18	389			38	118		
	Apr-01															
	Jun-01					7.90	806	<5	28	398			46	119		
	Sep-01					8.20	812	<5	44	333			62	98		
	Nov-01					8.20	656	<5	11	302			60	87		
	Apr-02					8.20	620	<5	66	284			43	82		
	Jun-02					8.20	674	12	23	344			26	104		
	Nov-02					8.10	906	29	321	636			65	200		
	Mar-03					8.10	629	<5	5	285			51	89		
	Apr-03					8.20	821	8	12	355			79	106		
	Jul-03					8.10	616	<5	23	277			48	81		
	Oct-03					8.10	995	8	23	379			151	114		
	Nov-03					8.00	501	26	70	230			33	66		
	Apr-04					8.20	766	12	13	283			72	80		
	Jun-04					8.10	821	12	5	380			65	113		
	Nov-04					8.10	679	7	30	243			54	65		
	Dec-04					8.10	534	5	136	265			33	78		
	Apr-05					8.10	619	18	70	298			45	89		
	Jul-05						915		42	469			34	160		
	Sep-05						567		924	441			36	146		
	Nov-05					8.10	517	39		240			37	100		
	Apr-06					7.60	801	20	10	360			86	107		
	Jun-06					7.50	831	26	8	410			63	125		

Notes: - PWQO - Provincial Water Quality Objectives (July 1994) - * Values should be interpreted with caution - Units provided

- NC - No criteria - Blank - Indicates data not available

- ** Calculated value using the fraction of NH₃ from $f = 1/(10^{pKa-pH+1})$; where $pKa = 0.09018 + 2729.92/T$ and $T =$ ambient water temperature in Kelvin ($K = °C + 273.16$). Field pH is used in the equation.

**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	Fluoride mg/L NC	Magnesium mg/L NC	Ammonia mg/L NC	Un-ionized Ammonia ** mg/L 0.02	Nitrate mg/L NC	Nitrite mg/L NC	TKN mg/L NC	Phenols mg/L 0.001	BOD ₅ mg/L NC	COD mg/L NC	Phosphorous mg/L 0.03	DOC mg/L NC	Ortho-phosphate mg/L NC	Iron mg/L 0.30	TSS mg/L NC
SW8	Jun-11	<0.05	20.6	0.10	<0.001	8.3	<0.05	1.57	<0.001			0.12	8.1	<0.10		
	Aug-11	<0.05	15.9	0.11	0.002	<0.05	<0.05	4.85	<0.001			0.62	23.7	<0.10		
	Oct-11	<0.05	18.7	0.26	0.001	5.55	<0.05	2.14	<0.001			0.16	7.8	<0.10		
	Mar-12	<0.05	20.8	0.22	<0.001	4.23	<0.05	2.23	<0.001			0.04	9.4	<0.10		
	May-12	<0.05	25.6	0.03	0.001	5.42	<0.05	0.92	<0.001			0.15	5.7	<0.10		
	Aug-12	<0.05	17.6	0.02	<0.001	<0.05	<0.05	4.4	<0.001			0.76	26.1	<0.10		
	Oct-12	<0.05	17.5	0.07	<0.002	3.64	<0.05	2.34	<0.001			0.32	11.8	0.18		
	Apr-13	0.09	22.2	0.10	0.002	6.0	<0.05	<0.10	<0.001			0.08	5.2	<0.10		
	May-13	<0.25	20.6	0.05	0.001	5.94	<0.25	1.67	<0.001			0.50	5.5	<0.50	0.877	
	Aug-13	<0.10	20.3	0.69	0.014	1.86	<0.10	5.24	0.002			0.30	15.8	<0.20	1.02	
	Oct-13	<0.05	14.6	0.1	0.005	3.84	<0.05	1.51	<0.001			0.51	9.8	0.22	1.13	
	Mar-14	<0.05	8.48	0.49	0.007	0.35	<0.05	1.20	<0.001			0.27	5.3	<0.10	7.69	
	May-14	<0.10	19.9	0.05	0.001	5.38	<0.10	1.50	<0.001			0.07	6.4	<0.20	0.226	
	Aug-14	<0.10	18.4	<0.02	<0.001	0.41	<0.10	3.57	0.001			0.56	35	<0.20	2.17	
	Oct-14	<0.10	22.4	0.18	0.001	4.22	<0.10	1.26	<0.001			0.16	4.9	<0.20	0.634	
	Apr-15	<0.25	19.7	0.06	0.001	2.24	<0.25	0.99	<0.001			0.16	6.6	<0.50	0.539	
	May-15	<0.25	25.7	0.04	<0.001	3.44	<0.25	0.64	<0.001			0.10	4.9	<0.50	0.213	
	Aug-15	<0.25	39.1	0.60	0.018	1.33	<0.25	1.56	<0.001			0.21	14.4	<0.50	0.379	
	Oct-15	0.12	10.4	0.39	0.007	0.47	<0.10	6.45	<0.001			0.79	22.1	<0.20	4.69	
	Mar-16	<0.10	15.3	0.11	0.002	4.79	<0.10	1.69	0.005			0.26	9.9	<0.20	1.68	
May-16	<0.25	21.1	0.52	0.002	3.62	<0.25	1.13	<0.001			0.74	5.7	<0.50	4.22		
Aug-16	<0.25	33.1	0.10	0.001	1.00	<0.25	2.62	<0.001			0.32	31.9	<0.5	1.50		
Oct-16	0.09	17.2	0.26	0.002	<0.05	<0.05	5.97	<0.001			0.85	25.8	<0.10	2.41		
Mar-17	0.11	9.18	<0.02	<0.001	4.88	<0.05	2.61	<0.001			0.71	7.0	<0.10	1.77		
May-17	<0.05	11.7	0.24	0.006	1.73	<0.05	1.15	<0.001			0.17	5.8	<0.10	0.663		
Aug-17	<0.25	38.7	0.15	0.001	2.56	<0.25	1.29	<0.001			0.09	20.9	<0.50	0.311		
Oct-17	<0.10	18.1	0.24	0.001	2.14	<0.10	3.79	<0.001			0.52	22.8	<0.20	2.40		
Mar-18	<0.25	19.5	<0.02	<0.001	5.83	<0.25	0.74	<0.001			0.06	6.2	<0.50	0.127		
May-18	<0.10	11.3	0.26	0.004	4.66	<0.10	2.13	0.001			0.46	10.9	<0.20	0.823		
Aug-18	<0.25	28.1	0.37	0.006	1.42	<0.25	2.71	0.002			0.44	15.9	<0.50	1.72		
Oct-18	<0.25	20.8	5.8	0.088	2.80	<0.25	11.5	0.005			1.19	14.7	0.88	0.74		
Mar-19	0.126	7.92	1.07	0.001	1.30	0.048	5.81	0.010			1.34	25.7	0.67	6.36		
May-19	0.131	22.2	0.228	0.003	8.18	0.025	1.29	0.0018			0.109	8.97	0.0066	0.406		
Aug-19	0.131	18.7	0.071	0.001	0.111	<0.010	3.86	0.0014			0.379	15.6	<0.0030	2.19		
Oct-19	0.146	20.3	0.592	0.008	0.767	0.042	2.57	0.0062			0.290	15.9	0.0050	2.64		
SW9 (979)	Sep-00															
	Nov-00	0.2	23	0.18		5.43	<0.02	0.59	<0.001			0.02	3.2			
	Apr-01															
	Jun-01	0.2	25	0.07		18.9	0.02	0.7	<0.001			0.1	3.9			
	Sep-01	0.33	21	0.24		0.69	0.02	2.59	<0.001			0.73	9.8			
	Nov-01	0.22	21	0.08		5.7	<0.02	1.08	<0.001			<0.01	5.8			
	Apr-02	0.26	19	1.11		6.87	0.02	2.57	<0.002			0.19	6.7			
	Jun-02	<0.1	20	<0.05		17.7	0.02	0.94	<0.002			0.03	5.1			
	Nov-02	259	33	0.08		7.22	0.02	1.61	<0.002			0.06	9.3			
	Mar-03	0.12	15	0.06		11.1	<0.02	1.28	<0.002			<0.08	4.2			
	Apr-03	0.12	22	0.16		11.2	<0.02	1.02	<0.002			0.1	3.5			
	Jul-03	0.26	18	0.08		5.2	<0.02	0.63	<0.002			<0.05	4.1			
	Oct-03	0.21	23	0.05		4.4	<0.02	0.71	<0.002			0.08	5.6			
	Nov-03	0.28	16	0.25		4.98	0.03	1.4	<0.002			0.26	5.5			
	Apr-04	0.19	21	0.48		5.37	<0.02	2.06	<0.002			0.04	6.7	0.008		
	Jun-04	0.22	24	<0.05		5.67	<0.02	0.43	<0.002			0.05	3.6	0.04		
	Nov-04	0.24	19	4.59		5.07	<0.02	8.14	0.004			0.24	13.2	<0.002		
	Dec-04	0.4	17	0.12		6.9	ND	1.3	0.007			0.2	8.2	ND		
	Apr-05	0.1	19	2.27		8.8	<0.1	3.4	0.0010			0.16	5.4	<0.005		
	Jul-05		33	0.23		8.1	<0.3	1.2	<0.001			0.19	5.3	0.023		
	Sep-05		19	0.16		3.4	<0.3	2.3	0.0010			0.63	5.5	0.013		
	Nov-05	0.2	19	0.16		6.9	0.100						22.9			
	Apr-06	0.1	22	<0.05		9.9	<0.1	0.7	<0.001			0.04	3	<0.3		
	Jun-06	0.1	23	<0.05		11.8	<0.1	0.6	<0.001			0.05	2	<0.3		

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- * Values should be interpreted with caution

- Units provided

- NC - No criteria

- Blank - Indicates data not available

- ** Calculated value using the fraction of NH₃ from f = 1/(10^{pkA-pH+1}); where pKa = 0.09018 + 2729.92/T and T = ambient water temperature in Kelvin (K = °C + 273.16). Field pH is used in the equation.

**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	pH	Cond.	Temp.	Dissolved Oxygen	pH	Conductivity	Colour	Turbidity	Hardness	TDS	Alkalinity	Chloride	Calcium	Sulphate
		unitless	µS/cm	°C	mg/L	unitless	µS/cm	TCU	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		6.5 - 8.5	NC	field	NC	6.5 - 8.5	NC	NC	Narrative	NC	NC	NC	NC	NC	NC
SW9	Sep-06					7.60	742	68	26	350			86	110	
cont.	Oct-06					7.70	334	43	149	220			19	68	
	Nov-06					7.60	730	15	6	360			42	110	
	Apr-07					7.70	738	18	10	360			66	108	
	May-07					7.60	910	39	12	380			110	119	
	Nov-07					8.00	1010	61	74	440			115	138	
	Apr-08	7.75	584	7.6	13.42	8.10	593	14	18	240			49	72	
	Jan-08	7.37	452	4.4	13.89	7.50	432	83	69	210			41	65	
	Jun-08	7.53	620	17.4	10.13	7.80	569	13	38	290			56	85	
	Aug-08	7.69	603	17.4	9.73	7.90	531	12	42	250			37	73	
	Mar-09	8.17	423	2.6	9.27	8.00	386	23	115	170			33	53.7	
	May-09	7.47	435	13.8	7.10	7.91	488	32	92	222			33.2	66	
	Oct-09	8.25	545	12.8	5.35	8.13	631	17	24	260			56.8	73.4	
	Dec-09	8.72	709	6.1	5.97	7.99	783	12	17	349			59.5	104	
	Mar-10	7.26	570	3.5	11.79	8.06	559	25	40	239			43.8	71.8	
	May-10	8.2	670	11.1		8.29	651	24	6	262			79.2	75.6	
	Jul-10	7.83	240	26.5	5.78	8.08	311	16	57	128			15.9	37.3	
	Oct-10	7.81	640	12.5	8.67	8.25	543	23	40	225			50.3	66.2	
	Apr-11	7.63	630	10.2	9.12	8.17	660	16	23.5	278			59.9	82.4	
	Jun-11	6.75	412	16.8	7.57	8.04	439	9	36.5	194			39.5	55.1	
	Aug-11	6.56	476	23.2	7.06	8.15	442	26	154	162			43.1	44.1	
	Oct-11	7.24	681	12.5	8.72	8.12	570	37	1140	267			48.9	80	
	Mar-12	6.73	629	5.9	10.98	8.14	744	21	11.5	331			44.4	95.1	
	May-12	7.53	840	14.5	9.58	8.00	739	9	10.9	368			47.6	107	
	Oct-12	7.19	602	11.7	7.70	8.27	597	32	1150	280			59	83.9	
	Apr-13	8.29	864	6.8	8.64	7.87	836	12	313	352			72.5	105	
	May-13	7.78	663	12.0	9.15	8.19	648	<5	376	240			57.5	67.3	
	Aug-13	7.36	662	20.7	5.31	7.33	671	26	26.9	232			60.8	65	
	Oct-13	8.29	484	11.1	5.89	7.97	465	76	148	214			27.7	65	
	Mar-14	8.48	222	1.3	9.62	7.67	191	27	64.9	78			11.9	23.7	
	May-14	7.63	789	11.6	9.53	8.13	796	15	25.5	318			71.3	90.8	
	Aug-14	8.07	661	19.5	9.80	8.28	600	43	142	239			82.4	65.5	
	Oct-14	7.27	709	13.5	8.03	8.05	791	18	423	343			47.9	102	
	Apr-15	7.70	620	7.1	10.8	7.82	702	13	64.3	285			68.2	83.7	
	May-15	7.70	580	15.5	9.8	8.23	740	14	727	296			59.3	83.7	
	Aug-15	7.80	820	17.5	4.20	8.30	808	18	58	328			60.0	95.9	
	Oct-15	7.95	580	9.4	8.44	7.88	523	60	718	176			61.6	50.5	
	Mar-16	7.70	492	6.5	9.9	8.00	609	50	109	236			67.0	69.3	
	May-16	7.46	599	9.8	9.0	8.21	733	13	39.5	280			96.7	77.3	
	Aug-16	7.38	653	20.3	8.9	8.06	955	20	1510	403			46.5	117	
	Oct-16	6.95	750	18.5	8.2	8.05	743	33	2120	255			58.0	72.3	
	Mar-17	7.62	558	7.02	8.47	8.01	455	49	1080	167			35.4	49.9	
	May-17	8.11	529	8.16	6.88	8.23	581	43	60.0	212			30.5	63.5	
	Aug-17	7.75	998	19.53	6.05	7.85	752	18	1070	294			49.1	82.8	
	Oct-17	6.97	502	13.64	6.65	8.12	619	50	510	245			60.3	67.1	
	Mar-18	7.21	849	3.73	6.93	7.99	775	14	50	297			117	88.3	
	May-18	7.68	408	12.18	8.71	7.74	439	43	491	172			39.7	51.6	
	Aug-18	8.39	419	24.14	5.57	8.23	472	<5	49.4	131			55.2	30.0	
	Oct-18	7.59	824	13.25	6.31	7.82	944	20	1260	323			93.0	95.4	
	Mar-19	7.02	311	3.03	7.42	7.29	318	145	305	144			21.7	42.4	
	May-19	7.96	584	11.36	10.79	7.83	708	22.2	26.9	329			54.9	97.3	
	Aug-19	7.42	577	19.4	5.10	7.93	758	29.3	276	456			89.7	123	
	Oct-19	7.52	774	15.04	5.82	7.80	905	31.2	31.9	324			109	92.5	

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· NC - No criteria · Blank - Indicates data not available
· ** Calculated value using the fraction of NH₃ from $f = 1/(10^{pKa-pH+1})$; where pKa = 0.09018 + 2729.92/T and T = ambient water temperature in Kelvin (K = °C + 273.16). Field pH is used in the equation.

**Table E-1: Surface Water Chemistry
Oxford County Waste Management Facility**

Surface Water Station	Date	Fluoride mg/L NC	Magnesium mg/L NC	Ammonia mg/L NC	Un-ionized Ammonia ** mg/L 0.02	Nitrate mg/L NC	Nitrite mg/L NC	TKN mg/L NC	Phenols mg/L 0.001	BOD ₅ mg/L NC	COD mg/L NC	Phosphorous mg/L 0.03	DOC mg/L NC	Ortho-phosphate mg/L NC	Iron mg/L 0.30	TSS mg/L NC
SW9	Sep-06	0.2	18	<0.05		3.2	<0.1	1	<0.001			0.24	5	<0.3		
cont.	Oct-06	0.1	13	0.27		1.1	<0.1	3	<0.001			0.51	7	<0.3		
	Nov-06	0.1	20	0.07		6.8	<0.1	0.7	<0.001			0.07	5	<0.3		
	Apr-07	0.1	23	<0.05		5.7	<0.1	1	<0.001			0.06	4	0.008		
	May-07	0.1	21	0.15		7	0.1	1.2	<0.001			0.15	7	0.047		
	Nov-07	0.2	24	1.6		9	0.1	3.7	0.002			3.00	18	1.8		
	Apr-08	0.1	14	0.28	0.002	6	<0.1	1.1	<0.001			0.09	5			
	Jan-08	0.2	11	0.2	0.001	4.5	<0.1	2.7	<0.001			0.47	7			
	Jun-08	0.2	20	0.09	0.001	5.1	<0.1	0.78	<0.001			0.10	6			
	Aug-08	0.2	15	0.12	0.002	1.3	<0.1	1.2	<0.001			0.1	5			
	Mar-09	0.1	9.6	0.47	0.007	1.6	<0.1	1.2	0.002			0.26	8	0.038		
	May-09	0.16	13.8	0.289	0.002	6.65	<0.10	1.18	<0.0010			0.28	8.8	0.0271		
	Oct-09	0.16	18.7	0.201	0.008	1.4	<0.10	1.55	<0.0010			0.174	21.6	0.0039		
	Dec-09	0.14	21.5	0.099	0.007	3.99	<0.10	1	<0.0010			0.0654	6.7	0.0351		
	Mar-10	<0.05	14.5	0.02	<0.001	6.39	<0.05	1.01	<0.001			0.17	9.1	<0.10		
	May-10	<0.05	17.9	<0.02	<0.001	5.44	<0.05	1.79	<0.001			0.11	7.7	<0.10		
	Jul-10	<0.05	8.47	<0.02	<0.001	0.34	<0.05	1.06	<0.001			0.12	5.6	<0.10		
	Oct-10	0.09	14.6	0.07	<0.001	0.86	<0.05	1.64	<0.001			0.16	8.1	<0.10		
	Apr-11	<0.05	17.5	0.05	<0.001	4.27	<0.05	1.21	<0.001			0.11	5.6	<0.10		
	Jun-11	0.18	13.8	0.03	<0.001	2.17	<0.05	0.37	<0.001			0.09	5.2	<0.10		
	Aug-11	<0.05	12.7	0.05	<0.001	<0.05	<0.05	1.26	0.009			0.22	8.4	<0.10		
	Oct-11	<0.05	16.3	0.35	0.001	3.03	<0.05	3.43	<0.001			0.59	8.4	<0.10		
	Mar-12	<0.05	22.7	0.11	<0.001	4.05	<0.05	1.4	0.001			0.23	7.8	<0.10		
	May-12	<0.05	24.5	0.08	0.001	4.28	<0.05	0.69	<0.001			0.03	6.6	<0.10		
	Oct-12	<0.05	17.1	0.23	0.001	2.75	<0.05	10.1	<0.001			4.28	11.2	<0.10		
	Apr-13	0.12	21.8	0.19	0.005	5.14	<0.05	0.82	<0.001			0.13	4.2	<0.10		
	May-13	<0.25	17.4	0.08	0.001	3.85	<0.25	1.97	<0.001			0.92	6	<0.50	1.08	
	Aug-13	<0.10	16.9	0.18	0.002	0.59	<0.10	1.64	0.001			0.17	9.3	<0.20	1.17	
	Oct-13	0.14	12.6	0.11	0.004	4.4	<0.05	3.04	0.001			0.55	10.5	0.44	0.921	
	Mar-14	0.07	4.50	0.45	0.012	0.78	<0.05	1.28	<0.001			0.27	6.8	<0.10	0.820	
	May-14	<0.10	22.2	0.11	0.001	4.43	<0.10	1.37	<0.001			0.07	5.7	<0.20	0.476	
	Aug-14	0.13	18.3	<0.02	<0.001	0.57	<0.10	2.52	<0.001			0.41	12.7	<0.20	2.22	
	Oct-14	<0.10	21.4	0.30	0.001	3.54	<0.10	2.20	<0.001			0.43	4.2	<0.20	1.83	
	Apr-15	<0.25	18.5	0.18	0.001	2.10	<0.25	2.23	<0.001			0.53	5.8	<0.50	1.17	
	May-15	<0.25	21.2	0.16	0.002	2.01	<0.25	2.53	<0.001			0.54	5.8	<0.50	4.78	
	Aug-15	<0.25	21.6	3.00	0.061	<0.25	<0.25	3.98	<0.001			0.19	8.3	<0.50	3.87	
	Oct-15	<0.25	12.0	0.26	0.004	0.70	<0.25	6.68	<0.001			1.35	43.6	0.60	20.1	
	Mar-16	<0.10	15.2	0.23	0.002	4.52	<0.10	1.41	0.007			0.33	9.9	<0.20	2.54	
	May-16	<0.25	21.1	0.11	0.001	3.97	<0.25	0.70	<0.001			0.08	5.1	<0.50	0.262	
	Aug-16	<0.25	27.0	0.41	0.004	1.29	<0.25	1.93	<0.001			5.32	12.5	<0.5	19.9	
	Oct-16	0.14	18.2	0.68	0.002	0.74	<0.05	8.02	<0.001			1.93	9.3	<0.10	5.86	
	Mar-17	0.09	10.2	2.04	0.012	5.32	<0.05	5.01	0.002			1.10	23.6	<0.10	1.40	
	May-17	<0.05	13.0	0.28	0.006	2.60	<0.05	1.33	<0.001			0.19	6.2	<0.10	0.523	
	Aug-17	0.20	21.1	0.70	0.015	0.57	<0.05	1.60	<0.001			0.16	9.3	<0.10	2.06	
	Oct-17	<0.10	18.8	0.15	<0.001	1.82	<0.10	5.33	<0.001			1.86	14.6	0.43	4.79	
	Mar-18	<0.25	18.6	0.15	<0.001	4.76	<0.25	1.07	<0.001			0.16	6.3	<0.50	0.801	
	May-18	<0.05	10.5	0.21	0.002	6.29	<0.05	1.00	0.001			0.57	9.5	<0.10	0.829	
	Aug-18	0.13	13.6	<0.02	<0.002	<0.05	<0.05	1.23	0.002			0.11	8.2	<0.10	0.497	
	Oct-18	<0.25	20.5	7.52	0.069	4.66	0.49	21.2	0.013			5.14	21.7	1.53	5.14	
	Mar-19	0.161	9.31	1.77	0.002	0.519	0.053	9.62	<0.010			2.16	36.3	1.22	8.74	
	May-19	0.116	20.8	0.111	0.002	7.10	0.032	1.87	0.0028			0.20	8.61	0.0057	1.34	
	Aug-19	0.160	35.9	1.21	0.012	0.736	0.018	9.25	0.0017			1.57	16.5	<0.0030	22.3	
	Oct-19	0.147	22.6	1.26	0.011	0.737	0.054	2.75	0.0053			0.183	15.9	0.0033	2.40	

Notes: · PWQO - Provincial Water Quality Objectives (July 1994) · * Values should be interpreted with caution · Units provided
 · NC - No criteria · Blank - Indicates data not available
 · ** Calculated value using the fraction of NH₃ from f = 1/(10^(pKa-pH)+1); where pKa = 0.09018 + 2729.92/T and T = ambient water temperature in Kelvin (K = °C + 273.16). Field pH is used in the equation.